

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS

HOUSTON DIVISION

1			
2			
3	PEI-HRENG HOR)	
	Plaintiff,)	
4)	
	vs.)	CASE NO. 4:08-cv-03584
5)	
	CHING-WU "PAUL" CHU,)	
6	Defendant)	
7			

ORAL VIDEOTAPED DEPOSITION

RULING MENG

May 12, 2010

11

12 ORAL VIDEOTAPED DEPOSITION OF RULING MENG, produced

13 as a witness at the instance of the Defendant and duly

14 sworn, was taken in the above-styled and numbered cause

15 on the 12th day of May, 2010, from 9:59 a.m. to

16 4:50 p.m., before Shirlee (Sasi) Romney , Certified

17 Shorthand Reporter in and for the State of Texas,

18 reported by computerized stenotype machine at the

19 offices of Akin, Gump, Strauss, Hauer & Feld, 1111

20 Louisiana Street, Suite 4400, Houston, Texas, pursuant

21 to the Federal Rules of Civil Procedure and the

22 provisions stated on the record or attached hereto.

23

24

25

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23 ALSO PRESENT:

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1 THE VIDEOGRAPHER: Going on the record.
2 Today's date is May 12, 2010. The time is 9:59 a.m.
3 This marks the beginning of videotape No. 1 in the
4 deposition of Ruling Meng in the matter of Pei-Hreng Hor
5 versus Chang Wu Chin, Case Number 4:08-CV-03584 in the
6 United States District Court for the Southern District
7 of Texas, Houston Division.

8 This deposition is taking place at 1111
9 Louisiana in Houston. The videographer today is Bill
10 Marsh of Merrill Legal Solutions located at 315 Capitol
11 Street here in Houston.

12 The court reporter today is Sasi Romney of
13 Merrill Legal Solutions. Counsel, would you please
14 voice identify yourselves and state whom you represent.

15 MR. PERRY: Brent Perry here for
16 intervenor Ruling Meng.

17 MR. BEVERLY: Jay Beverly here for
18 plaintiff, Pei-Hreng Hor.

19 MR. HEWITT: Lester Hewitt and Rehan
20 Safiullah of Akin, Gump here defending Dr. Chu.

21 RULING MENG,
22 having been first duly sworn, testified as follows:

23 EXAMINATION

24 BY MR. HEWITT:

25 Q Good morning, Mrs. Meng.

1 A Good morning.

2 Q My name is Lester Hewitt. You and I have met
3 before, haven't we?

4 A Yes.

5 Q Was the first time we met in January 2006?

6 A I didn't recall when.

7 Q You don't remember?

8 A But I -- I met you a couple of times.

9 Q Okay.

10 A Only one time.

11 Q Have you ever had your deposition taken before?

12 A Yes.

13 Q How many times?

14 A I have deposition taken with -- in firm with
15 Alabama.

16 Q In what? I'm sorry.

17 A I have make the deposition concerning about UH
18 patent against Alabama.

19 Q All right.

20 A Just one time.

21 Q Okay. And that was in about 1993; is that
22 correct?

23 A Part -- yes.

24 Q We -- we have enough time to spend today and
25 probably run into tomorrow for this deposition. We're

1 allowed seven hours of actual deposition time. So, the
2 process will take awhile.

3 If you need a break for any reason, please
4 feel free to ask for it. I would ask you not to request
5 a break when a question is pending. It's likely I'll
6 ask some questions which won't be very clear, and if the
7 question is not clear, just ask me to clarify it, and I
8 will do so. All right?

9 A Yes.

10 Q Are you currently an employee of the University
11 of Houston?

12 A No. I'm retired.

13 Q Retired from the University of Houston?

14 A Yes.

15 Q What is your home address?

16 A 4311 Summerlee, S-u-m-m-e-r-l-e-e Court,
17 Missouri City, Texas, 77459.

18 Q Prior to today, did you take any steps to
19 prepare for your deposition?

20 A Prepare?

21 Q Yes.

22 A I would think about it.

23 Q You think about it. Did you meet with your
24 lawyer?

25 A Oh, yeah, I met with my lawyer.

1 Q And did you -- I'm not going to ask you what
2 documents you reviewed, but did you review documents in
3 this case?

4 A Oh, some of them.

5 Q Did you talk to anyone other than your attorney
6 about this deposition?

7 A No.

8 Q Do you currently do any consulting work?

9 A Well, in fact, I'm not doing consulting work.
10 I'm the vice president in the Floating Wind Farm
11 Company. We are doing the wind farm energy.

12 Q I see. And is that a company in which you have
13 an interest?

14 A Yes. Also energy savings. That's my interest.

15 Q When did you retire from the University of
16 Houston?

17 A 2007, January.

18 Q Let's go back to your education. Were you
19 educated beyond what we call high school here?

20 A No. I graduated from China. I came from
21 China.

22 Q You came from China after receiving any
23 degrees?

24 A Yeah. I have my bachelor degree from the
25 university, the Mining and Metallurgical University.

1 Q All right. And did you have any advanced
2 degrees?

3 A No.

4 Q So, when you came to United States, you had a
5 bachelor's degree?

6 A Yes.

7 Q Had you done any work of any sort
8 professionally in China before you came over to the
9 United States?

10 A Yes. I was -- came from the Institute of
11 Physics, Chinese Academy Science which is the top
12 research institute in China. And I have 25 experience
13 working a variety of material. And among this is ten
14 years experience working with superconductor, which
15 including two years with Dr. Chu, 1979 to 1981, and half
16 year in Germany.

17 Q All right. Well, let -- let's go back to the
18 China part of it --

19 A Okay.

20 Q -- first of all.

21 A Okay.

22 Q What year did you leave China and come to the
23 United States?

24 A My first visit in United States in 1979.

25 Q And did you come to the University of Houston?

1 A Yes. I was invited by Dr. Chu. He is the
2 first professor after we open the relationship, China
3 and U.S. to visit China to my institute. I was invited
4 by him to come to join his group.

5 MR. HEWITT: Okay. I'm just going to make
6 a comment for the court reporter. It's fine with me if
7 you need to ask her a word as you come -- go along just
8 so -- we'll try to keep the record as clear as we can.

9 Q (By Mr. Hewitt) How did you and Dr. Chu meet?

10 A He was invited by the director of my institute
11 to visit my institute. As I say, it's institute of
12 physics which belong to Chinese Academy Science. And
13 then he was visit the other group in my department. I'm
14 in the low temperature department which deals with the
15 superconductor, and he's in this major. That's how we
16 met.

17 Q And did you have -- you were in the low
18 temperature superconductor department --

19 A Right.

20 Q -- at the institute?

21 A We call it low temperature -- super -- low
22 temperature physics. We didn't call low temperature
23 superconductor. Low temperature physics department --
24 division in my institute.

25 Q And was the subject matter of your work at that

1 time superconducting compounds?

2 A Yes.

3 Q And what was the nature of the work that you
4 did?

5 A Your question is what I'm doing there, right?

6 Q Yeah. Yes. What were you doing there?

7 A Yes. My institute, 85 percent is physics.
8 Only less than 15 percent is material science and
9 engineer. I am being the material scientist in the
10 physics institute. My responsibility is to investigate
11 and defining the material or so-called superconductor
12 material, its optimum, prepare parameter, because the
13 process parameter is a -- great deal affect the
14 materials, electronic and magnetic property.

15 THE COURT REPORTER: And what property?

16 A Elec -- electrical and magnetic property.
17 Physical property.

18 MR. PERRY: Magnetic.

19 A You just say physical.

20 Q (By Mr. Hewitt) Magnetic -- electrical and
21 magnetic.

22 A And then also my responsibility is I have to
23 define the materials crystal structure and the phase.

24 Q Were you in -- was there some particular type
25 of low temperature materials that you worked on?

1 A Yes. I -- in fact, in -- since 1973, I have
2 been working on many of the low temperature
3 superconductor.

4 Q I'm just asking about your experience in China
5 right now.

6 A Right. And then by the time when nobody is
7 visit at that time Beijing, I was working on niobium 3
8 germanium thin film -- niobium Nb₃Ge niobium-germanium 3
9 which is -- at that time is the highest temperature
10 transition, temperature in superconductor with 23 degree
11 thin film.

12 And also I also working on the vanadium
13 silicon 3. It's considered -- vanadium, VSI₃; vanadium
14 silicon 3 so also considered one of the high temperature
15 superconductors at that time predicted but, in fact,
16 it's not. But I working on two of the projects. Thin
17 film as well as bulk. Thin film. Thin film. Thin
18 film.

19 Q As well as bulk?

20 A Yeah. I work both.

21 Q And in the process of doing your work at the
22 institute in China, you directed your work to the
23 preparation of samples in part; is that correct?

24 A Yes.

25 Q And what techniques did you use to prepare

1 samples at that time?

2 A I used a variety of techniques, such as high
3 vacuum system --

4 THE COURT REPORTER: High what?

5 A High vacuum system, sputtering,
6 s-p-u-t-t-e-r-i-n-g, evaporation to deposit the film.

7 I also used solid state reaction -- solid
8 state, s-o-l-i-d state -- solid state reaction and zone
9 melting, z-o-n-e, m-e-l-t-i-n-g, and other technique,
10 arc furnace, and all different kind of material --

11 Q All right.

12 A -- necessary to prepare my sample.

13 Q All right. Let's talk about the solid state
14 reaction for a moment. Do you recall what kind of
15 compounds that you processed into samples by a solid
16 state reaction method?

17 A At that time, it's not on superconductor, which
18 is my past experience. Before I work on the
19 superconductor, I have making all the compound, alloy,
20 ceramic material, so I have been applied for that. So
21 that's why I have that experience on that.

22 Q So, as I understand what you're saying, then,
23 you used solid state reactions to make samples in the
24 field of alloys and ceramics?

25 A Yeah.

1 Q And describe for me the steps to the solid
2 state -- of the solid state reaction that you would use
3 to make those samples.

4 A Okay. So-called solid state reaction is you
5 have put the material together when they still in solid
6 form, not liquid, not gas. Okay?

7 Q That's step 1?

8 A Right. Step 1. You weigh according to your
9 formula the ratio of the element in this material you
10 want to make. You weigh the different material and put
11 them together, ground up well. That's a very important
12 step.

13 Q And --

14 A And -- and after you grind them --

15 Q Okay. Let me just stop you for a minute. You
16 said you weigh the materials.

17 A Uh-huh.

18 Q Are you speaking, then, of -- of mole weight of
19 each of the materials?

20 A Because based on your formula, they require the
21 formula compound a certain composition.

22 Q So, you have a compound --

23 A Right.

24 Q At that time you had a --

25 A Right.

1 Q -- compound that was an alloy or a ceramic and
2 it had three or four elements in it --

3 A Right. Correct.

4 Q -- and each element had a subscript as to the
5 amount of the atomic element --

6 A Right.

7 Q -- is that correct?

8 A Correct.

9 Q And you used those subscripts to determine the
10 amount of each element to put into the formula?

11 A Correct.

12 Q All right. So you -- is that called
13 synthesizing?

14 A Yes.

15 Q Okay.

16 A It's not finished yet. That's only one step.

17 Q All right.

18 A Only put together. It's not synthesized yet.

19 Q Okay. All right. Then that's -- step 2 was
20 weighing the material?

21 A Yes. Weighing the material and put them
22 together, ground it real well because it's two different
23 materials.

24 So in order to -- to -- reaction taking
25 place well, you have to mix this material very -- mix it

1 together well because it's powder form. That's the
2 second step.

3 And after that -- you want me to continue?

4 Q Just a minute, please. All right. So, you
5 called the second step weighing the material and mixing
6 to a powder form? All right.

7 A Not mix them in powder form. They already
8 mixed powder form. Mix them well together.

9 Q Okay. But they're still a mixture at that
10 point, correct?

11 A Yes. It's not a compound. It's mixture
12 material. Raw material. Raw material.

13 Q Right. What is step 3?

14 A Step 3, mostly in order to reaction well, we
15 press them into a certain form, apply different
16 pressure. Because the reason, we want the contact well
17 when the solid -- solid form if they didn't kind of
18 grind them well no reaction well so we need to -- press
19 into the pellet -- press into certain form.

20 Q All right. Called a pellet?

21 A Yeah, pellet.

22 Q And did you use what's known as a standard
23 laboratory press to make the pellet?

24 A It's not critical. Any pellet you can use it.

25 Q All right. All right. So, step 3 is to make

1 it into a pellet, correct?

2 A Yes.

3 Q And then what was the fourth step?

4 A You put this material in the container. The
5 container can be aluminum zirconium oxide, aluminum
6 oxide, AL-203 -- this is called oxide or zirconium.
7 Zr -- Zr. It depend on what temperature you require.

8 Q I'm sorry. Did you say zirconium?

9 A Zirconium.

10 Q Z --

11 A R -- r --r.

12 Q Zr.

13 A R, zirconium. Because it depend on what
14 temperature you require. For low temperature mostly
15 under 1,000 can use aluminum. Higher, you should use
16 zirconium. This container sometimes can be metal like
17 platinum. It depend. They call platinum crucible. It
18 depend what kind of temperature --

19 THE COURT REPORTER: They call platinum --

20 A Platinum, Pt.

21 Q (By Mr. Hewitt) Platinum.

22 A Cru -- crucible -- crucible or both. You can
23 call them either way. Like cru -- crucible, c-r-u --
24 crucible and used as both.

25 Q Crucible?

1 A Yeah. Crucible. I'm sorry. My --

2 Q That's all right.

3 A My English is --

4 Q All right.

5 A -- accent is --

6 Q All right. We're going to get there. That's

7 okay.

8 A You put them in container --

9 Q All right.

10 A -- the cold container and then put them in the

11 furnace.

12 Q Okay. And what --

13 A So they can be different type of furnace.

14 Q And what temperature ranges would you typically

15 use?

16 A It depend on what the material would require.

17 Q All right. Give me the range from across all

18 the materials.

19 A Well, at least about 600 and up to 1200.

20 Q 600 to 1200 degrees Centigrade?

21 A Yeah.

22 Q And for how long would you leave them in the

23 furnace?

24 A Also depend on the material.

25 Q All right.

1 A Can be shorter, 20 minutes; can be left for 18
2 hours, two days. It depend.

3 Q And then after that step -- well, first of all,
4 does the chemical reaction then take place during the
5 time that this mixture is being heated?

6 A Correct.

7 Q All right. And -- so, at the end of this, you
8 take the pellet out and it's the -- it's been chemically
9 reacted, correct? And --

10 A Correct.

11 Q Is there a next step?

12 A Sometime you might re-ground it and synthesize
13 again because one-time reaction might not completely.
14 You require the second time or sometime you need
15 annealing.

16 THE COURT REPORTER: Need what?

17 Q Annealing.

18 A Annealing. A-n-n-e-a-l-i-n-g.

19 Q And I was going to --

20 A Heat -- okay.

21 Q I was going to ask you, would annealing be the
22 next step?

23 A It depend on material.

24 Q All right.

25 A Sometime need it, sometime doesn't need it.

1 Q All right.

2 A Really.

3 Q If you anneal, describe for me the annealing
4 process.

5 A Well, with so-called annealing is apply the
6 lower than the reaction temperature. And mostly the
7 purpose annealing is fill up some kind of oxygen and
8 different atmosphere.

9 Q So, did -- would you anneal in a reduced oxygen
10 atmosphere?

11 A No, no, no. No, it depend. I have to take
12 that back. It depend.

13 For example, this high temperature
14 superconductor is oxide. And oxygen content is crucial
15 for their physical property.

16 Q All right. Now, just to interrupt you for a
17 second. We're still talking about the work you did in
18 China. Understand?

19 A Okay. In China?

20 Q In China.

21 A Okay. The same situation. If you consider you
22 want to full fill the oxygen in this compound, you can
23 anneal that in oxygen atmosphere.

24 MR. BEVERLY: If you want to what the
25 oxygen?

1 A Huh?

2 MR. BEVERLY: If you wanted to do what to
3 the oxygen?

4 A Annealing.

5 Q (By Mr. Hewitt) You said a full field?

6 A Full fill that means they require -- the
7 compound different structure. If your atom occupy
8 different seat -- do you understand what I mean --
9 sometime the compound oxy -- oxygen they require six
10 oxygen, maybe eight oxygen, to synthesize and may not
11 have order the eight oxygen, so you have to put the low
12 temperature and anneal for long time in order for full
13 fill oxygen sit in this compound.

14 Q And in doing that process, would you provide
15 oxygen, then, during the annealing?

16 A Yes.

17 Q And would the oxygen be in a -- in a partial
18 vacuum rather than atmospheric pressure?

19 A No, no, no. Just from the cylinder.

20 Q So, you just provide oxygen?

21 A Uh-huh.

22 Q Annealing doing -- using oxygen?

23 A I'm talking if you need it.

24 Q If you need it.

25 A Not necessary every sample need to do it, no.

1 Q But you did in some circumstances --

2 A Right.

3 Q -- do annealing, right?

4 A That's right.

5 Q And did you do the annealing on any high
6 temperature superconductive compounds at that time?

7 A You mean in China?

8 Q Yes.

9 A During that time in China, there are no high
10 temperature superconductor yet. We have so-called low
11 temperature superconductor. And most low temperature
12 superconductor is alloy and -- and metal --
13 inter-metallic compound. Inter-metallic compound.

14 Q Intermetallic.

15 A Mostly. It's not oxide -- you understand? Not
16 ceramic material. So, therefore, there's not much
17 demand for that. They -- sometime they analyze the
18 oxygen at all. This material is alloy, a-l-l-o-y, or
19 inter-metallic compound.

20 Q Inter-metallic.

21 A Because a different compound. An alloy is that
22 the alloy you can form different composition. Its
23 con-coordinates melt. The ratio doesn't change it.
24 They -- they always form.

25 But most of the inter-containment --

1 inter-metal -- inter-metallic compound is not. For
2 example, niobium germanium 3 can only form one
3 niobium --

4 Q Niobium. N-i-o-b-i-u-m.

5 A Yeah. You -- like alloy, that require a
6 certain ratio. You can -- for example, at that time the
7 highest transition temperature is niobium-germanium 3
8 also in thin film form. You have to do stoichiometry
9 3 -- stoichiometry -- one niobium, 3 germanium. You
10 cannot make one niobium, two germanium. Okay? So,
11 therefore, it doesn't require oxygen.

12 Q All right. I understand. Let me ask the next
13 question. And I guess we'll all pitch in to try to get
14 the word straight, if that's acceptable.

15 MR. BEVERLY: Well, I think if -- if
16 someone doesn't understand a word, they should speak up.

17 MR. HEWITT: Yeah.

18 MR. BEVERLY: I -- I assume you have no
19 problem with that.

20 MR. HEWITT: No, I don't.

21 Q (By Mr. Hewitt) Of course, there will be some
22 gaps -- there may be some gaps and you'll have a chance
23 to write in a correction after the deposition if we
24 don't understand the word.

25 A Okay.

1 Q What -- what do you mean by the term low
2 temperature superconductor?

3 A The superconductor was discovered in 1911 by
4 Dr. Onnes --

5 Q No, I --

6 A And all the transition temperature at that time
7 is -- the highest is 23 degrees.

8 Q All right.

9 A Okay? Before that, we did not call it low
10 temperature superconductor. We just simple
11 superconductor because there's no high one. So, until
12 1986, Müller and Bednorz -- Müller and Bednorz --
13 Bednorz -- how to spell them.

14 MR. PERRY: Bednorz is B-e-d-n-o-r-z and
15 Muller?

16 A And Muller --

17 MR. PERRY: M-u-l-l-e-r.

18 A They discovered the
19 lanthanum-barium-copper-oxide have transition
20 temperature in 35 degrees. And his paper was -- the
21 title of his paper is possibility of high temperature
22 superconductor.

23 Q (By Mr. Hewitt) All right. We will get to
24 lanthanum and barium.

25 A So that's how --

1 Q As I understand it --

2 A Before that, there's no called so high and low
3 temperature --

4 Q All right.

5 A -- superconductor. It's just superconductor.

6 Q Let me see if I understand, then. Prior to the
7 Bednorz, Muller article --

8 A Uh-huh.

9 Q -- it was your understanding that all the
10 superconductors were considered lower temperature?

11 A We just call superconductors.

12 Q You just called them superconductors?

13 A Yeah.

14 Q But after Bednorz and Müller --

15 A Right.

16 Q -- then there was a -- the field of higher
17 temperature superconductors came about?

18 A Correct.

19 Q All right. What year did you come to the
20 United States?

21 A My first visit United States was 1979.

22 Q And you came to work for Dr. Chu; is that
23 correct?

24 A Yes. I was invited by him to join his group.

25 Q And what was your title at that time?

1 A I think at that time I called myself visiting
2 scholar because based on Chinese scholar man, we just
3 visiting for two years.

4 Q All right. So, you had a -- a visa for two
5 years?

6 A Yes.

7 Q And during that two-year period, 1979 to 1981,
8 did you work as a materials scientist?

9 A Correct.

10 Q And what kind of compounds did you work on
11 during that period?

12 A Oh, many, many of them.

13 Q Superconductors?

14 A Superconductor material, a variety of
15 superconductor material.

16 Q All right.

17 A I -- I cannot name them because so many.

18 Q All right. During -- during this two-year
19 period, 1979 to 1981, did you ever use the solid state
20 reaction method to prepare the samples?

21 A Yes. In fact, at the very beginning, all the
22 superconductor we -- we work for is alloy. I use arc
23 melt, also zone melt, this melt -- arc melt -- arc
24 melting.

25 Q Arc -- arc melting.

1 lithium titanium oxide and I don't recall the --

2 A I think those are two. But I cannot remember
3 the exact formula.

4 Q (By Mr. Hewitt) Exact formula.

5 THE COURT REPORTER: Okay. That was it.
6 Thank you.

7 Q (By Mr. Hewitt) And you prepared lithium,
8 titanium, oxide samples to try to duplicate the work at
9 Bell Labs; is that correct?

10 A Yes.

11 Q And was that work done under the supervision of
12 Dr. Chu?

13 A As I mentioned before, Dr. Chu invite me as a
14 materials scientist to come to work with him together.
15 So, basically, my responsibility is to investigate and
16 defining all the material process and parameter and
17 produce that.

18 Q Well, from --

19 A From this point of view, we kind of work
20 together as a team.

21 Q Now, during this period, 1979 to 1981, then, I
22 understand it that a paper came along by Bell Labs and a
23 decision was made by the university to try to duplicate
24 the work of Bell Labs --

25 A Yes. Yes.

1 Q -- and then improve on it, correct?

2 A Right. Can I correct one thing? The formula
3 lithium-titanium-oxide, I cannot recall the exact
4 formula.

5 Q I understand.

6 A It might be something -- missing one of the
7 elements but I couldn't recall right now.

8 Q We -- we'll understand there may be an element
9 missing.

10 A Right.

11 Q And I take it a paper was ultimately was
12 produced at that time, or one or more, by the
13 university?

14 A Yes. One is 13 degree and one is 15-degree
15 Kelvin.

16 Q All right. Now, during this period, 1979 to
17 1981, what was Dr. Chu's title?

18 A Professor.

19 Q And your title that you said you gave yourself
20 was visiting scholar; is that correct?

21 A At that time, I believe I also called research
22 associate, or something like that. In United States
23 they call me like that.

24 Q All right. And -- and when this paper came out
25 from Bell Labs --

1 A For oxide?

2 Q Yes.

3 A No, I can't recall that.

4 Q No, no. I'm sorry. Let me ask the rest of the
5 question.

6 A I believe -- I thought it was before I returned
7 to China which is -- should be 1980 -- late 1980 or
8 1981.

9 Q All right. When the paper was received at the
10 University of Houston, did Dr. Chu make the decision for
11 the lab, including yourself, to try to duplicate the
12 compounds?

13 A Correct.

14 Q And did Dr. Chu contribute, beyond making the
15 decision to duplicate the compounds? Did he -- for
16 example, did he suggest other elements at that time?

17 A As I remember, he do not suggest any
18 substitution anything.

19 Q No substitution at that time?

20 A No, he did not mention anything. His
21 contribute -- I think he bring us this direction to
22 working toward the oxide. Okay? Follow up the new
23 result with Bell Labs. And, also, of course, he analyze
24 the result. I make the sample and we do the low
25 temperature measurement. He would analyze the result

1 and review the result. I think that's his contribution.

2 Q Now -- all right. How were the samples
3 prepared of the lithium-titanium-oxide? How were they
4 prepared?

5 A Basically, solid state reaction.

6 Q All right. Another solid state reaction?

7 A Correct.

8 Q And then after 1981, what did you do next?

9 A I was invited by the professor in Germany,
10 Konstanz University. The professor they call Bucher --
11 Dr. Bucher.

12 Q Bucher?

13 A Bucher.

14 Q Spell it, please.

15 A B-u-c-h-e-r. B-u-c-h-e-r.

16 Q Thank you.

17 A Bucher. Ernst Bucher. Ernst Bucher. It's E.
18 Bucher in Konstanz University in Germany.

19 Q And how long did you go over to Germany for?

20 A Possibly a few months, less than a half year.

21 Q Okay. And did you do superconductor work --

22 A Of course, yes.

23 Q -- work over there?

24 A Yes. Yeah.

25 Q Did you make samples?

1 A I -- in fact, I -- I bring a list from Dr. Chu.
2 He wanted me to grow a lot of single crystal --
3 superconductor single crystals, which he -- he do not
4 have the technique. He do not have the capability to
5 grow. He doesn't know how to do it. But Dr. Bucher is
6 his senior in Bell Labs. They work -- they had work
7 together.

8 Q Did -- did you know how to grow single crystals
9 before you --

10 A Oh, I know --

11 Q -- came over there?

12 A I know how to grow single crystal but not like
13 Dr. Bucher.

14 Q All right.

15 A Because he have a lot of facility. He is not a
16 physicist. Also as well is a great material scientist.
17 Dr. Chu know he know him well. And then I went there to
18 grow single crystal using variety methods.

19 Q And one of the -- one of the methods was solid
20 state reaction?

21 A No, no. Single crystal could not use that.

22 Q Okay.

23 A We use vapor transfer. We use arc melting.

24 Q Arc melting.

25 A Arc melting.

1 Q Arc melting.

2 A We use vapor transfer. We use zone melt.

3 Q Zone melt.

4 A Zone melting. He have very particular super
5 high vacuum, super high temperature. They call high
6 temperature furnace in a vacuum to grow different kind
7 of two-dimensional, one-dimension different single
8 crystals.

9 Q All right.

10 A I grow 26 single crystal in there.

11 Q Okay. That's enough. We can move on.

12 After -- what did you do next after going
13 to Germany?

14 A I returned to China for my institute.

15 Q For additional education? For education or for
16 work?

17 A No, I go back to my work.

18 Q Okay.

19 A I was the research scientist in China.

20 Q Research scientist?

21 A Yeah, I was research scientist in China. I go
22 back to my work.

23 Q And how long did you stay in China?

24 A What do you mean? You mean before the second
25 time visit?

1 Q Yes.

2 A Okay. I was -- stay there since '81 until '84,
3 approximately two years, or a little bit more.

4 Q And during this period, did you work on
5 superconductors again?

6 A I continued to cooperate with Dr. Chu because
7 he still require some oxide single crystal and -- and
8 other crystal.

9 In Germany, I have grow the single crystal
10 to send order -- half the sample to him and bring --
11 half go back to China to do the measurements in my
12 institute. So during that time I continued to cooperate
13 with different projects.

14 Q Did you also do other work -- investigative
15 work while you were in China from 1981 to 1984?

16 A Superconductor.

17 Q Superconductor --

18 A Right.

19 Q -- correct?

20 Did you prepare samples using the solid
21 state method during the period 1981 to 1984?

22 A Not very much, because I still working in the
23 metal, superconductor.

24 Q All right. But you did some work with solid
25 state?

1 A Yeah.

2 Q All right. And then after 1984, what did you
3 do next?

4 A Well, Dr. Chu was invite me to come to the
5 United States again because he consider the cooperation
6 when I was in China is too slow.

7 Q So, you came over to the United States?

8 A So he want me to come again.

9 Q Uh-huh. And --

10 A I came.

11 Q You -- you came?

12 A Yes.

13 Q And you stayed until you retired --

14 A Yes.

15 Q -- is that correct?

16 A Correct.

17 Q And did you return in 1984 or 1985?

18 A I returned to U -- UH in 1974 -- 1984 --

19 Q Okay.

20 A -- the second visit.

21 Q And from 1984 to 1986 and -- and -- let me --
22 let me define something for you.

23 A Okay.

24 Q I think this dispute relates to everything that
25 happened from the time of the -- the university learned

1 of the Bednorz/Müller article, so I'm going to divide up
2 my questions. And I want to talk to you about what you
3 did between 1984 and up to the time of the Bednorz and
4 Müller article was received by you at the university.

5 A Okay.

6 Q What work did you do during that period?

7 A In fact, when I returned, Dr. Chu told me he
8 had very tight budget. Superconductivity research was
9 in the time new, very difficult to apply for the grant.
10 So, he decided to set up the center they call mag --
11 magnetic material center.

12 Q I'm sorry. What was the name?

13 A Magnetic material.

14 Q Magnetic material?

15 A Right. Because magnetic material can easy
16 to -- to get the grant. So, I -- we was using this
17 title. I work with gamma iron oxide film -- gamma --

18 THE COURT REPORTER: Worked with what?

19 A Gamma iron oxide film, the magnetic film as a
20 recorder. And simultaneously I still continue work for
21 some of the superconductor material.

22 Q (By Mr. Hewitt) All right.

23 A But we use this money to support our research.

24 Q I see. On the superconductive side?

25 A Sorry. Can I have one more? Also, at the same

1 time Dr. Chu was the director a the other center they
2 call NASA center, space center in -- in -- in UH.

3 Q Yes.

4 A Space center is the same. We want to use a
5 high vacuum in the shuttle to grow film --

6 THE COURT REPORTER: A vacuum in the what?

7 A In the --

8 Q (By Mr. Hewitt) Shuttle.

9 A -- shuttle to grow film. Because during that
10 time we do a variety out there actually a little bit,
11 not hundred percent concentration superconductor. We do
12 gamma oxide film.

13 Q Well, let's just talk about the
14 superconductors.

15 A Okay.

16 Q All right. 1986 up to the time of Bednorz and
17 Müller articles received, did you prepare samples of
18 superconducting materials during that time?

19 A When?

20 Q What?

21 A When?

22 Q From 1984 --

23 A Can you repeat again?

24 Q -- up to the Bednorz and Müller article in
25 1986.

1 A Yes, sure.

2 Q And did --

3 A Because --

4 Q Did you use a solid state reaction?

5 A I try to remember. We work in the Chevel
6 phase.

7 THE COURT REPORTER: Worked in what?

8 A Chevel is the one person name. I don't know
9 how to spell his name. C-h-e-v something.

10 MR. SAFIULLAH: Chevel. It's C-h-e-v-e-l.

11 THE COURT REPORTER: I'm sorry. What is
12 it?

13 MR. SAFIULLAH: Chevel is C-h-e-v-e-l.

14 A Right. So-called phase something to do with
15 selenium compound Se, selenium. Selenium compound.
16 Selenium and sulfur.

17 Q (By Mr. Hewitt) Sulfide?

18 A Yeah. Which we use solid state reaction and,
19 basically, we use this method to do it.

20 Q Then let's move on, then, to when you
21 received -- I -- I'm sorry.

22 During this time, from 1984 up to Bednorz
23 and Müller, the lab was still Dr. Chu as -- as part of
24 his professorship; is that correct?

25 A Yes, he's professor all the time.

1 Q And you were working in the lab as a materials
2 scientist?

3 A Yes.

4 Q Now, when was the Bednorz and Müller article
5 received by you?

6 A I remember it was the end of November or
7 December of 1986. I didn't remember -- when? November
8 or December 1986, around that time. Maybe November. If
9 I didn't make mistake, maybe November '86.

10 Q I previously marked the Bednorz and Müller
11 article as Exhibit 3. Is this the article you received
12 from a friend in China?

13 A Yes.

14 MR. BEVERLY: Was that Exhibit 3 to
15 Dr. Hor's deposition?

16 MR. HEWITT: Right. I'm continuously
17 numbering, for your information.

18 MR. BEVERLY: That's good.

19 MR. HEWITT: Did you -- you got one. Or
20 did you get one?

21 Q (By Mr. Hewitt) When you got this article, Dr.
22 Chu had already gone to the National Science
23 Foundation --

24 A Yes.

25 Q -- is that correct --

1 A Yes.

2 Q Dr. Chu left for the National Science
3 Foundation in about September of 1986; is that correct?

4 A I didn't recall exact time. Maybe. I cannot
5 tell exactly when he leave, no.

6 Q All right. What was your understanding of what
7 Dr. Chu was going to be doing at the National Science
8 Foundation?

9 A In fact, I was come from China. I do not know
10 all the system running in the United States, and I
11 really don't care and understand a lot about, you
12 know -- I -- he mentioned me to something he want to
13 serve in the national lab. Maybe he get to know a lot
14 of people in the future as a benefit to our proposal to
15 get the research going. That's my understanding.

16 Q All right. Did you have an understanding of
17 what Dr. Chu's role was going to continue to be at the
18 university while he was at the National Science
19 Foundation?

20 A I think he still the professor, is my boss.
21 That's what I'm thinking.

22 Q All right. And during -- now, the period that
23 we're particularly concerned about in this dispute is
24 the period between the time you received the Bednorz and
25 Müller article and the time that the last of a group of

1 patent applications was filed on March 26, 1987.

2 So, whenever you received Bednorz and
3 Müller up to March 26, 1987, during that period of time,
4 Dr. Chu remained your boss; is that correct?

5 A Yes, he's my boss.

6 Q And during that period of time, Dr. Chu
7 remained active in communicating with you regarding the
8 work of the lab; is that correct?

9 A He did communicate with me.

10 Q All right. Now, when the Bednorz and Müller
11 article was received by you, you left a copy of it on
12 his desk; is that right?

13 A Yes.

14 Q And what was the purpose of leaving the copy on
15 his desk?

16 A It was on the weekend I got the letter. I got
17 very excited because Dr. Chu and I share the same dream
18 and goal. We want to find high temperature
19 superconductor. So when I saw this paper, of course, I
20 would jump up and say we should do that. And I know
21 every weekend he come very early. That's why I put the
22 paper on his desk.

23 Q All right. And did he then receive the paper
24 and review it?

25 A When -- Saturday I walk in his office. He's

1 not only reviewed it, he also in the library copying two
2 of the other paper, related paper. Okay. So, that's
3 it.

4 Q Was Dr. Hor present at the time?

5 A No.

6 Q Did Dr. Hor get a copy of the Bednorz and
7 Müller article?

8 A I don't recall that.

9 Q Sorry?

10 A I don't recall that. I only give that one to
11 Dr. Chu.

12 Q And did Dr. Chu give you any instructions
13 regarding what to do with the Bednorz and Müller
14 article?

15 A In fact, it was discussed. And, first of all,
16 we both have no doubt that we would do it. Because
17 that's our philosophy. We have talked many times. We
18 don't afraid about failure a thousand times but we will
19 not miss any opportunity so, therefore, we say, first of
20 all, we decide to do it.

21 Q All right.

22 A And after that --

23 Q Now, let me -- let me just stop you right there
24 for a moment just to be sure I understand.

25 Dr. Chu is in charge of the lab; is that

1 correct? Is that correct? At that time, he was in
2 charge of the lab?

3 A He was still my boss.

4 Q All right.

5 A But he's away for a year -- only -- I don't
6 know what you mean in charge. I don't understand.

7 Q All right. Would -- did you have the authority
8 by yourself to decide to devote the lab resources to
9 work on the Bednorz and Müller article of Exhibit 3?

10 A I think I can. The reason Dr. Chu always open
11 mind. He always encourage people to work independently,
12 creative, if -- even without Dr. Chu's permission.
13 Mostly I would ask his permission because that's a new
14 thing. But even without his permission, I think I would
15 do it because he always welcome any creative idea --

16 Q But Dr. --

17 A -- or independent working.

18 Q Dr. Chu was in favor of doing research into the
19 Bednorz and Müller article, wasn't he?

20 A Of course, yes.

21 Q And did he intend for you -- did he instruct
22 you to follow, in essence, the same procedure you
23 followed earlier with the lithium-titanium-oxide, that
24 is, to first prove up or -- or recreate the Bednorz and
25 Müller compounds?

1 MR. PERRY: Objection, form.

2 A Well, when we discussed how to reproduce the
3 results, we have different opinion.

4 Q (By Mr. Hewitt) What was the difference of
5 opinion?

6 A Dr. Chu said on the paper they indicate that
7 it's very difficult to form this compound by solid state
8 reaction; we better follow the way they say, the wet
9 chemistry method.

10 And I insist no, I think we can use the
11 solid state reaction method to try this compound. But
12 later on -- as I told you, Dr. Chu has very open mind.
13 He says, Okay. I beg him, "Dr. Chu let me try it. I
14 believe I can do it by solid state reaction method."

15 Q And at that point in time, you considered
16 yourself an expert in the solid state reaction method?

17 A Yes.

18 Q And did you consider yourself an expert because
19 you had used the solid state reaction method --

20 A Correct.

21 Q -- all the way back to when you were in China
22 and from that time forward?

23 A Not only that --

24 Q Just answer that question first.

25 A Yes.

1 Q You did? All right. Go ahead.

2 A Not only that, I knew why the people cannot use
3 the solid state reaction, because the
4 barium-carbon-oxide is a very stable compound.

5 THE COURT REPORTER: Is a what --

6 A Barium BaCo₃ is a very stable compound. They
7 decompose at very high temperature, about 1,000, which
8 is higher than the material reaction temperature. Am
9 I -- am I clear?

10 So, therefore, they have to use wet
11 chemistry method. They don't dare to do the solid state
12 reaction method. But I have my background knowledge. I
13 remember barium-carbon-oxide can -- can decompose --
14 decompose under 1,000, around 850 with copper
15 resistor --

16 Q With what? I'm sorry?

17 A Copper.

18 THE COURT REPORTER: Copper resistor?

19 A Single barium carbonate -- single barium
20 carbonate can -- have to decompose very high
21 temperature. But if you put the copper with them
22 together, the lower the decomposed temperature.

23 Q The temperature of decomposition?

24 A Lower. That's my -- I remember I have some
25 kind of knowledge about that. That's why -- but I'm not

1 quite sure at that time. That's why I asked Dr. Chu, I
2 said, "Dr. Chu, let me try it. I believe it can work."

3 Q Now, what was the method that was used by
4 Bednorz and Müller on its lanthanum bar -- excuse me --
5 on its barium-lanthanum-copper-oxygen system? What was
6 the method of preparation of samples used by Bednorz and
7 Müller?

8 A You asked Bednorz method?

9 Q Yeah.

10 A I think they use a barium nitrate and the
11 copper nitrate and then they can use a wet chemistry
12 method to dissolve this compound together.

13 And in this case, they can produce
14 compound barium and copper oxide. After that, then
15 next -- second step they still have to go through the
16 synthesize processing in order to get the reaction. The
17 source wet chemistry method they also first step to
18 decompose the barium.

19 Q All right. So, do you know whether or not
20 Bednorz and Müller also used, as part of their
21 preparation technique, the solid state reaction
22 technique?

23 A Yes.

24 Q They did?

25 A Yes. But that's the second step.

1 Q So, they used --

2 A So their method basically is the wet chemistry
3 method.

4 Q All right. So, the first step in their method
5 was wet chemistry?

6 A Yes.

7 Q And the second step was solid state chemistry,
8 correct?

9 A Yeah, solid state reaction. They have to go
10 there.

11 Q All right. If you look on the second page of
12 Exhibit 3, which is page 190 at the top -- are you with
13 me?

14 A Yes.

15 Q In the left-hand column under Roman Numeral II,
16 experimental sample preparation and characterization --

17 A Excuse me. Can I use my glasses?

18 Q Oh, yes.

19 A Thank you.

20 Q All right. Roman Numeral II, Experimental --
21 do you see that?

22 A Uh-huh.

23 Q And then Sample Preparation and
24 Characterization?

25 A Uh-huh.

1 Q So, the first step they used was the cold
2 precipitation method. Do you see that?

3 A Yes.

4 Q And they used an aqueous solution, right?

5 A Uh-huh.

6 Q And then using a precipitant, they formed a
7 mixture, correct?

8 A Yes.

9 Q But the mixture had not -- was not a chemical
10 reaction yet, was it?

11 A Yes.

12 Q Correct?

13 A Uh-huh.

14 Q In order to get a chemical reaction, they then
15 had to use the solid state reaction method, didn't they?

16 A Right.

17 Q And in the solid state reaction method, they
18 heated to 900 degrees Centigrade for five hours --

19 A Uh-huh.

20 Q -- and then the product was pressed into
21 pellets at four kilobar --

22 A Yes.

23 Q -- and reheated to 900 degrees for sintering,
24 correct?

25 A Yes.

1 Q Now, what is four kilobar in p.s.i.?

2 A I think that's a pressure indicator.

3 Q Do you know what it is, what the equivalent is?

4 A I think you have to convert to the atmos -- I
5 don't quite clear how to convert this --

6 Q All right.

7 A -- pressure.

8 Q And so if I understand what you've said, you
9 recommended to Dr. Chu that you use a dry method to form
10 the original mixture rather than the wet method?

11 A Yes. Directly use the solid state reaction.

12 Q Right. But -- but just as in Bednorz and
13 Müller, you intended and did use the solid state
14 reaction method to obtain the chemical reaction; is that
15 correct?

16 MR. BEVERLY: Objection, form.

17 A Please repeat again.

18 Q (By Mr. Hewitt) Yes. In other words, when you
19 were preparing your samples --

20 A Uh-huh.

21 Q -- to the -- using the same compounds as
22 Bednorz and Müller --

23 A Uh-huh.

24 Q -- you used the solid state reaction method --

25 A Uh-huh.

1 Q -- in order to obtain the chemical reaction?

2 A Correct.

3 Q And that is exactly what Bednorz and Müller
4 did, correct?

5 A I think theirs is slightly different because
6 I'm directly use a solid state reaction with our first
7 step. I don't consider this exactly what he's doing.

8 Q No, but I asked you about the second step. In
9 order to obtain the chemical reaction, isn't it true
10 that you -- Bednorz and Müller and you --

11 A Second step -- yes.

12 Q Is what? The same?

13 A Second step is the same.

14 Q All right. And then as a third step, the
15 product was pressed into pellets --

16 A Yes.

17 Q -- just as you, in your samples of Bednorz and
18 Müller's compound, you pressed it into pellets, correct?

19 A Yes.

20 Q And then the next step was reheated to 900
21 degrees Centigrade for sintering and you also used a
22 sintering step in that same range; didn't you?

23 A No. Different.

24 Q What did you do?

25 A I used the reduced atmosphere.

1 Q The what?

2 THE COURT REPORTER: Reduced atmosphere?

3 A Yeah. Doing the synthesize condition, I used a
4 different condition with Bednorz. I used a reduced
5 atmosphere to synthesize this compound.

6 Q (By Mr. Hewitt) Now did you --

7 A Only took 20 minutes.

8 Q All right. Did you use the reduced
9 atmosphere --

10 A During the synthesize condition.

11 Q Okay. I'm sorry. I'm not getting that word.
12 Sintering?

13 A Sintering. Okay. The solid state reaction is
14 tell it like a tool. Okay?

15 Q Tool?

16 A Tool. Okay. So, everybody can use this
17 method, but you can use it to -- different way. I used
18 reduced atmosphere method to synthesize this compound
19 and form that within 20 minutes.

20 Q Okay. I'm sorry. The word you're saying is
21 synthesise, isn't it? Twenty minutes to synthesize the
22 compound?

23 A Yeah. Solid state reaction you can call
24 synthesise. Okay?

25 Q All right.

1 A It only took 20 minutes --

2 Q Okay.

3 A So that's totally different with their
4 condition.

5 Q And you used this reduced oxygen atmosphere to
6 speed it up?

7 A Correct. Totally correct.

8 Q Okay.

9 A For that reason --

10 Q Uh-huh.

11 A -- we all the time repeat all the group in the
12 world.

13 Q Was -- was it known to you and others -- other
14 materials scientists that sintering could be done in a
15 reduced oxygen atmosphere?

16 A Yes.

17 Q And what were -- were the known benefits as of
18 this time to sintering in a reduced oxygen atmosphere?

19 A Because I know that barium copper oxide have to
20 decompose, because barium oxide and cop -- copper oxide
21 too, you know, CO₂. The carbonate, that -- this thing
22 is very harmful for the material reaction. You have to
23 try to remove this gas from your atmosphere. You
24 understand me?

25 When it decomposes, you have to remove

1 carbon dioxide out. So, the only way I can remove that
2 is a pumping reaction --

3 THE COURT REPORTER: Remove what?

4 MR. HEWITT: Pumping.

5 A Carbon dioxide, CO₂. Okay? Barium copper,
6 they -- they have to decompose to be barium oxide in
7 order to reaction with yttrium or whatever material.
8 Barium carbonate will not react with anything. You have
9 to decompose into barium oxide itself and carbonate.

10 Q (By Mr. Hewitt) Was it known to you and others
11 at this time, when you were -- you and the university
12 lab was working on proving out the Bednorz/Müller
13 compounds to sinter using a reduced oxygen atmosphere?
14 Was that a known step?

15 A What's your question?

16 Q Yeah. Had -- in other words, had other
17 materials scientists used for years a reduced oxygen
18 atmosphere for sintering?

19 A Yes, I have experience before. I have
20 synthesized material in different atmosphere --

21 Q Right.

22 A -- oxygen reduced atmosphere and different
23 kind -- it depend your purpose.

24 Q And --

25 A But for this purpose is one to remove the

1 carbon dioxide.

2 Q All right. And in addition to you doing
3 sintering before under reduced oxygen atmosphere, other
4 scientists had done the same thing, right?

5 A I believe so.

6 Q Was it known to you at this time, when you were
7 proving up Bednorz and Müller compounds, that carbon
8 dioxide had to be removed from the system in order to
9 enhance the oxygenation?

10 A It's not enhance oxygenation.

11 Q All right.

12 A It's enhance to reaction.

13 Q Enhance the reaction?

14 A Uh-huh.

15 Q Was it known by you and others, at the time you
16 were working on Bednorz and Müller, to -- that -- that
17 it was necessary to remove the carbon dioxide to help
18 the reaction take place?

19 A Correct. You have to remove the carbon
20 dioxide.

21 Q And was that known to you and others before
22 November 1986?

23 A I don't know for others. It's for me as a
24 materials scientist. That's my background and my
25 knowledge. I understand that you have to do it, but I

1 don't know about what other people think.

2 Q Well, how about other materials scientists?

3 A Probably some people know that. That's quite
4 common you have this background.

5 Q All right.

6 MR. HEWITT: Let's take a short break.

7 THE VIDEOGRAPHER: The time is 11:00 a.m.
8 We're off the record.

9 (Recess from 11:00 to 11:15).

10 THE VIDEOGRAPHER: The time is 11:15 a.m.
11 We're back on the record.

12 Q (By Mr. Hewitt) Mrs. Meng, I first want to ask
13 you about your notebooks and stenography pads and any
14 other writings that you did with respect to this high
15 temperature superconductivity work between learning of
16 the Bednorz and Müller article and the end of March
17 1987, during that period.

18 I've seen a -- a -- I don't know if I've
19 ever seen it, but I know there was a -- you had
20 notebook, correct?

21 A Correct.

22 Q And you understand that that notebook is
23 missing?

24 A Yeah. From page 1 to 200 something.

25 Q Yes. 204, I think. Yeah.

1 A Yeah.

2 Q But that was one of your notebooks, correct?

3 A Yes.

4 Q All right. And --

5 A I do not know they're missing. But I know
6 Charles Cox take it with -- and we never --

7 THE COURT REPORTER: Charles who?

8 A Charles Cox, C-o-x.

9 Q (By Mr. Hewitt) C-o-x.

10 A He's the lawyer in this company. He took that,
11 borrowed from me, but never returned it to me. But I
12 don't know if it's missing or not. I think your law
13 firm have it.

14 Q The answer is we do not have it.

15 A So, I don't know.

16 Q So, it's -- of course, we -- we don't know
17 where it is.

18 A So, I don't know it's missing or not.

19 Q You don't have it?

20 A I don't have it. He have --

21 Q You're --

22 A -- the notes.

23 Q -- saying that Mr. Cox never brought it back?

24 A Yes.

25 Q In addition to that lab notebook, did you also

1 have two stenography -- stenographic pads, looseleaf
2 pads that you wrote notes on?

3 A Yes. I had a small book, just note pads.

4 Q Uh-huh.

5 A For example, if I leave my lab and do some
6 experiment in other lab, I would took it with me and
7 write a little simple note.

8 Q What would you put in the notebook that goes
9 from H 1 to H 204 versus what you would put in the
10 stenography pads? What information?

11 A I'm not clear your question.

12 Q Well, you've got three different books we
13 talked about. Two stenography pads --

14 A Two?

15 Q There are two, yeah.

16 A I don't know. I think I have one maybe.

17 Q All right. Well, let's just talk in terms of
18 one. One stenographer pad --

19 A Yes.

20 Q -- and one notebook, correct?

21 A Lab book.

22 Q Lab book. All right. What did you put in the
23 lab book as compared to what you put in the
24 stenographer's pad?

25 A In the lab book, I record what I'm doing for --

1 from day to day. Mainly, is I put on the material
2 formula and calculation -- how --

3 THE COURT REPORTER: And what?

4 A Calculation -- calculation --

5 Q (By Mr. Hewitt) Calculation.

6 A -- the formula is in there. And, also, a
7 certain time I will summarize the result and put in the
8 table such as up to certain time I put -- for example,
9 sample "A" have transition temperature so and so,
10 resistance so and so. Sam -- sample T -- B was what
11 condition synthesize, what result.

12 Q And -- and where would you put that
13 information?

14 A Summarize all the results. Sometime I put them
15 in the notebook or in the big page of the paper.

16 Q A big page?

17 A One piece of big page.

18 Q Right.

19 A I summarize all the results.

20 Q All right.

21 A Because each day they have measured the
22 resistance and I have the process and parameter. I want
23 to corresponding to the result or parameter affect the
24 Tc on so and so. That's what I put in my notebook
25 mostly.

1 Q All right. What information would you put in
2 the -- in the steno pad?

3 A Very few occasion. It depend. Only when I was
4 not in my lab, I would took it with me. I would record
5 what result and what I see from there.

6 Q And you would ma -- mainly make those notations
7 when you were not in the lab?

8 A Uh-huh.

9 Q And when you were in your -- the lab, you would
10 use the lab notebook?

11 A Correct.

12 Q And the lab notebook was maintained in the lab;
13 is that correct?

14 A In my office.

15 Q In your office. And where was your office with
16 respect to the lab?

17 A Where was my office?

18 Q Yeah. Was it near the lab?

19 A No. No. No. I was in -- I have individual
20 office, which is next to my lab.

21 Q That's my question. So, the lab was just a few
22 feet away?

23 A Yeah. Across my door.

24 Q All right. And you used the steno pad then
25 when you weren't either in your office or in the lab?

1 A I only used it if I leave my lab. For example,
2 I -- sometime I use it -- I use the X-ray machine or SEM
3 in the electrical engineering department because we
4 don't have the facility, so I took it with me.

5 Q I see.

6 MR. BEVERLY: What kind of machine was
7 that?

8 A Electrical engineering department.

9 MR. BEVERLY: But the machine that you
10 used.

11 A SEM, Scanning electro-microscope or EDX.

12 MR. BEVERLY: Scandium electro --

13 Q (By Mr. Hewitt) Scanning.

14 A Scanning --

15 Q S-c-a-n-n-i-n-g.

16 A -- electro-microscope or -- or EDX. It's
17 energy dispersive analysis of X-ray.

18 Q Prior to 1986, when you received the Bednorz
19 and Müller articles, what was your practice regarding
20 taking notes?

21 A Can you say it again?

22 Q Yeah. In other words, the notebooks that we
23 have --

24 A Uh-huh.

25 Q -- that we're currently aware of and have been

1 produced in this case relate to the period between the
2 Bednorz and Müller article and the end of March 1987,
3 that period.

4 A Uh-huh.

5 Q My question relates to what -- how you recorded
6 your notes before that time. Before November -- about
7 November 1986, when you received the Bednorz and Müller
8 article, what was your practice then?

9 A In fact, I also have the kind of book they call
10 lab book. I do have my -- my own lab book.

11 Q You always use lab notebooks?

12 A Mostly.

13 Q Well, when you say you have your own notebook,
14 what do you mean?

15 A That means I have one book no stamp in. That's
16 why it's considered my own notebook. The notebook you
17 have and I have now, the people have stamped page H 1,
18 2, 3. Before that, nobody did that.

19 So everybody in the lab, you have your lab
20 book. So that's called -- that's my own lab book,
21 record what I'm going to do, what condition I have to
22 use, so also I put a lot of reference paper in there.

23 Q Now, I'm asking about before you received the
24 Bednorz and Müller article.

25 A Yes.

1 Q Did you use lab notebooks?

2 A Yes.

3 Q And -- and I don't understand why you're
4 calling them your own lab notebook.

5 A Because nobody stamp -- stamp in there No. 1,
6 No. 2, it doesn't matter so I keep it in my own office.

7 Q All right. Where -- where are your prior lab
8 notebooks today?

9 A I -- I hope I still have -- keep them. I don't
10 know. I don't remember because at that time we don't
11 really actually do a lot of recording.

12 Q Did you take them away from the university when
13 you retired?

14 A Some of them.

15 Q Do you have them home?

16 A Not all of them.

17 Q Do you have them at home?

18 A Yes.

19 Q Which ones did you -- why did you take some
20 home but not all of the lab notebooks?

21 A Recently some of them I -- I consider is useful
22 for the lab so -- and some of the students will continue
23 use. I leave in the lab for them to follow because
24 there's many materials synthesize method. I think
25 there's use for them. There's a lab book for them to

1 use there.

2 Q All right.

3 A And some of the work I think is -- is over time
4 when not any use in the lab -- nobody going to do that
5 kind of work anymore.

6 Q And you took those home?

7 A Yes.

8 Q Now where are the remaining lab notebooks that
9 you left?

10 A I give that to my colleague.

11 Q Who?

12 A Duc Pham.

13 Q Spell that, please.

14 A P-h-a-m D-u-c. He is the engineer. Previously
15 lab technician but later on he worked for me a long
16 time. I leave the book to him and -- which is the
17 recent two years some research.

18 Q Two years ago you said?

19 A I mean, that's some of the results in the
20 recent year. I considered this one maybe useful for
21 them and for the student, for other people.

22 Q All right. And you left those lab notebooks?

23 A Right. To him.

24 Q You left them to him?

25 A Uh-huh.

1 Q Did you physically deliver them to him?

2 A Yes.

3 Q Was he a student at the university?

4 A No, he is -- now he's an engineer.

5 Q And does he have any relationship to the
6 University of Houston?

7 A He's still there.

8 Q He's still an employee?

9 A Right.

10 Q Still in the -- working in the lab?

11 A Right.

12 Q Okay. So you -- so, in essence, you left those
13 books with him in the lab?

14 A Yes.

15 Q And then you have other books at your house?

16 A Yes. I think it's no useful for those -- for
17 the students so I took them.

18 Q And did you also use steno pads before the
19 Bednorz and Müller article or other notebooks?

20 A No, just something like a bounding book,
21 something like that. I always use -- this book like
22 have bounding.

23 Q Spiral notebook or something like that?

24 A Yes. Or something like that.

25 Q And did you take those home, also?

1 A Yes. As I told you, I take some home.

2 Q All right. So, you took some lab notebooks and
3 some spiral notebooks home?

4 A Yes.

5 Q And you left those you thought the university
6 could use at the university with Mr. Pham?

7 A Right. Correct.

8 Q Now, when you and Dr. Hor began talking to each
9 other in 2000 -- well, let -- let me back up. Let's see
10 if we can establish a date.

11 Is -- is it fair to say that it was
12 January 2006 when you and Dr. Hor first made a claim for
13 inventorship to the University of Houston?

14 A You're talking about 2006, right?

15 Q January 2006.

16 A Yes.

17 Q Prior to January of 2006, had you and Dr. Hor
18 ever discussed the inventorship issue?

19 A No. Never.

20 Q Okay. Have you -- prior to January 2006, had
21 you ever discussed the inventorship issue with anyone?

22 A Have I ever discussed what?

23 Q Anything about a claim for inventorship.

24 MR. PERRY: Objection --

25 A No.

1 MR. PERRY: -- form.

2 A No. Never heard about it.

3 Q (By Mr. Hewitt) Prior -- prior to January of
4 2006, you never made a claim or expressed to anyone your
5 belief that you were a co-inventor or inventor; is that
6 true?

7 MR. PERRY: Objection, form.

8 A Say it again.

9 Q (By Mr. Hewitt) Yeah. Prior to January 2006,
10 did you ever express your opinion to anyone that you
11 believed that you were a co-inventor on the patents in
12 issue here?

13 A No, I never talked to anyone.

14 Q Not even your family?

15 A No.

16 Q Not Mr. -- you never talked to Dr. Hor about
17 that?

18 A Dr. Hor? No.

19 Q Did he ever --

20 A I think I shouldn't so I never asked -- never
21 talked to anyone.

22 Q Did Dr. Hor ever speak to you about his claim
23 of inventorship?

24 A No.

25 Q So, the subject never came up?

1 A No.

2 Q At any time prior to January 2006, did you ever
3 ask anyone if you were listed as an inventor or
4 co-inventor on the patents that were filed during this
5 period and that are in contention here?

6 A You are talking before I go to see John Warren?

7 Q Yes.

8 A Before I see him, no. But after I see him.

9 Q I understand.

10 A I never talked to anyone.

11 Q You mean before that? Before you saw John
12 Warren, is it true you never talked -- you never -- let
13 me re-ask that.

14 Before you talked to John Warren, which I
15 understand was January 2006 --

16 A Uh-huh.

17 Q -- had you ever spoken to anyone, including Dr.
18 Hor, about your belief that you were an inventor or his
19 belief that he was an inventor?

20 A I never talked to anyone about anything about
21 the patent.

22 Q But you knew about the patent, didn't you?

23 A Yes, I knew it. Dr. Chu mentioned to me many
24 times our patent.

25 Q You say he used the word "our"?

1 A Always.

2 Q And what would the "our" mean to you?

3 A Of course, I think our is me and Pei Hor.

4 That's what I think. Because in early time we all work
5 together. We are the team.

6 Q "Our" couldn't possibly mean the University of
7 Houston?

8 A No.

9 Q So, are you saying --

10 A UH -- they can sue UH -- why I say our. U of H
11 is big. Our is our team.

12 Q Are you saying that Dr. Hor -- excuse me. Are
13 you saying that Dr. Chu represented to you, then, that
14 you were an inventor?

15 A He never say that, but he always mentioned
16 "our" patent. I consider since 1986 through 1987
17 Dr. Hor and we work together. We consider we are the
18 team. So "our" is our patent.

19 Q I understand.

20 MR. HEWITT: And I move to strike your
21 response as being nonresponsive.

22 Q (By Mr. Hewitt) Let me hand you what I'm
23 marking as Exhibit 18.

24 (Exhibit.18 marked.)

25 Q (By Mr. Hewitt) Exhibit 18 is your curriculum

1 vitae except that we have put it into our system and
2 highlighted in yellow every place where you're listed as
3 an author, in green where Dr. Chu is listed as an
4 author, and in blue where Dr. Hor is listed as an
5 author.

6 MR. BEVERLY: Do you have an extra copy of
7 that? Sorry. I didn't see it.

8 Q (By Mr. Hewitt) You've seen this document
9 before, haven't you?

10 A That's my own vitae, right.

11 Q Yeah. All right. Let's turn to the
12 publications --

13 A Okay.

14 Q -- on page 3. I see publications 1 -- well,
15 well first of all, I see as publication No. 4 an article
16 where you're listed with Dr. Bucher; is that correct?

17 A Bucher.

18 Q Is that correct?

19 A Bucher. Bucher.

20 Q Bucher.

21 A In German.

22 Q All right. Is that correct?

23 A Yes.

24 Q And did you write that paper or did someone
25 else?

1 A No.

2 Q Who wrote it?

3 A I don't remember who write the paper. Maybe
4 the first person who do the measurement.

5 Q That would be Werner?

6 A Yeah.

7 Q Did you read the paper at the time?

8 A At that time?

9 Q Yes.

10 A Maybe after published. I -- I did not
11 review -- review his paper. This paper mainly talk
12 about physics, valence -- valence charge in cerium and
13 arsenic, which is not my field.

14 Q Okay. Now, there's papers --

15 A Huh?

16 Q Now I'm referring you to papers 1, 2 and 3
17 where you are listed as a co-inventor. Did you write
18 any of those three papers?

19 MR. BEVERLY: Objection, form.

20 A Which in China, yes, I write partially. I
21 write some of them. One of my colleagues write it, Li
22 Lin, the one -- the last person, Li Lin, because --

23 Q (By Mr. Hewitt) Under -- under which one? I'm
24 sorry.

25 A I write partially of this paper.

1 Q Which one?

2 A About the system, say -- the sputtering system.

3 Q What -- what number?

4 A Huh?

5 Q What number?

6 A You're talking No. 3?

7 Q No. 3.

8 A You asked me No. 3, right? Correct?

9 Q Actually, I said 1 through 3, but I'm fine to
10 talk about No. 3.

11 A Huh?

12 Q All right. For No. 3 --

13 A Yes, that's what you asked me.

14 Q All right. You wrote part of that paper?

15 A Uh-huh.

16 Q And was that paper published in English or
17 Chinese?

18 A I think Chinese.

19 Q And then for papers 1 and 2, were they also
20 published in Chinese?

21 A Yes.

22 Q And so your writing at that time would have
23 been in Chinese?

24 A Yes.

25 Q The only other paper I found that was written

1 by you without Dr. Chu -- and I could have missed one
2 but -- is over here on page 20, No. 229 --

3 A Number --

4 Q 229. Last page. No. 229. Are you with me?

5 A Yes. The Raman spectrum, right?

6 Q Yes.

7 A Yes.

8 Q Did you write that paper?

9 A No. Because this Raman spectrum is by another
10 professor. I provide a sample for him and I believe
11 this is a single crystal I grew and they used it to
12 make -- measure the Raman spectrum. That's why my name
13 was there. Dr. Chu is not there. It's not group. It's
14 other group.

15 Q Have you, yourself, prepared any papers in
16 English?

17 A Yes. In the last few year I do prepare some
18 paper in English.

19 Q And are they published here?

20 A I think that we -- we did not put them here,
21 yes. This not include in some of them about the film.

22 Q So, there are one or more papers that you wrote
23 in English --

24 A Very few.

25 Q -- in recent years?

1 A Very few I write a paper in English.

2 Q Have you ever done any teaching at the
3 University of Houston?

4 A No.

5 Q Only worked in the lab?

6 A Correct.

7 Q Have you done any teaching anywhere, except in
8 China?

9 A In China. Not here. Not in United States.

10 Q All right. When you came to the United States
11 in -- again in 1984, did you get a driver's license?

12 A I have driver's license since 1980 -- '80, the
13 first visit.

14 Q All right. You passed a driving test?

15 A Yes.

16 Q You read the driver's handbook and was -- were
17 able to pass the test in English?

18 A Yes.

19 Q After you got here -- when you came back, from
20 1984 forward, did you make it a practice to read in
21 English -- to read materials in English such as --

22 A I can read the science paper in China, but my
23 writing is poor.

24 Q Okay. In the United States --

25 A In the United States, I practice my writing, in

1 fact, after Dr. Chu went to Hong Kong. Because before
2 that, Dr. Chu would write other papers for our group,
3 including students paper.

4 And I remember he always told me -- first
5 day I come to the United States, he told me. "Ruling,
6 you have to understand the student is very important for
7 me for them to find a job. The publication is important
8 to put them. I mostly put them in the first order or
9 something like that. It doesn't mean you have no
10 contribution. You have to understand that. So I
11 understand that.

12 So as my remember, most paper is written
13 by Dr. Chu published --

14 Q All right.

15 A -- until he went to Hong Kong. We have start
16 to do our own.

17 Q With respect to the papers of Dr. Chu, did he
18 have a practice, then, of listing others as -- earlier
19 in the papers than himself as authors?

20 A Say it again.

21 Q Yeah. Did Dr. Chu have a practice of listing
22 himself as one of the later co-authors and listing
23 others in the papers before himself?

24 A It depend on situation. Very often he put his
25 last name but sometimes he put in the first name. I

1 don't know the rule. I don't know how he applied it.

2 Q After you came back to the United States in
3 1984, did you read English newspapers -- newspapers
4 written in English?

5 A Yes.

6 Q Did you have children?

7 A I have two children.

8 Q Did they go to the school in the United States?

9 A Yes. They graduate from United States.

10 Q Did they graduate from college here?

11 A University.

12 Q When you -- when they lived at home with you,
13 did you converse in Chinese with them or in English?

14 A Of course, Chinese. Occasional English but
15 most of the time Chinese.

16 Q Did you take any -- after 1984, did you -- for
17 example, did you take a Houston Chronicle or a Houston
18 paper?

19 A Yes, I had ordered it for quite a long time. I
20 have Newsweek. I have Discover and Science Journal, but
21 I don't have to read it all the time. But I do have the
22 publications.

23 Q Were you taking those -- those newspapers and
24 magazines back in 1986, 1987, in that period of time?

25 A I don't think so I have that capability at that

1 time. I don't read that in 1986.

2 Q When did you start taking the -- the English
3 newspapers and magazines?

4 A I didn't recall. Just gradually --
5 occasionally I read different journal magazine. Oh, I
6 like to read English novels.

7 Q I'm sorry?

8 A That's -- novel.

9 Q Novels?

10 A Story, novel. Yes. They are more interesting.

11 Q Okay. When did you start reading English
12 novels -- novels written in English?

13 A Very early. Every time I travel I always bring
14 one of them with me.

15 Q Well, were you reading novels written in
16 English back in 1986?

17 A Yes.

18 Q Okay. So, from 1986 -- at least 1986 forward,
19 you had the ability to read novels written in English --

20 A Yes.

21 Q -- correct? Were you reading mysteries or what
22 kind of books?

23 A Stories. Romance love stories.

24 Q Okay. Fiction? Fiction?

25 A Yes.

1 Q But you were able to read and understand it?

2 A Yeah, I like to read the novel because they're
3 interesting. They attract me continue to read them.
4 Even I may have some vocabulary I don't understand, but
5 I can easily understand the whole thing.

6 Q Prior to today -- at any time prior to today --
7 well, let me -- I think you've already answered this
8 question.

9 But there are a few names in a document
10 that your lawyer produced yesterday called Intervenor
11 Ruling Meng's Initial Disclosures."

12 Have you talked to anyone, other than Pei
13 Hor or your attorneys, about this case?

14 A Only one occasion.

15 Q And who was -- who did you speak to?

16 A It was Professor Pan, P-a-n --

17 Q Okay.

18 A -- after Dr. Jacobson talked to me.

19 Q After who talked to you?

20 A Jacobson. Dr. Jacobson.

21 MR. BEVERLY: Jacobson.

22 MR. HEWITT: Oh, okay.

23 Q (By Mr. Hewitt) And did Dr. Jacobson talk to
24 you about this -- your claim of inventorship?

25 A Yes. Pei and I went to talk to Jacobson.

1 Q And when did you go talk to -- this is Allan J.
2 Jacobson, right?

3 A Yes. Correct.

4 Q When did Dr. Hor and you go to talk to Dr. --
5 to Dr. Jacobson?

6 A It's back to 2006.

7 Q Back in 2006?

8 A Yeah. I can't remember exact date. Maybe you
9 can see that from -- from -- from the data.

10 And after he talked to me, I feel uneasy
11 for the conversation with me. I feel -- so, I want to
12 talk to someone in case they can be my witness. That's
13 why I talked to Professor Pan.

14 Q I'm sorry. Did you feel uneasy after you
15 talked to Dr. Jacobson?

16 A Correct. After he talked to me.

17 Q After he talked to you. What did he talk to
18 you about?

19 A He talked to me -- because Pei and I went to
20 talk to him. We don't want to make this thing a big
21 deal. We want to solve -- quietly solve the problem,
22 correct this mistake.

23 And we say, "Let's go talk to our
24 director first -- center director step by step. We told
25 him all -- the whole story. And later on he called me

1 and talked to me -- only me -- he said, "RuLing" --
2 Dr. Chu -- "I talked to Dr. Chu and Dr. Chu said your
3 situation is different from Pei Hor." Okay? And he
4 didn't say why it's different. Okay? I asked him why.
5 He said, "Dr. Chu was" -- "recognize your contribution
6 and willing to compensate you. And you -- you may talk
7 to Dr. Chu." That's what he told me.

8 I heard about the compensate. I said,
9 "Well, I'm not ask for money. Does that mean they want
10 to pay me something and then settle on this?" I told
11 myself that's not -- not my purpose. I want to have
12 recognition. I want to be --

13 THE COURT REPORTER: Want to what?

14 MR. HEWITT: Recognition.

15 A I want recognition my contribution past 20
16 years. I want it justified. So, I -- that's why I went
17 to talk to Professor Pan. He's a physics professor in
18 our department. I just simply tell him what
19 Dr. Jacobson told me. And I said, "Look, if one day if
20 someone need it, you can be my witness. I have talked
21 to you this conversation." That's it.

22 Q (By Mr. Hewitt) Was Dr. Pan aware of any of the
23 events that took place back in 1986 and 1987?

24 A He was not in Houston.

25 Q All right. Have you talked to Dr. Ignatiev?

1 A No.

2 Q Have you spoken to Victor Diatschenko about
3 this case?

4 A Once.

5 Q When was that?

6 A We walk, exercise. And, obviously, he know
7 Dr. Chu well. He know our group well, so I talked to
8 him once very briefly.

9 Q When was that?

10 A Well, I believe that was after to 2006, right?

11 Q What's that?

12 A After 2006?

13 Q Before 2006?

14 A After 2006.

15 Q After. I'm sorry.

16 A Before that I never talk to anyone.

17 Q All right.

18 A Because after 2006 I was very unhappy at that
19 time.

20 Q Do you know of any persons other than Dr. Hor
21 who have -- and Dr. Chu who have knowledge of the events
22 that took place here between the time of the Bednorz and
23 Müller article and the filing of that last patent
24 application in issue in March 1987? Do you know of
25 anyone else that has personal knowledge of the events

1 that took place during that time?

2 A You mean take place in our group or take
3 place somewhere?

4 Q Anywhere.

5 A I still don't quite understand your question.

6 Q Yeah. Other than -- well, Dr. Chu and you and
7 Pei Hor were involved during this period --

8 A Right.

9 Q -- regarding the development of these high
10 temperature superconductors?

11 A Uh-huh.

12 Q Who else was involved?

13 A You are talking about involved in the research
14 work?

15 Q In -- involved in the research work.

16 A Yes. We have students. I believe we still
17 have one post -- I have -- we had two students in the
18 group at that time.

19 Q Who were they?

20 A Li Gao, Li, G -- G-a-o. Li Gao. And Peter
21 Huang.

22 Q And Peter Huang is deceased, right?

23 A H-u-a-n-g. Peter Huang.

24 Q Is he dead?

25 A Yes. And I still beginning had one called

1 Vasili something. But it's a very short time. I didn't
2 remember his name. He's post-doc.

3 Q Have you ever spoken to Li Gao about any of the
4 events that took place?

5 A No.

6 Q Have you spoken to any of the other students
7 that were there about the events that took place?

8 A There no students anymore. No -- no other
9 student. That's it.

10 Q You haven't talked to anyone else?

11 A No, I never talked to any student.

12 Q Is there anyone, other than the students,
13 Dr. Hor, you, Dr. Chu, that has any knowledge of the
14 events that took place during this period?

15 A No. Except my children.

16 Q Except your children?

17 A I do talk to my children. I want them to
18 understand me, why I do it.

19 Q And did you talk to -- to your children about
20 the developments that took place between the Bednorz and
21 Müller article in the end of March 1987?

22 A No, not in detail because it's very difficult
23 for them to understand the whole long history.

24 Q How old were they at that time?

25 A Oh, they are grown up. They're adult.

1 Q No, how old were they back in 1986, 1987?

2 A You mean how old they are?

3 Q How old were they back in 1986, 1987?

4 A Oh, one of my kids was born in 1962. You count
5 how -- how old. Another one is born in 1964.

6 Q Okay.

7 A So we can know what the -- the age. I didn't
8 remember.

9 Q But you didn't talk to them in any specifics
10 about happened?

11 A It's difficult. They don't understand. I just
12 mentioned to them that something is happening, and
13 that's it.

14 Q Have you talked to Roy Weinstein --

15 A No.

16 Q -- about the case?

17 A No.

18 Q Simon Moss?

19 A No.

20 Q Lou Castellani?

21 A Who?

22 Q Lou Castellani or lini.

23 A Lou Castellani?

24 Q Yeah.

25 A No.

1 Q Okay.

2 A Excuse me. Can I correct one thing?

3 Q Surely.

4 A I have talked to the -- the people in Metox,
5 Metox. M-e --

6 MR. PERRY: Metox.

7 A Metox.

8 Q (By Mr. Hewitt) Oh, okay.

9 A This is a company. The reason I talk -- talk
10 them is 2007 after I retire, this company was working on
11 a superconducting wire, which is my ex -- expertise, so
12 I wanted to be their consultant. But when I go there
13 talk to him, I want to let him know my situation because
14 I don't want -- they don't understand I have some kind
15 of -- the -- the thing with the -- going on with
16 Dr. Chu.

17 Q Uh-huh.

18 A And he told me he have signed a contract with
19 our center, so that's why I talked to him briefly. Not
20 detailed I didn't talk to him. Before he want to hire
21 me as a consultant.

22 MR. HEWITT: I am totally wound up in
23 this, so give me 30 seconds here to get rid of this.

24 MR. BEVERLY: Like a dog on a leash here?

25 MR. HEWITT: Yeah. It's wrapped around --

1 there we go.

2 (Exhibit.19 marked.)

3 Q (By Mr. Hewitt) Mrs. Meng, I'm handing you what
4 I've marked as --

5 MR. HEWITT: I'm sorry about that. I need
6 one more. 19. Thanks.

7 Q (By Mr. Hewitt) I'm handing you what I've
8 marked as Exhibit 19. This is entitled "Affidavit of
9 Ruling Meng" and shows a date of March 6, 2006. Do you
10 recognize Exhibit 19?

11 A Which page?

12 Q Do you recognize the whole exhibit?

13 A Yes.

14 Q Was this affidavit of Ruling Meng prepared by
15 you personally?

16 A Yes.

17 Q Did you consult with anyone in the process?

18 A No. Only the lawyer.

19 Q You did --

20 A Car --

21 Q You did consult with a lawyer?

22 A Well, he said you just call -- I remember -- I
23 understand -- I may have misunderstand English so I
24 asked him, he say, "Drawing, I look at it." That's it.

25 Q Who -- who looked at it?

1 A Mr. Carmady.

2 Q Oh, Mr. Carmady.

3 MR. PERRY: He's not --

4 Q Oh, Mr. Carmady. I understand.

5 MR. PERRY: He's not -- I don't think he's
6 going to ask you about your communications with the
7 lawyer.

8 THE WITNESS: But he asked me who I had to
9 consult.

10 Q (By Mr. Hewitt) That's all I asked is who.

11 A Yes, that's who I consulted with.

12 Q All right. Thank you. Let's begin on the next
13 to the last bullet point on the first page. The
14 statement is made -- this is the paragraph beginning,
15 "In July 1984" -- do you see that paragraph?

16 A Yes.

17 Q And the last sentence says, quote, "I
18 synthesized and characterized various compounds myself
19 independently and supervised students on their material
20 studies," end quote.

21 A Yes.

22 Q What did you mean by supervising students?

23 A Because most of the students is a physics major
24 but Dr. Chu required them to learn something about
25 material. So, many occasionally they have to learn how

1 to prepare the sample before they do the measurement,
2 like how to grow the thin film using the equipment, so I
3 have to tell them how to do it. That's supervise.

4 Q Now, when you -- when you supervised the
5 students, was it your practice to show them how to
6 conduct the experiments and then allow them to work on
7 them without you being present?

8 A It's not only show them how to use the
9 equipment. I have to explain to them the principles of
10 the material, understand the material, the nature of the
11 material and understand steps how to make the material.

12 Q Once you had taught these students how to make
13 the material, did you remain in the lab while they made
14 the materials or did you allow them to do their work by
15 themselves?

16 A Oh, some of them they can do it themselves
17 later on. But I will be just together watch -- watch
18 how they are doing.

19 Q All right. And would you then stay in the lab
20 all the time or would you come in and check the
21 progress? How -- what was your practice of supervising?

22 A It depend on what kind of method. Some of them
23 I feel it is important for me to stay with them. Some
24 of them, they can do their own, but very often I would
25 stay there.

1 Q So, with some of them you stayed there and some
2 of them you did not?

3 A Right. It's very few students can --
4 independent to carry on the whole process for the
5 material synthesise.

6 Q Did -- were any of the students working in this
7 period, from the Bednorz and Müller article up until
8 March?

9 A We have two students.

10 Q Were any of them --

11 A Li Gao, Pete Huang.

12 Q Let me finish my question. Were any of them
13 capable of working independently of you in making the
14 samples?

15 A I really doubt that. I -- I don't think they
16 are ready to independent working with that yet at that
17 time.

18 Q What do you know -- what have you heard or what
19 do you know about any commercial activity with the
20 yttrium process? Have you heard of any licenses or
21 money obtained, anything of that sort?

22 A Are you talking about now or when?

23 Q I'm talking about as of now. What have you
24 heard up to now about the commercial -- commerciality,
25 the opportunity to generate revenue off of the invention

1 that you claim to be an inventor in?

2 A Well, I read the newspaper lately because I see
3 Selva --

4 THE COURT REPORTER: See the what?

5 A Selva.

6 MR. PERRY: Selva, S-e-l-v-a.

7 A His name is very long.

8 Q (By Mr. Hewitt) I'm sorry. What is that?

9 MR. PERRY: Selva, S-e-l-v-a.

10 Q (By Mr. Hewitt) Is that a -- a person's name?

11 A He is faculty in UH --

12 Q Okay.

13 A -- in mechanical engineering department, but he
14 also is the head of applied superconductor material in
15 the superconductor center.

16 I saw the interview paper in the Houston
17 Chronicle, and I was excited to see the progress he have
18 been make to make this YBCO film -- wire. This long
19 wire is a big progress.

20 So -- in fact, that's my dream. I want
21 some day I can see that it can be used.

22 Q (By Mr. Hewitt) That -- and was that article in
23 the Chronicle --

24 A Houston Chronicle.

25 Q -- recently?

1 A Yes. I mean last week or something.

2 Q All right.

3 A Very recently.

4 Q Other than that event, have you heard of any
5 other instances where the high temperature
6 superconductors that you claim to be an inventor on --

7 A Yes, I heard --

8 Q -- have been commercialized?

9 A I look at -- potential I talk about. I see one
10 article was from the people they call Lar Balestier.
11 Professor --

12 THE COURT REPORTER: What?

13 A Lar Balestier -- how to spell his name. Lar
14 Balestier. He is the person -- professor in the high
15 magnetic field, National Lab.

16 THE COURT REPORTER: High field?

17 A High magnetic field national lab. His name is
18 Lar Balestier.

19 Q (By Mr. Hewitt) Okay. Well, you can work on
20 the spelling later.

21 A And in the paper he claim the world record of
22 high field -- magnetic field. This magnetic field was
23 created from the high temperature superconductor YBCO.

24 THE COURT REPORTER: Created from what?

25 A High temperature superconductor YBCO wire make

1 by them.

2 THE COURT REPORTER: Wire?

3 Q (By Mr. Hewitt) Wire.

4 A Wire, w-i-r-e. Used this material to make this
5 high field. That's how I saw it.

6 MR. BEVERLY: High fuel or high field?

7 A Field.

8 MR. BEVERLY: Okay.

9 THE VIDEOGRAPHER: We have five minutes
10 left on this tape.

11 Q (By Mr. Hewitt) Okay. And when did you --
12 when -- when did -- when you read about that?

13 A Very recently.

14 Q Recent?

15 A Yea.

16 MR. PERRY: I've got the spelling.

17 MR. HEWITT: I'm sorry?

18 MR. PERRY: I've got the spelling.

19 MR. HEWITT: Oh, okay. Go ahead.

20 MR. PERRY: Lar, L-a-r. Bal --

21 B-a-l-e-s-t-i-e-r. Lar Balestier.

22 A Lar Balestier.

23 Q (By Mr. Hewitt) All right. Other than those
24 two instances, are you aware of any other
25 commercialization or attempt to commercialize the

1 product?

2 A No.

3 Q What's your fee arrangement with your
4 attorneys? Mr. Perry, what's your fee arrangement with
5 him? Are you paying him?

6 A I think they are doing contingency.

7 Q Contingency. All right. And so they have a
8 contingent interest in the outcome of the case?

9 A Uh-huh.

10 Q So, you're not paying him anything by the hour?

11 A Huh-uh.

12 Q Correct?

13 A Yeah, correct.

14 Q If you'll turn to page 2, please, of
15 Exhibit 19. Is it true that the first substitutions --

16 A Page what -- page 2?

17 Q Page 2, right.

18 A Which paragraph?

19 Q I'm -- I'm looking at the second bullet
20 point --

21 A Okay.

22 Q -- that begins "In late November" --

23 A Okay.

24 Q There's a reference in there to the beginning
25 to substitute strontium for barium in early December?

1 A I'm sorry. I'm not with you. Page 2, second
2 paragraph, after this discussion the 14 -- are you
3 talking about this one or next one?

4 Q It says "in late November."

5 A Oh, okay. I got it.

6 Q All right. About halfway down it refers to
7 beginning the substitute strontium for barium in early
8 December?

9 A Uh-huh.

10 Q Whose idea was it to substitute strontium for
11 barium?

12 A I think Dr. Chu.

13 Q And was there also an idea to substitute
14 calcium for barium?

15 A No. He didn't mention about calcium.

16 Q Chu didn't?

17 A I don't remember.

18 Q Who came up with the idea of substituting
19 calcium?

20 A I didn't recall. I think that's very natural
21 we would substitute calcium.

22 Q So, you don't know who came up with that idea?

23 A I don't remember. I don't recall.

24 Q The next statement is that Dr. Chu asked you to
25 stop the strontium substitution in the lab because he

1 had already asked Dr. Wu to do that --

2 A Yes.

3 Q -- is that correct?

4 A Yes.

5 Q Did Dr. Hor ever request that you stop the
6 strontium work also?

7 A I didn't recall.

8 Q You don't recall that?

9 A I didn't recall. But Dr. Chu told me twice
10 so --

11 Q During this period of December 1986, when work
12 was going on with respect to Bednorz and Müller, what
13 was Dr. Hor's involvement at that time?

14 A He's -- Dr. Chu told me that because of the
15 con -- conflict interest between National -- National
16 Foundation, conflict interest --

17 Q Conflict of interest?

18 A So he need someone to handle the budget and how
19 to take care of the groups. And he point out Dr. Hor as
20 that -- this person.

21 And he also told me, "Ruling, I know you
22 are much senior but you have to cooperate with Dr. Hor
23 and help him to -- running of the experiment in the
24 lab."

25 So, Dr. Hor at that time is -- kind of

1 take care of the lab experiment, running and financial,
2 all kind of thing.

3 Q And what was Dr. Chu's activity in -- in
4 December 1986? Was he also involved?

5 A He was working in the National Foundation --

6 Q Right.

7 A -- but he come back every weekend. And after
8 the lanthanum work was started, he called me every day
9 at noontime, Washington noontime, one hour different
10 than Houston, to find out what's the progress. So I
11 report him the progress.

12 Q And did he continue that level of interest
13 throughout this project through March of 1987?

14 A Yes.

15 Q So, he came home from Washington, D.C. every
16 weekend --

17 A Yes.

18 Q -- or every other weekend?

19 A Every weekend.

20 Q Every weekend?

21 A Uh-huh.

22 Q And he was there, then, bright and early on
23 Saturday morning to -- to be part of the lab work --

24 A Yes.

25 Q -- and -- and to review the results?

1 A Yes.

2 THE VIDEOGRAPHER: Mr. Hewitt, good time
3 to change the tapes?

4 MR. HEWITT: Yes, please. Thanks.

5 THE VIDEOGRAPHER: Okay. This marks the
6 end of tape No. 1. The time is 12:06 p.m. We're off
7 the record.

8 (Recess from 12:06 to 1:11)

9 THE VIDEOGRAPHER: Here marks the
10 beginning of tape 2 in the deposition of Ruling Meng.
11 The time on the monitor is 1:11 p.m. and we're back on
12 the record.

13 Q (By Mr. Hewitt) Mrs. Meng, did there come a
14 time when you and everyone else involved turned your
15 attention to actually replacing barium with calcium?

16 A I do not recall exactly, but this is so
17 obviously based on the pressure effect on the strontium
18 and we see the Tc going up so, naturally, we think about
19 substitute strontium by calcium which is smaller atom
20 size.

21 Q And when you say "we think of strontium," are
22 you suggesting you thought of strontium?

23 A No, no, no, no.

24 Q Okay.

25 A We refer to our group, the team.

1 Q All right. Well, I'm not interested in the
2 team right now. I'm interested in what each of you did
3 individually.

4 MR. BEVERLY: Objection, form.

5 A I have to say we always consider we are the
6 team.

7 Q (By Mr. Hewitt) I understand.

8 A We work together.

9 Q I understand.

10 MR. HEWITT: I move to strike.

11 Q (By Mr. Hewitt) Did Dr. Hor suggest the use of
12 strontium?

13 A I -- I didn't remember.

14 Q You do remember that Dr. Chu suggested it,
15 don't you?

16 A Yes.

17 Q All right. Now, with respect to calcium, you
18 don't remember who suggested it?

19 A I don't.

20 Q Did -- did -- was -- was work done on
21 substituting calcium for barium?

22 A I been very -- kind of confused because I do
23 not see the record or calculation from my notebook but
24 definitely I remember we tried to make the sample.

25 The one possibility is -- that's -- I try

1 to remember -- we find out Bell Lab already did that.
2 The substitution with calcium, transition temperature
3 did not go higher. It dropped to 25. So, for that
4 reason, we stop it or dropped this calcium substitution.

5 Might be -- I don't recall that well. I
6 will ask myself, "Where is the calculation? What -- did
7 I do the calcium? I should but I -- I don't know. I'm
8 not quite remember. Very likely I got the information.

9 (Exhibit.20 marked.)

10 Q (By Mr. Hewitt) Let me hand you what we've
11 marked as Exhibit 20.

12 The first page of Exhibit 20 has a title
13 "Calculation" in the middle of the page. Is that your
14 handwriting?

15 A Yes.

16 Q Okay. And on -- on the first page of H 17, you
17 see the date at the top of January 12?

18 A Yes.

19 Q And if you look down the page to -- I don't
20 know if that's an 11 in the circle or a 12. Do you see
21 where I'm referring to, the second circled number?

22 A Can I?

23 Q Sure.

24 A Yes.

25 Q All right. So you see there on or about

1 January 12, 1987, you did some initial work on obtaining
2 the com -- composition for lanthanum --
3 lanthanum-calcium-copper-oxide --

4 A Uh-huh.

5 Q -- system, correct?

6 A Uh-huh.

7 Q This is all your handwriting here?

8 A Correct.

9 Q And I don't think I see on page H 18 any
10 calcium. But if you'll look to page H 19 and the date
11 of January 14th --

12 A Uh-huh.

13 Q -- once again, you see entries 1 and 2 are
14 lanthanum-calcium?

15 A Uh-huh.

16 Q And then on page H 20 --

17 A Uh-huh.

18 Q -- you see several more entries, numbers 1 and
19 2 --

20 A Uh-huh.

21 Q -- for lanthanum and calcium. And this work
22 was done in -- on January 13th and 14th -- excuse me --
23 from January 12th through January 14th, according to
24 your own notes, correct?

25 A Page 20 is not my handwriting. It's Y. Q.

1 Wang.

2 Q Which part of page 20 is not your handwriting?

3 A The whole page.

4 Q Okay. Does --

5 A And 19 -- page 19, the last part, the lanthanum
6 2, cal -- magnesium car-- carbonate and carbon carbonate
7 also Mr. Wang's handwriting.

8 Q This -- is this -- by Huang, is this Peter
9 Huang?

10 A Y. Q. Wang.

11 Q And that's spelled Y-a-n-g?

12 A Y -- yeah.

13 MR. BEVERLY: W-a-n-g.

14 MR. PERRY: W-a-n-g?

15 A W-a-n-g.

16 MR. HEWITT: Thank you. I got my W and Y
17 mixed up.

18 Q (By Mr. Hewitt) And then on the next page,
19 page 20, whose handwriting is it?

20 A Y. Q. Wang.

21 Q Do -- does this refresh your recollection that
22 some work was done on calcium then in this period?

23 A I think definitely we think about that, but I
24 really do not recall I make another calcium sample.

25 Q Did you --

1 A The calculations have been done, right. But I
2 did not record the sample I make.

3 Q So the --

4 A Possibly I did, probably. So -- so maybe Y. Q.
5 Wang do that or what.

6 Q Is it possible these samples were never made?

7 A I cannot say sure because maybe Y. Q. Wang do
8 that. Oh, I don't know.

9 Q Well, did you --

10 A Because he write all the formula, do the
11 calculation.

12 Q Did you supervise Y. Q. Wang?

13 A In fact, he's my colleague, also. But because
14 he's not in superconductor field so in that time -- it's
15 not say I supervise him. I just asked him to work
16 together and show him how to work because he never do
17 this kind of experiment. He's in different field.

18 Q And by this kind of experiment, what do you
19 mean?

20 A He never do something like superconductor in
21 all his life. He -- I don't know he do solid state
22 reaction or not. I just -- he's not familiar about this
23 work.

24 Q Let's go back now to our Exhibit 19, please.

25 A Uh-huh.

1 Q On the last -- again, on page 2, the last
2 entry, last bullet point that begins, "On
3 December 30th" --

4 A Uh-huh.

5 Q -- a meeting took place between Pei Hor, M. K.
6 Wu, Li Gao and yourself in Pei Hor's office --

7 A Uh-huh.

8 Q -- on January 1st or 2nd, correct?

9 A Uh-huh.

10 Q During that discussion --

11 A Uh-huh.

12 Q -- did Pei Hor actually bring out a periodic
13 table for discussion?

14 A I don't recall that he have the table or not.
15 I do not recall. Because I'm standing. He sit there.
16 Might -- might be but I did not recall exactly.

17 Q All right. Do you recollect if someone at this
18 meeting suggested yttrium or lutetium as substitutions
19 for lanthanum?

20 A I think Pei Hor is the person who suggest to
21 substitute the lanthanum with yttrium --

22 Q All right.

23 A -- in that meeting.

24 Q He suggested yttrium?

25 A Yes.

1 Q And Dr. Hor write any formulas down at that
2 time?

3 A I don't think at that time they had any formula
4 writing down.

5 Q Was there any discussion in the meeting of what
6 formulas should be used?

7 A I don't recall -- I don't recall we discussed
8 about the formula.

9 Q Did Dr. Hor ever give you a piece of paper with
10 some formulas on it?

11 A Not in this meeting.

12 Q Did he write down any formulas during the
13 meeting?

14 A Not in this meeting.

15 Q All right. Did he later write down some
16 formulas and give it to you?

17 A It was in 29 or 30 then Mau Kwen Wu called to
18 report his discovery of high Tc on YBCO. And then -- I
19 do not know anything about the call but I know he called
20 Dr. Chu and then he talked to Pei.

21 And after the discussion, I remember
22 Dr. Chu said, "Pei, why don't you write down the formula
23 which you" -- oh. Pei -- Pei -- maybe asked Pei what
24 Dr. Wu said. And Dr. Wu say something, "Oh, it's what
25 we discussed in Houston."

1 I just listen for them. I did not
2 directly hear that. And then Dr. Chu said, "Why don't
3 you write down the formula which" -- "what you discuss
4 and -- then, yes, Pei, do -- Pei did.

5 Q So, Pei -- your understanding was that Pei Hor
6 wrote down the formula that Dr. Wu gave him?

7 A I don't know if Dr. Wu -- who -- who gave him
8 or not, but anyway, he write down the formula.

9 Q Okay. In other words, you didn't hear the
10 other side of the conversation?

11 A I was not in the telephone.

12 Q But at -- that was the first time that Pei Hor
13 wrote down a formula for yttrium?

14 A Yes.

15 Q During the meeting back in January 1 or 2 with
16 Pei Hor, Li Gao and M. K. Wu, and yourself, did anyone
17 suggest lutetium?

18 A I did.

19 Q You did?

20 A Yes.

21 Q And did you suggest lutetium before or after
22 Pei Hor suggested yttrium?

23 A After Pei Hor.

24 Q I'm sorry?

25 A After Pei Hor.

1 Q After Pei Hor?

2 A Yeah. Also, lutetium was a small atom. But I
3 do not emphasis. I have to do lutetium first because I
4 respect the physics people. I remember Pei was talking
5 about yttrium is not magnetic material --

6 THE COURT REPORTER: Was not what
7 material?

8 A Not magnetic material, yttrium, so he talk
9 about yttrium a small atom size and also --

10 Q (By Mr. Hewitt) Yttrium -- well, yttrium and
11 lutetium are both rare earth elements; is that correct
12 or not?

13 A Uh-huh.

14 Q They are? And they're the only rare earth
15 elements that are non-magnetic, correct?

16 A No, yttrium is not. Some of them is not
17 magnetic too.

18 Q Some others?

19 A Yeah. Some others are not magnetic. Not all
20 are magnetic.

21 Q Prior to this meeting between yourself, M. K.
22 Wu, Li Gao and Pei Hor, Dr. Hu -- Dr. Chu had already
23 telephoned you and made the same suggestion of
24 substitution of yttrium and lutetium and other rare
25 earths for lanthanum, hadn't he?

1 A I do not recall.

2 Q I'm sorry?

3 A I do not recall Dr. Chu had told me the
4 substitution before this meeting.

5 Q You don't recall?

6 A I don't.

7 Q So, is your testimony, then, that Dr. Chu could
8 have told you but you just don't remember?

9 A You're talking about now or just before a
10 meeting?

11 Q I'm asking today.

12 A Yes, today. I do not recall Dr. Chu have been
13 asking me to substitute lanthanum by yttrium or
14 something else before the meeting.

15 Q You don't recall if he did?

16 A I don't. I do not recall him --

17 Q All right.

18 A -- call me.

19 Q And my question is: Are you telling me that
20 you don't remember or are you telling me definitely that
21 Dr. Chu did not call and make those suggestions?

22 A I believe it's definitely. The reason is
23 Dr. Chu's require or his suggestion always a first
24 priority to me. If he did, I should order the yttrium
25 early. Whatever he want me to do it, I always take that

1 as the first priority. I will not delay until after
2 Christmas order yttrium oxide and so and so.

3 THE COURT REPORTER: After Christmas --

4 A The meeting was held the 1st of January.

5 Q (By Mr. Hewitt) Yes.

6 A And I placed the order which was very late
7 because the school was closed, so I could not place my
8 order.

9 Q Well, when did the school close down?

10 A I think Christmas.

11 Q Well, when did -- when did Dr. Chu -- it's my
12 understanding that Dr. Chu contends that he made that
13 suggestion to you in about mid December.

14 A I don't recall, that's, No. 1. No. 2, unlikely
15 because Dr. Chu's request and suggestion always the
16 first priority to me. Whenever he say he want to do
17 this one, I will right away can do it. But I did not
18 place the order for yttrium oxide until --

19 THE COURT REPORTER: What oxide?

20 A Yttrium oxide.

21 MR. HEWITT: Yttrium oxide.

22 A Because we do not have this material I didn't
23 order. If Dr. Chu suggest me early in December, I would
24 order it immediately, but I did not do it.

25 Q (By Mr. Hewitt) Do you know when the lab -- the

1 chemical -- what's it called again?

2 A Yttrium oxide.

3 Q No, I'm sorry. The place where you place the
4 order. Chemical Supply Lab?

5 A It -- purchase department.

6 Q Purchase department?

7 A Yeah. In UH.

8 Q Do you recall over what days that purchasing
9 department was closed over Christmas?

10 A No. It's legally -- what time is
11 Christmastime they close? I don't remember.

12 Q Well, isn't it possible that the lab -- that
13 the purchase -- Chemical Supply Purchasing Department
14 was closed as early as prior to December 25th and
15 through the new year?

16 MR. BEVERLY: Objection, form.

17 Q (By Mr. Hewitt) Isn't it possible?

18 MR. BEVERLY: Objection.

19 A I don't remember. That's a holiday for the
20 school. It was a holiday. They start from Thanksgiving
21 or after Thanksgiving and then ten days. I remember
22 this ten days.

23 Q (By Mr. Hewitt) Isn't it possible you didn't
24 place an order for yttrium immediately because the
25 purchasing department was already closed --

1 A No.

2 Q -- even soon after Dr. Chu made his suggestion
3 to you?

4 MR. BEVERLY: Objection, form.

5 A No.

6 Q (By Mr. Hewitt) Why not?

7 A Because I would have been -- I place order in
8 first thing -- on January 12 but I can order -- if
9 Dr. Chu told me in mid of December, school is not closed
10 yet. The school -- school closed was mostly under --
11 after Thanksgiving before Christmas. So, if they told
12 me -- if Dr. Chu told me in mid December, I would place
13 order right away. I will never delay anything he want
14 to do. I highly respect, okay, what -- his suggestion,
15 what is -- his request.

16 Q Well, Mrs. Meng, aren't you assuming that
17 Dr. Chu demanded that you place the order immediately?

18 A No. He -- he did not tell me to order. He has
19 not been told me to order the material immediately, no.

20 Q Isn't it possible that he suggested the yttrium
21 and the lutetium and did not tell you to order it
22 immediately because of your other work?

23 A That I don't know because it's his decision,
24 but he did not told me.

25 Q So, when was the first time that you heard

1 anyone suggest yttrium as a replacement for lanthanum?

2 A It is in the meeting.

3 Q In that meeting on January 1st or 2nd?

4 A Right.

5 Q And when did you place an order then for
6 yttrium?

7 A After the holiday.

8 Q Well, that's what I'm asking you. What's the
9 holiday, Mrs. Meng? What -- how do you know --

10 A Thanksgiving --

11 Q -- that you did it after the holiday?

12 A I say thanksgiving. What day is Thanksgiving?

13 Q Well, this is -- this is the Christmas holiday,
14 isn't it?

15 A Right. Right. Christmas holiday --

16 Q Yeah.

17 A -- and ten day -- the school closed for ten
18 days.

19 Q What ten-day period?

20 A Late December to January.

21 Q But when in late December?

22 A Huh?

23 Q When in late December?

24 A I cannot recall exact date. You can go check
25 it maybe. For ten days.

1 In fact, we have rare earth element --
2 element before in the lab. We had a lot.

3 Q Had a lot of what?

4 A Element, metal -- rare earth metal in our
5 group.

6 THE COURT REPORTER: Was it metal?

7 Q (By Mr. Hewitt) Rare earth metals?

8 A Not oxides. We do have a lot of rare metals in
9 our lab because we work on that a lot.

10 Q But no oxides?

11 A No. Well, maybe very few. I don't remember,
12 really, rare oxide.

13 Q Well, let me hand you what's been marked as
14 Exhibit 17. Exhibit No. 17 is entitled Standing Account
15 Requisition Form, Chemistry Department. That's the
16 purchasing department you're referring to?

17 A Yes.

18 Q And the date requested was January 12th, 1986.
19 Do you see that?

20 A Yeah.

21 Q And the items requested were cerium oxide,
22 gadolinium oxide, lutetium oxide and yttrium oxide,
23 correct?

24 A Yes.

25 Q Did you place this order?

1 A The student, Daniel, I asked him to place the
2 order.

3 THE COURT REPORTER: What was that?

4 A Daniel. D-a-n-i-e-l.

5 Q (By Mr. Hewitt) That's Daniel Campbell?

6 A Daniel Campbell. He's undergrad student --

7 Q Right.

8 A -- in our lab.

9 Q And your testimony is that the idea of yttrium
10 oxide came from Dr. Hor?

11 A Yes.

12 Q And the idea of lutetium oxide came from you?

13 A Yes.

14 Q And -- and where did the idea for cerium oxide
15 and gadolinium oxide come from?

16 A Well, from my opinion, I always prepare and
17 collect a lot of material in steps only single element
18 for the potential use, so it's not surprising.

19 You can see I can order a lot of different
20 oxides, not necessary every -- who order me to do that.
21 I have -- independent make a decision.

22 Q You had the idea independently for these two?

23 A Yeah. Order the -- the oxide for the potential
24 use in the future. Nobody asked me to order what or
25 what. I'm the person who handle all the ordering. So

1 must be my decision. But doesn't mean I want to expect
2 high Tc element. I just say we may use that in the
3 future.

4 Q And Dr. Chu had not prior to that date
5 suggested to you anything about other rare earths?

6 A Not prior to that day.

7 Q So, your belief is that Dr. Chu would not have
8 suggested yttrium and lutetium prior to this
9 January 1st -- 1 or 2 meeting in 1987 but you and
10 Dr. Hor would?

11 MR. BEVERLY: Objection, form.

12 A Your question is -- I did not suggest Dr. Chu
13 did not have this idea. I have to say I don't know. I
14 do not deny Dr. Chu have this idea.

15 Do you understand me? But he never talked
16 me before that. Are you clear? Your question is a
17 compound question. You say -- I do not deny Dr. Chu may
18 think about that. I don't know. How can I know it? I
19 don't want to deny it but --

20 Q (By Mr. Hewitt) But you are denying he called
21 you and talked about it?

22 A Yes, correct.

23 Q And you're saying that what prompted this order
24 on January 12 was the suggestion you made for lutetium,
25 the suggestion that Dr. Hor made for yttrium and you

1 just tossed in cerium and gadolinium?

2 A Yes. I believe I later ordered some more by
3 Andy.

4 Q Now, this meeting was on January -- that we
5 referred to here with M. K. Wu and Pei Hor was on
6 January 1st or 2nd. Why did you wait until January 12th
7 to order it?

8 A Well, I told you that that was a very
9 complicated situation at that time. Number 1, it was a
10 holiday. Number 2, I'm working with lanthanum compound.
11 I under a lot of pressure to send out the lanthanum
12 compound to different labs to do the testing. Because
13 due to I do not quite -- well understand the -- the
14 nature of this compound so many samples sent out powdery
15 during shipping, so they call me all the time and so --
16 oh, your sample is powder. We cannot do the
17 measurements.

18 So I was under a lot of pressure. I hire
19 a couple of graduate students to help me as a hand to
20 ground material to make a sample.

21 So, I was very, very busy for optimize the
22 condition and obtain the high quality of lanthanum
23 sample -- optimize the preparation parameter to get high
24 quality lanthanum. I was very busy. That's number 1.

25 Number 2, even though I think yttrium may

1 be have high Tc, but somehow at that time I really do
2 not feel the urgency to immediately jump in yet.

3 Number 3, I remember we talked to Mau Kwen
4 Wu.

5 THE COURT REPORTER: Talked to who?

6 A Mau -- Dr. Wu, W-u, after the meeting. I
7 particularly talked to Mau Kwen, go to Alabama, NASA,
8 because they -- they have yttrium -- they might have --
9 NASA has yttrium, so we can go ahead and do it. And --
10 because I never think Mau Kwen Wu is another team.
11 Dr. Chu always tell me "Mau Kwen is our team." So,
12 that's how Dr. Chu asked me to stop the strontium.

13 He said, "Ruling, Mau Kwen can never
14 compete with you, so you don't have to do strontium.
15 Let Mau Kwen do that." So, for the same philosophy, Mau
16 Kwen, if they do it first, that would be great because
17 we talk together in discussion, so I'm not in the urgent
18 immediately start the material. I think it was a
19 complicated situation at that time.

20 Q Okay. So, after the suggestions were made for
21 lutetium and yttrium by -- supposedly by you and
22 Dr. Hor, you had other things to do so you waited to
23 order those?

24 A Yes, right.

25 Q But you -- you're saying that if Dr. Chu had

1 suggested it, you would have done it immediately; is
2 that correct?

3 A Well, actually, if Dr. Chu wanted to do that, I
4 would do it quickly. I would feel the urgency more.
5 That's usually the way I handled the -- the priority
6 subject and so on.

7 Q And Dr. Chu was talking to you during this
8 period every day, wasn't he?

9 A Every day what we are talking -- before the
10 meeting, what we are talking is S temperature because he
11 told me -- transition temperature with Lao exactly. I
12 remember he told me, "Ruling, the people give me a
13 nickname as thermometer."

14 Every day when he walk in the office, the
15 people say, "Paul, what's the temperature today?" You
16 know why? Because I apply the pressure to the
17 lanthanum-strontium-copper-oxide, which increases
18 pressure. The temperature increase -- increasing is the
19 function of pressure. From 35 degree increase up to 45
20 or 47 degrees which each day they can only apply I don't
21 know how much pressure increasing.

22 Therefore, mostly at that time he call me
23 at noontime, asked "What temperature? What
24 temperature?" Of course, Paul ask something -- a little
25 bit something else.

1 Also, he is the person to respond to
2 connect the people outside our lab, you know, all the
3 relation with the people, science lab -- in our lab,
4 we're going to send them sample. This kind of thing, he
5 handled all this kind of thing.

6 Q And he knew every day what you were doing,
7 didn't he?

8 A Yes.

9 Q He knew what you were doing?

10 A Yes.

11 Q And isn't it true, then, that he could have
12 also told you about yttrium and lutetium and not
13 required you to immediately order it because you were so
14 busy, as you just said?

15 A I don't recall that. I don't recall that.
16 Even after meeting, Pei was -- sug -- suggest yttrium.

17 THE COURT REPORTER: Pei what?

18 A Pei was suggesting yttrium substitution. I
19 place the order if Dr. Chu mention that I should have
20 place the order earlier.

21 Q (By Mr. Hewitt) Dr. Chu conveyed to you his
22 suggestion for strontium, correct?

23 A I beg your pardon?

24 Q Dr. Chu told you about his suggestion for use
25 of strontium, correct?

1 A Yes.

2 Q Don't you think it's likely that he would have
3 told you the substitutions he wanted for lanthanum?

4 MR. BEVERLY: Objection, form.

5 A I cannot answer this question because that's
6 Dr. Chu's decision.

7 Q (By Mr. Hewitt) Let me hand you Exhibit 6.
8 Exhibit 6 is dated January 14. And on that day, you
9 received the cerium, gadolinium and lutetium and
10 yttrium, correct?

11 A Yes.

12 Q And when did you actually start work with any
13 of these compounds?

14 A Well, I do the calculation in January, 17th.
15 Okay --

16 Q Yes.

17 A -- and tried to start working on that. But I
18 remember -- actually, I did not really start working a
19 lot. Maybe just able to do the calculation or maybe I
20 asked somebody do it. Myself did not really start a lot
21 this work at that time.

22 Q Is that because you were so busy?

23 A That's correct. One is I so busy. Secondly, I
24 really -- things -- Mau Kwen maybe have that. I
25 remember -- I didn't remember clear. He may have called

1 and said he found yttrium oxide. But I -- I'm not sure.
2 I remember something like that. So, I feel, okay,
3 he's -- I asked him what -- what the difference he make
4 that.

5 I do the strontium. Dr. Chu stopped me
6 because Mau Kwen is our team. So if yttrium can make
7 that -- the same because we are a team, so I do not feel
8 it urgent to make the yttrium immediately. But I did do
9 the calculation and prepared to do it.

10 Q Now, here is Exhibit 7. Exhibit 7 is also a
11 charge ticket, Department of Chemistry. It appears the
12 date is January 17th, the best I can read it.

13 A Yeah, 17.

14 Q All right. This order is, again, to Dr. Chu's
15 budget and it's for neodymium -- neodymium?

16 A Neodymium.

17 Q What was that?

18 A Neodymium.

19 Q Neodymium?

20 A Uh-huh.

21 Q Okay. Europium, ytterbium. I don't know the
22 next one. What is that?

23 A I cannot see without my glasses.

24 Q E-r-l-i-u-m?

25 A Erbium.

1 Q Erbium. Ytterbium.

2 A Ytterbium.

3 Q Okay. Now, what prompted you to order these?

4 A Huh?

5 Q What made you order these compounds?

6 A Well, as I told you before, I'm in charge of
7 the material preparation investigated in this group.
8 So, that means also I also in charge to have the certain
9 supplies so we can research. I don't -- I don't need
10 anyone ask me to order this thing. I always make the
11 decision based on Dr. Chu's direction.

12 Q So, neither Dr. Chu nor Pei Hor had suggested
13 substitutions using any of the rare earth compounds
14 shown on Exhibit 7?

15 A Well, after the yttrium was working well, and I
16 talked to Pei immediately because he's in the lab --
17 Dr. Chu not there -- I say, "Well, yttrium went well.
18 Which element we should try first?" I asked for his
19 opinion first. He said, "Let's try gadolinium." So I
20 said why --

21 THE COURT REPORTER: Try what?

22 A Gadolinium. Gadolinium. Gd. I say, "Why you
23 want to try that? He said, "Well, because gadolinium
24 have magnetic moment -- magnetic element. If gadolinium
25 work, probably the other one will work. So that's the

1 second time he suggest to do that.

2 Q (By Mr. Hewitt) You said the second time?

3 A Yeah, yttrium he say the first time.

4 Q Oh, yttrium. Now gadolinium?

5 A Yeah.

6 Q And your testimony is that Dr. Chu never
7 suggested any of these rare earths on Exhibit 7?

8 A Not as I -- I recall. Because after
9 gadolinium, we automatically -- we would continue to
10 order rare earth. Because as I told you before, I'm the
11 colleague with Dr. Chu. Being in material science, I
12 independently use my knowledge and my tech --
13 technique -- my -- basically my judgment which one I
14 should continue to work.

15 So after the two elements have been
16 worked, then naturally I would go ahead the whole period
17 on rare earth compounds.

18 Q And you --

19 A I don't need Dr. Chu tell me to do 123.

20 Q And you would begin work on these in the lab,
21 use the resources in the lab --

22 A Yes.

23 Q -- without Dr. Chu knowing about it?

24 A Do not need to.

25 Q Is that your testimony?

1 A Yes.

2 Q Without Dr. Chu knowing about it?

3 A No. We tell Dr. Chu. He come back. We tell
4 him.

5 Q I see. You told him?

6 A Yes, sir, we do.

7 Q You told him what you were going to do and what
8 you already did?

9 A I think we tell him the result every day, and
10 we also -- we tell him to -- you know, to -- what we are
11 going to do --

12 Q Okay.

13 A -- because we just communicate with each other.

14 Q So, do you have a specific recollection that it
15 was your idea to use all the rare earths to -- to
16 experiment with the rare earths?

17 A Yes. That's --

18 Q It was your --

19 A That's what I told you.

20 Q That was your idea?

21 A I share Dr. Chu's wis -- Chu's vision. I know
22 what he looking for.

23 Q When -- when --

24 A I share his will, what he looking for. He want
25 to look for high temperature superconductor, the same as

1 me. So when we got the yttrium working, we got the
2 gadolinium working --

3 THE COURT REPORTER: While we what?

4 A I share his will --

5 MR. HEWITT: Will. She shares his will.

6 MR. PERRY: Vision was the other word.

7 A Vision.

8 THE COURT REPORTER: Okay.

9 Q (By Mr. Hewitt) So, let me ask --

10 A So, that's a very natural -- as an independent
11 materials scientist --

12 Q Let me ask you another --

13 A -- is his colleague in the group.

14 Q Let me ask you another question. And I move to
15 strike your answer again.

16 When did Pei Hor suggest gadolinium?

17 A Oh, after the yttrium is okay, working. What
18 exact day --

19 Q Well, that would be after January 30th, right?

20 A Yeah. I don't -- I have to look at what day
21 exactly. Up to January 30th, of course.

22 Q January 30th -- after January 30th?

23 A Yes, I guess so. After Mau Kwen come, I
24 optimize the condition for yttrium. And after the
25 second gadolinium, I just automatically will call the

1 order people. I don't have to --

2 THE COURT REPORTER: You would
3 automatically what?

4 A Order all the element and I believe there was
5 four more. Nobody have to be ordered and ask me to do
6 that.

7 Q (By Mr. Hewitt) Over the period of December and
8 January -- December 1986 and January 1987, do you have
9 any recollection of any specific discovery you made that
10 optimized the composition and preparation conditions?

11 A Conversation with who?

12 Q Did you --

13 A Communication with who?

14 Q Did you make -- I didn't ask about
15 communications.

16 Did you -- do you recall today any
17 specific improvement or discovery you made as part of
18 your optimization of the composition and preparation
19 condition?

20 A Before what time?

21 Q In December and January -- 1986 and
22 January 1987.

23 A Yes. In the very beginning we follow the
24 Bednorz formula as 415 or 113 structure. Later on,
25 Dr. Kitazawa from Japan, they identify this compound

1 lanthanum-barium-copper-oxide as a 214 structure. And I
2 believe he talked to Dr. Chu. And then we find out this
3 compound should be 214 instead of 1 -- 415 and 113. So
4 after that, we apply the 214 formula to --

5 Q Did you -- did you do that independently of
6 Dr. Chu also or did he tell you to do that?

7 A He told me the -- the structure should be 214.

8 Q So, he told you to take -- make the 214
9 compound?

10 A He said Dr. Kitazawa told him identify the
11 structure, and I independently use my knowledge and
12 technology to do the 214 and vary the composition --

13 Q Okay.

14 A -- for 214.

15 Q Okay. Let me understand this. Dr. Chu tells
16 you that Dr. Kitazawa said --

17 A Identify the phase.

18 Q Identify the phase.

19 A Yeah.

20 Q He told you -- Dr. Chu told you the phase?

21 A He told me, yeah, Dr. Kitazawa --

22 Q And then you independently of Dr. Chu started
23 making 214?

24 A Correct.

25 Q Without Dr. Chu's knowledge?

1 A What -- Dr. Chu is a physicist. I'm a
2 materials scientist. We cooperate together --

3 Q Isn't it true --

4 A What do you mean his knowledge?

5 Q Isn't it true --

6 MR. PERRY: Hold on.

7 Q (By Mr. Hewitt) Isn't it true --

8 MR. PERRY: No, no, no, no. She gets to
9 finish her answer before you interrupt her.

10 MR. HEWITT: Well, she's just arguing with
11 me, counsel.

12 MR. PERRY: You're just arguing with her.

13 MR. HEWITT: Finish your answer. Finish
14 your answer.

15 A What do you want to say?

16 MR. HEWITT: Just object to form. That's
17 the limit of your objections.

18 Q (By Mr. Hewitt) Finish your answer.

19 MR. PERRY: I'm not going to sit here
20 and say --

21 A Okay.

22 MR. PERRY: -- "objection, form" when you
23 interrupt her.

24 A Repeat your question again. What do you want
25 to ask me?

1 Q (By Mr. Hewitt) Did Dr. Chu instruct you to
2 begin making 214 lanthanum-barium-copper-oxide,
3 lanthanum-strontium-copper-oxide samples after he
4 learned from Kitazawa about 214?

5 A After he learned from Kitazawa and he told me,
6 "Ruling, you should follow the 214 formula to prepare
7 the sample."

8 Q All right. On page 3, again, at the second
9 bullet point, beginning with, "From December 1986 to
10 January 1987" --

11 MR. BEVERLY: What exhibit are we on?

12 MR. HEWITT: This is still Exhibit 19.
13 We're on the third page. This is the second bullet
14 point where it says, "From December 1986 to January of
15 1987" --

16 MR. BEVERLY: Okay. Thank you.

17 Q (By Mr. Hewitt) It says, quote, "I continued
18 studying the lanthanum-barium-copper-oxide compounds to
19 optimize the composition and preparation condition," end
20 quote.

21 Do you recall today any specific steps
22 that you took to optimize the composition and
23 preparation?

24 A Okay. Which -- in -- including the temperature
25 and the composition. Because --

1 THE VIDEOGRAPHER: Excuse me. Somebody's
2 BlackBerry is just going off and it's -- I can't even
3 hear what the witness is saying.

4 MR. BEVERLY: Are you sure it's a
5 BlackBerry?

6 THE VIDEOGRAPHER: Well, I can't say
7 BlackBerry. I -- I should say electronic device.

8 MR. PERRY: Is it interfering?

9 THE VIDEOGRAPHER: Now it stopped.

10 MR. PERRY: I think -- I -- I put my phone
11 too close. My apologies. I apologize.

12 THE VIDEOGRAPHER: Okay. Now I can hear
13 it.

14 A Well, to optimize condition, you can see in my
15 summary in the big table which indicates I have been
16 trying to apply different synthesise temperature.

17 THE COURT REPORTER: Apply different what?

18 A Different temperature and the length of
19 synthesise time and also -- I believe also including the
20 atmosphere. I'm not quite sure. But anyway, basically
21 it's the temperature, time and atmosphere. That's why I
22 try to optimize that. Also, the doping with barium --

23 THE COURT REPORTER: Also the what?

24 THE WITNESS: Doping, d-o-p-i-n-g.

25 A -- doping with barium, lanthanum-copper-oxide

1 is paring compound -- we call it -- only have doping or
2 substitute partially lanthanum with barium or strontium,
3 it turn into superconductor.

4 So, therefore, the amount of substitute of
5 lanthanum by barium and strontium is crucial, critical.
6 So, that is an important condition you have to optimize.
7 It depend the amount of the barium or strontium you
8 substitute, the lanthanum. The temperature can be --
9 vary from 29 to 35. You want to be optimize 35 degree
10 Kelvin. You want to have sharp drop transition --

11 THE COURT REPORTER: What transition?

12 A Sharp, very sharp, straight forward.

13 Q (By Mr. Hewitt) Sharp.

14 A Sharp transition. So you have to be --
15 optimize the composition. That's the work -- the work
16 we were doing at that time.

17 Q So, as I understand your testimony, the word
18 "optimize" means to you that you would vary the
19 composition in the samples?

20 A Uh-huh.

21 Q You would then have the sample made?

22 A I just prepare parameters.

23 Q You would then adjust parameters such as time
24 and temperature?

25 A Atmosphere.

1 Q And atmosphere?

2 A The way to quench the sample in the air or just
3 keep it in the air, so and so on.

4 Q And then you would know when you made an
5 improvement on optimization by the superconducting
6 temperature obtained?

7 A Correct. The most important is the amount of
8 the doping substitute of lanthanum. Too high --

9 Q So you tried various amounts of doping,
10 correct?

11 A Correct. Too high did not superconducting; too
12 low, would not.

13 Q And it was just a matter of making the samples
14 and getting them tested, correct?

15 A It's the investigating. It's not mixing the
16 sample. So simple. This is research that I investigate
17 and defining the preparation to prepare parameter to
18 optimal condition to make the good quality sample. And
19 as well as I have defining the structure of the --
20 crystal structure of the sample. That is the research.

21 (Exhibit.21 marked.)

22 Q (By Mr. Hewitt) Let me hand you what I've
23 marked as Exhibit 21. First of all, turning to
24 page 50 -- this document is pages H 50 through H 60 out
25 of your notebook, Mrs. Meng.

1 A Yes.

2 Q If you could look at the first page of
3 Exhibit 21, please, which is H 50.

4 A Uh-huh.

5 Q Are these formulas that were provided -- first
6 of all, is the handwriting on page H 50 your own?

7 A I -- I think 15 is in my handwriting. Only 26
8 is not. 26, I believe that's by Y. Q. Wang. It don't
9 look like my handwriting.

10 Q With respect to the formula shown, the
11 remainder of the formulas with the varying
12 compositions --

13 A Uh-huh.

14 Q -- were those formulas given to you by Pei Hor,
15 or Dr. Chu?

16 A Possibly by Pei Hor. Not Dr. Chu.

17 Q What did Pei Hor give you?

18 A Basically, I think he write down yttrium and
19 scandium, something like that. But the lutetium was --
20 I make it myself. I told you I like to do lutetium, and
21 I believe lutetium might be superconducting. But
22 scandium and yttrium is for sure by Pei.

23 Q Now, let's -- let's talk first about the
24 yttrium samples. That's Items 1, 2, 3 and 4, correct?

25 A Correct.

1 Q Did Pei Hor give you all four of those
2 formulas?

3 A I cannot recall very clear, but I know he have
4 the list to write that. It's very likely is he's
5 writing down.

6 Q Is that the list he was writing down from his
7 phone call with Mr. Wu?

8 MR. BEVERLY: Objection, form.

9 A It's not -- I don't know if it's exactly or
10 not. I don't know it's exactly from Dr. Wu's call --
11 phone call or not because I'm not in the phone. I don't
12 know what they are talking about.

13 Q (By Mr. Hewitt) All right. But you know that
14 Dr. Hor wrote down something after the phone call?

15 A Yes. Dr. Chu asked him to do so.

16 Q And did -- is that what then you received from
17 Dr. Hor?

18 A Yes. On a piece of paper.

19 Q And did that piece of paper contain the
20 formulas of 1 through 4 shown here on H 50 of
21 Exhibit 21?

22 A Yes.

23 Q All four of them?

24 A Huh?

25 Q All four of them?

1 A Yttrium and scandium.

2 Q No, that's not my question. They're numbered
3 1, 2, 3 and 4. Did Dr. Hor provide you numbers 1, 2, 3
4 and 4?

5 A I cannot recall exactly. I think very likely
6 because he give me a paper.

7 Q Now, within each of these groups, the yttrium
8 group, the lutetium group, there's a lutetium --

9 A Scandium.

10 Q -- lead group and there's a scandium group.
11 The variations of the components are two-tenths, right?

12 A Uh-huh.

13 Q For example, for yttrium in the formulas 1, 2,
14 3 and 4, yttrium is just adjusted, the amount of it,
15 0.8, 0.6, 0.4, 0.2, correct?

16 A Yes. Yes.

17 Q And at the same time, the barium is adjusted in
18 the opposite direction --

19 A Uh-huh.

20 Q -- 0.2, 0.4, 0.6 and 0.8?

21 A Uh-huh.

22 Q Okay. What about that variation in formula
23 there of two points requires investigation by you,
24 Mrs. Meng? What's investigative about it?

25 MR. BEVERLY: Can you repeat that

1 question?

2 A I don't understand the question.

3 Q (By Mr. Hewitt) Yeah. What -- what about the
4 0.2 differential between formulas 1 through 4 do you
5 consider to be investigative?

6 A Yes. There's many things I have investigated.
7 I had to find optimum composition. Okay? I don't know
8 which ratio would produce the most high quality
9 superconductor. Okay? And, also, in that time when the
10 composition vary, they are not pure phase. You
11 understand me?

12 The compound -- compound, they require
13 certain ratio of the material. When your materials are
14 out of the range, they only possibly react to form the
15 compound. The remaining material become second phase,
16 so, therefore, you have to investigate it, these
17 compounds, can they form or not? Are they single phase
18 or not?

19 Secondly, you have to see -- this I have
20 mentioned before -- substitute some barium to lanthanum
21 in the -- in the old 214. Very critical for their
22 physical property. If they're superconducting or not,
23 you don't know. If you substitute barium too high, it
24 will be not superconducting. And when you substitute
25 too little, it's not -- so barium there you need to

1 investigate. And, also, the composition is different.
2 It can require different processing parameter which is
3 in temperature --

4 THE COURT REPORTER: Which is what
5 temperature?

6 A Synthesize temperature, which is different
7 composition that would affect -- no, let me put it in
8 this way. The preparing parameter, such as temperature,
9 time, atmosphere which very much depend on the
10 composition of your sample, they are all the things to
11 investigate. You have to analyze the research. And
12 after that, you have to determine what kind of material
13 you have. Are they single phase? Do they remain single
14 phase? How to improve that. There's a lot of analyze,
15 thing you have to do. That's the research.

16 Q And do you -- is it your testimony that Dr. Chu
17 would not have a full understanding of this?

18 A I did not never testify Dr. Chu do not
19 understand this thing.

20 Q He does understand it, doesn't he?

21 A Did I say that? I did not say that.

22 Q No, but you're suggesting only you have that
23 knowledge, aren't you?

24 MR. BEVERLY: Objection, form.

25 A I did not say only I have the suggestion --

1 Q (By Mr. Hewitt) All right.

2 A -- I -- I have the knowledge, no, I did not say
3 that.

4 Q (By Mr. Hewitt) All right. Then let's go
5 through that.

6 A But I say that Dr. Chu is a physicist.
7 Compared with many physics professor -- I know it -- he
8 have much more material knowledge than many professors.
9 The reason is that he can pick me up from the institute
10 of Physics -- I'm materials scientist -- to come to join
11 his group. That indicate his vision. He understands
12 how important the material science is to work together
13 with physics together. So from this point of view, I
14 think he have more knowledge about material science. He
15 very much understanding the importance of the
16 cooperation.

17 Let me tell you a very simple example. If
18 you go to hospital, there's a patient come here. There
19 people they call -- we have the medical team. What do
20 you mean team? Because this the patient might have
21 problem for the heart, might have problem with the lung,
22 might have problem with other thing, so you need a
23 different specialty come here. Cardiology, that means
24 some other -- other people come here. Surgery. So,
25 you -- I know this patient, what the problem is, and

1 then you decide how to treat this patient. All the
2 specialties come to here. They have their own
3 specialty. Doesn't mean the other doctor doesn't
4 understand cardiology. You cannot say that. But he has
5 less knowledge than cardiologist. Are you good for --
6 it doesn't mean other doctor know how to surgery, open
7 your heart, but you cannot say the other doctor doesn't
8 understand surgery at all. I would not say that.

9 So, I never say Dr. Chu do not have the
10 knowledge. I never say that. Compared with other
11 physicists, I know that he's really very important. He
12 realize that's important. That's what -- the team.

13 Even in the hospital you need a team to
14 finish -- accomplish your task. Do you understand what
15 I mean? So in the research, you also need a team but
16 equally in their own specialty.

17 Q All right.

18 A That's what I say.

19 Q You're far beyond answering my question, Mrs.
20 Meng. You're taking my time. I move to strike your
21 answer.

22 A I'm sorry. I try to under -- answer your
23 question.

24 Q (By Mr. Hewitt) Let's -- let's try to stick to
25 the facts.

1 With respect to these variations of 0.8,
2 0.6, 0.4 and 0.2 that are shown here on H 50, can you
3 tell me what's so unique about that?

4 MR. BEVERLY: Objection, form.

5 A What's the question? What's the question? I
6 don't understand.

7 Q (By Mr. Hewitt) Looking at H 50 --

8 A Okay.

9 Q -- on Exhibit 21 --

10 A Okay.

11 Q -- the variation on formulas 1, 2 and 3 and 4
12 of 0.2, between each one on the yttrium and the barium,
13 what is unique about that?

14 A As I say, we don't know which one is exactly in
15 the 214 structure as a compound. Compound, that means
16 that in the crystal structure, each atom occupy
17 different seat. It depend on size. For example,
18 yttrium in a certain position, valence is very big. You
19 cannot substitute a lot of barium to yttrium, see. The
20 structure was not stable. You only have the proper
21 ratio so you can keep the structure. That in a sense
22 can you form the compound? And this compound purer
23 phase or not, do they have the property --

24 THE COURT REPORTER: Compound what?

25 MR. HEWITT: Purer phase.

1 A Purer phase or not? Do they have remain second
2 phase? Does this compound have the property you want or
3 not? That is very unique.

4 Q (By Mr. Hewitt) And the first measure that you
5 determine is the temperature of its superconducting
6 transition?

7 A I'm going to the superconducting transition
8 measurement as well as X-ray analyze --

9 THE COURT REPORTER: As well as what?

10 A X-ray -- X-ray analyze to identify the phase to
11 see what do they form. Or sometime I go to SEM to look
12 at the morphology of how many crystals do they have
13 inside so you can determine -- defining is this pure
14 phase or single phase? Different phase have different
15 morphology and color.

16 Q And with respect to the issue of the phases --

17 A Uh-huh --

18 Q -- isn't it true that Dr. Chu had a great
19 understanding of the importance of phases in these
20 superconducting compounds?

21 A I don't understand the question. Please, say
22 it again.

23 Q Isn't it true that Dr. Chu had a great
24 understanding of the importance of determining the
25 phases --

1 A Certainly.

2 Q -- in the superconducting compounds?

3 A Certainly, Dr. Chu understand the --

4 Q All right.

5 A -- importance.

6 Q Let me turn you to the next page of Exhibit 21.

7 This is page H 51. Still dated January 29 and 30th.

8 First of all, let's talk about the

9 handwriting. Is anything on this page the -- the

10 handwriting of a person other than you?

11 A Yes. The LY-1 is by Y. Q. Wang.

12 Q That's below the line?

13 A Uh-huh. Under the line.

14 Q And above that is your handwriting?

15 A Yes.

16 Q The sample under the line on the left side it

17 says, with a circle around it, "LYB-1." Do you know

18 what that means?

19 A Which one?

20 Q Under the line on page H 51.

21 A Yes.

22 Q Left-hand side there's a circle and within the

23 circle it says LYB-1?

24 A Oh, that's just the label to distinguish sample

25 from sample. "L" is sometime lanthanum. "Y" may be

1 yttrium. "1" -- dash "1," that's the first sample.

2 Q With respect to under the line in looking at
3 the bracket for the first compound --

4 A Uh-huh.

5 Q -- the reference is to YB rather than Y. Do
6 you see that?

7 A I was -- very strange. How can that Y be? I
8 don't understand. Because the calculation is the use of
9 yttrium, Y, not ytterbium. Look at under second line.
10 Why do they have this B, I -- I don't know.

11 Q You don't have any understanding of --

12 A No.

13 Q -- why this appears as YB?

14 A Yeah, I think that B is kind of very strange.

15 Q Was any work being done in this period,
16 January 29 to 30th, on ytterbium?

17 A I don't think so.

18 Q Then on the next page, H 52 --

19 A Yes.

20 Q -- is all this in Mr. --

21 A Y. Q. Wang.

22 Q -- Wang's handwriting?

23 A Yes.

24 Q And, again, you see references to YB?

25 A Again, this is strange.

1 Q You don't have any explanation?

2 A No. Because yttrium is the calculation. But
3 yttrium oxide is not ytterbium. I don't know how it
4 happen.

5 Q Can you determine, in looking at -- just
6 looking at --

7 A Okay.

8 Q -- the formulas on H 52 --

9 A 52?

10 Q Yeah, page H 52, back to that page --

11 A Yes.

12 Q -- can you determine, for example, under item 2
13 with the little 2 --

14 A Uh-huh.

15 Q -- whether that actually is a ytterbium
16 sample --

17 A No.

18 Q -- or was an yttrium sample?

19 A Yttrium.

20 Q Yttrium?

21 A Because look at -- they put another element
22 here. Lanthanum 2, oxide 3, 2000 milligrams, and
23 yttrium oxide 3, 40 milligrams --

24 THE COURT REPORTER: What oxide? Yttrium
25 oxide?

1 A Lanthanum 2, oxide 3, 2000 milligram, yttrium
2 2, oxide 3, so he base it on the -- this element to do
3 the calculation, but I don't know how the B would show
4 up.

5 MR. PERRY: Can we take a break when you
6 get to a stopping point?

7 MR. HEWITT: Let me just see if there's
8 anything else on this exhibit.

9 Q (By Mr. Hewitt) On the next page, H 53, is that
10 also Mr. Wang's handwriting?

11 A Yes.

12 Q All of it?

13 A Yes.

14 Q And H 54?

15 A Yes. But I think the "sinter 7 hour 1000"
16 probably is my handwriting.

17 Q I'm sorry. Where is that?

18 A The last "sinter 7 hour 1000" is --

19 Q Oh, okay.

20 A -- that's my handwriting.

21 Q That's you?

22 A This one -- this -- only this one. The other
23 is Y. Q. Wang's handwriting.

24 Q And then on page H 55?

25 A Y. Q. Wang.

1 Q And then on page H 56?

2 A This one is my handwriting.

3 Q This -- I'm sorry. Which part?

4 A This one.

5 Q Okay.

6 A And other than that, it's Y. Q.'s handwriting.

7 MR. BEVERLY: Which one is in your
8 handwriting.

9 A This one by me.

10 MR. BEVERLY: Oh, okay.

11 Q (By Mr. Hewitt) And let's turn to page H 57.
12 Whose handwriting is shown there?

13 A I think that's Y. Q.'s writing. But in the
14 center, it look like my handwriting, yttrium 1.2, barium
15 0.8. This one look -- this one I'm real not sure. It
16 might be my handwriting, this -- this little circle.

17 Q Uh-huh.

18 A I -- I'm not quite sure at this point. I
19 cannot recall exactly. Look like -- 0.9 looks like Y.
20 Q.'s writing, you know. So, I'm not quite sure about
21 this one.

22 Q But the rest of it is Mr. Wang's?

23 A Maybe Mr. Wang's writing.

24 Q Does -- the fact that one of them is in your --
25 in your handwriting or possibly on H 57, does that

1 refresh your recollection at all that some work was
2 being done with ytterbium as well as with yttrium in
3 this period?

4 MR. BEVERLY: Objection, form.

5 A I don't think so. I don't think we have make
6 that because ytterbium actually is not superconducting.
7 Very difficult.

8 Q (By Mr. Hewitt) Let me refer you to page H --

9 A Yeah.

10 Q -- H 58. Can you tell me what, if anything, is
11 in your handwriting on H 58?

12 A I believe this is still Y. Q.'s handwriting.
13 If I am correct, it looks like his handwriting.

14 Q All right. Let's turn to H 59.

15 A Yes.

16 Q You say the writing on that is Wang?

17 A Y. Q.

18 Q And finally, H 60.

19 A This is Y. Q.'s handwriting.

20 Q Is it your understanding, then, that looking at
21 these references to YB for ytterbium in this Exhibit 21,
22 that they should have been yttrium?

23 A Where?

24 Q All -- all of them. All the references to YB,
25 is it your understanding that they should have been

1 yttrium --

2 MR. BEVERLY: Objection, form.

3 Q (By Mr. Hewitt) -- rather than YB for
4 ytterbium?

5 A Only that two. This one is YB. That's
6 ytterbium here. It's ytterbium.

7 Q Which page are you on?

8 A Only the other two -- I mention this little B
9 on the top --

10 Q Yeah.

11 A -- that should be yttrium, only these two.
12 Should not be ytterbium.

13 Q So, you're saying some are actually ytterbium
14 and some are not?

15 A Right. Here. See?

16 Q Give me the page, please.

17 A Page 57. YbB-102.

18 Q And what's your basis for determining what
19 should be ytterbium and what is not?

20 A That's a "b" and you use ytterbium 2, oxide 3
21 to do the calculation.

22 Q All right. So whenever it shows, such as on
23 page H 57, the actual oxide as being ytterbium --

24 A Correct.

25 Q -- you believe that is truly ytterbium --

1 A Correct.

2 Q -- sample?

3 A Correct.

4 Q But where it shows the oxide to be --

5 A Yttrium.

6 Q -- yttrium, even though the formula may have a
7 YB in it, it's actually an yttrium sample?

8 A Correct.

9 Q That's your belief?

10 A Yes.

11 Q Are you aware of any work being done by
12 Mr. Wang on ytterbium?

13 A I don't aware of it. At that time, so many
14 samples I don't think we make them all in short time.
15 We do the calculation and I -- I don't think we had time
16 to finish all of them. I don't recall if Y. Q. Wang do
17 the ytterbium or not. I don't know.

18 MR. HEWITT: Okay. We can break.

19 THE VIDEOGRAPHER: The time is 2:18 p.m.
20 We're off the record.

21 (Recess from 2:18 to 2:33).

22 THE VIDEOGRAPHER: The time is 2:33 p.m.
23 We're back on the record.

24 Q (By Mr. Hewitt) Mrs. Meng, let me hand you
25 what's been marked as previously -- well, it's got two

1 numbers on it. It's Deposition Exhibit 8. The
2 right-hand number is Exhibit 8. Oops. Let me give you
3 a clean one.

4 Do you recognize page H 47 showing a date
5 of January 13, 1987?

6 A Which one -- paper?

7 Q The first page of Exhibit 8. Do you recognize
8 the first page?

9 A Yes.

10 Q Is that your handwriting?

11 A I think some of them. It's not my -- on the
12 bottom is Y. Q.

13 Q And the bottom starting where?

14 A Oh.

15 Q Under YS-1?

16 A Yes, I think so. Maybe -- under that is his
17 writing.

18 Q Under --

19 A The YS --

20 Q Okay.

21 A -- is Y. Q maybe -- maybe. And some of them
22 here is his handwriting, too.

23 Q All right. Let me -- let me do this.

24 Would you just circle and identify those
25 parts that are Y. Q. Wang's? Here you go. Let me give

1 you this. That won't copy. The yellow won't copy. You
2 need to use that. Thanks.

3 And for the record, you're circling the
4 parts that are Mr. Wang's?

5 A Do you want me to say "Wang"?

6 Q Please. And, you know, since we've got
7 handwriting on it now, I think to keep it straight I'm
8 going to give it another deposition number, if I can
9 take it back just for a second.

10 (Exhibit.22 marked.)

11 Q (By Mr. Hewitt) I'm giving you deposition
12 No. 22. So if I understand it, then -- oh, you're still
13 writing, though, aren't you? The one at the bottom is
14 also Wang's?

15 A Y. Q. Wang, right.

16 Q All right. Maybe you better write "Wang" on
17 there also, if you don't mind.

18 The numbered items in circles 1, 2, 3 and
19 4, that's your handwriting, correct?

20 A Yes.

21 Q And those are compositions using
22 yttrium-strontium; and lutetium-strontium and
23 yttrium-barium and lutetium-barium; is that correct?

24 A Yes.

25 Q What -- what is the source of these formulas?

1 Where did they come from?

2 A I think that basically, after we found out from
3 Kitazawa, this compound should be 214. Okay? So that
4 we set up as 214 formula.

5 Q Right. Everything -- after Kitazawa and
6 Dr. Chu --

7 A Uh-huh.

8 Q -- informed you of that, everything is 214?

9 A Uh-huh.

10 Q And turning to use of 214 as the principal --

11 A Uh-huh.

12 Q -- system was Dr. Chu's direction; is that
13 correct?

14 A He asked us to use the 214 formula.

15 Q All right. Then whose suggestion was, then,
16 yttrium-strontium and lutetium-strontium? Was that
17 yours, Dr. Chu's, Pei Hor's or whoever?

18 A I don't remember.

19 Q As I understand your testimony earlier, as of
20 this date of January 13th, Dr. Hor had not provided you
21 anything in writing with any suggested formulas; is that
22 correct?

23 A Yes.

24 Q Now, turning to the second page, which is H 48,
25 is this your handwriting?

1 A No. It's Mr. Wang's.

2 Q All of it is Wang?

3 A Uh-huh.

4 Q And you have, just for the record, circled it
5 in writing and written "Wang." All right.

6 And then H 49, is that your handwriting or
7 Dr. Wang's or someone else's?

8 A That's mine.

9 Q All of this is your handwriting?

10 A Uh-huh.

11 Q Now, again, was Mr. Wang working independently
12 of you at this time?

13 A Well, I have to say Mr. Wang was helping me.

14 Q All right.

15 A Of course, he's my colleague. Okay? He also
16 have the material science background but he's not
17 familiar with superconducting material as well as I do.

18 Q You said that earlier.

19 Now, these particular compounds that are
20 shown here again are yttrium-strontium, yttrium-barium
21 that I see.

22 Do you know the source of the suggestion
23 of these formulas? Who suggested these?

24 A I don't recall.

25 Q You don't recall?

1 A No.

2 Q None of these formulations shown on Exhibit 22
3 were, to your knowledge, actually made, if at all, until
4 after Dr. Wu's trip -- second trip to the university
5 with his sample; is that correct?

6 A Can you repeat again?

7 Q I'll try, yes. Dr. Wu came for a second time
8 to the University of Houston in -- at the end of
9 January --

10 A Uh-huh.

11 Q -- correct? And at that time he brought an
12 yttrium sample?

13 A Uh-huh.

14 Q Now, prior to Dr. Wu's second trip to the
15 university, had you or anyone else in the University of
16 Houston lab actually synthesized into a compound any
17 yttrium formulas?

18 A What I think is not likely we really make a
19 compound. We do the calculation. Because by that time
20 we do not have yttrium oxide yet.

21 Q So, if I understand the way you described this
22 processing, you first make the calculations, then later
23 someone would determine the atomic weight and gram
24 weight for -- to make the compound, and then it would be
25 synthesized?

1 A Most of the time it's myself. But sometime I
2 have some undergraduate student. Maybe Mr. Wang's help.
3 But doesn't mean -- all the formulas are written here
4 and calculations here. I think I make the sample
5 immediately. I have to see the result.

6 Q Let's take an example of one of these pages.
7 Let's say, for example -- let's look at page H 49 on
8 Exhibit 22.

9 The sample that's shown there in the
10 square box is yttrium-strontium-copper-oxide under the
11 label YS-2; is that correct?

12 A Uh-huh.

13 Q And then there is a gram weight under each
14 element; is that correct?

15 A Uh-huh. Uh-huh.

16 Q And then underneath that is the amount of oxide
17 necessary --

18 A Uh-huh.

19 Q -- to make that gram weight?

20 A Uh-huh.

21 Q What is involved in actually making that
22 formulation -- excuse me. Or what is involved in making
23 that calculation to arrive at that formulation, the YS-2
24 on H 49?

25 A Myself.

1 Q And how do you go about doing that?

2 A Huh?

3 Q How do you go about doing that?

4 A Because if I know there's a 214 structure and
5 you know the principle, the only one you want substitute
6 is the first element. So that's why you got the
7 formula.

8 Q All right.

9 A So, as a materials scientist, we certainly know
10 that's the principle used to do it. Because the first
11 element, the second element, put together have to be
12 two. Copper have to be 1. Oxygen should be 4, so
13 perform 214.

14 Q As -- sorry.

15 A So the only thing you can change is between the
16 first element and the second element, change the
17 relationship.

18 Q In other words, the copper has to be 1, the
19 oxygen has to be 4 --

20 A Right.

21 Q -- and you adjust the ratio of the yttrium and
22 strontium so it makes 214?

23 A Correct.

24 Q And the combination of the yttrium and the
25 strontium together become 2?

1 A Yeah. Correct.

2 Q How long does it take to you arrive at a
3 formula for making a compound such as this
4 yttrium-strontium-copper-oxide formula on H 49?

5 A How long it take me to write it?

6 Q Uh-huh. Calculate it and write it.

7 A Oh, calculate? Maybe ten minutes or -- or
8 more. I don't remember.

9 Q Is that -- is ten minutes about the time it
10 normally took you to make each calculation?

11 A Around ten minutes or 20 minutes.

12 Q And were students also able to make these
13 calculations?

14 A The undergraduate student, no. They do not do
15 the calculations. That's why Y.Q. do the calculations.

16 Q These calculations -- help me with my chemistry
17 here. Are these mole -- mole weights or what -- what do
18 they represent? In the chemical context, what are they
19 called?

20 A Say it again.

21 Q Yeah. In other words, we've got 47.25 grams of
22 yttrium in this sample; is that right?

23 A The ratio.

24 Q What's that?

25 A That's ratio. Not gram.

1 Q Ratio?

2 A Yeah. You have converted that into weight.
3 That's how you do the calculation.

4 Q Right.

5 A You see, yttrium, you have to do the yttrium
6 weigh and 2, oxygen 3 and put together so synthesize
7 each 1,000 so the rest of them you base this 1,000 to
8 get the amount you need.

9 Q All right. And how much actual yttrium is
10 there, 1,000 grams?

11 A How much actually inside?

12 Q Yeah.

13 A Oh, I cannot -- I can -- you look at that --
14 this 47.25, 12.88 copper, 19.27 -- that's the ratio,
15 percentage ratio.

16 Q All right.

17 A You have to convert that into actual weight.

18 Q Okay. So, you take those -- these are your
19 percentages --

20 A Yeah.

21 Q -- in the box?

22 A Uh-huh.

23 Q And you take your weights below?

24 A Uh-huh.

25 Q All right. And do you -- are these the actual

1 weights that go into the compound then?

2 A Uh-huh.

3 Q A thousand grams of yttrium oxide --

4 A Uh-huh.

5 Q -- 361.59 grams of strontium carbonate --

6 A Correct.

7 Q -- and then 414 grams of copper oxide?

8 A Not require exactly 1,000. Just to tell you

9 the ratio or the weight between these three compounds.

10 Q All right.

11 A Yttrium oxygen only 500, strontium and copper

12 also would be different amount.

13 Q Right. What do you normally -- does that

14 depend upon the size of the samples you want to make?

15 A Correct.

16 Q Were you present when M. K. Wu came to the

17 university in -- in late January of -- of 1987 and

18 brought his sample?

19 A Yes.

20 Q And did he bring only one sample with him?

21 A I don't remember how many samples but at least

22 one.

23 Q And was it an yttrium-barium-copper-oxide

24 sample?

25 A Correct.

1 Q Was that sample then tested here for
2 superconductivity?

3 A Yes.

4 Q And do you recall what the result was?

5 A I recall the start transition is pretty high,
6 around 90.

7 THE COURT REPORTER: The what?

8 A Start, s-t-a-r-t -- the transition have mid
9 transmission, start transmission and zero is -- three
10 points is about 90. But the transition a little bit
11 broader. What I mean broader, from onset, it's 90 to
12 the zero probably is 70 or something. I didn't recall
13 exactly.

14 Q (By Mr. Hewitt) Okay. And it's desirable to
15 have a sharper transition than that?

16 A Correct.

17 Q All right. So, what was the next step, then,
18 done at the University of Houston after Dr. Wu came over
19 here with his sample --

20 A Dr --

21 Q -- and -- and it was tested?

22 A Dr. Chu asked me in meeting to make this
23 sample, to optimize the condition and get the good
24 quality sample in order to do the other measurement to
25 be published.

1 When the sample was not good enough, some
2 of the measurements cannot carry on. So, we need to
3 publish a paper. So, I did -- I did make the sample. I
4 believe the magnetic measurement, the so-called Meissner
5 information by the physicist --

6 THE COURT REPORTER: The so-called what?

7 A Meissner effect.

8 MR. HEWITT: M-e-i-s-s-n-e-r effect.

9 A Which it was -- it require the sample very
10 sharp transition. So, they -- I believe the published
11 paper at that time is using my sample to do the
12 measurement.

13 Q (By Mr. Hewitt) And how many samples were made
14 at that time by -- by you?

15 A I cannot recall how many. At least a few of
16 them.

17 Q And those samples were then tested?

18 A Yes.

19 Q And they were found to have a sharper
20 transition?

21 A Yes.

22 Q And was it --

23 A A higher transition temperature. 94.

24 Q Was a determination made at that time of the
25 phases in the sample?

1 A We didn't determine the phase yet, because
2 we -- I just took the X-ray, and I took the X-ray based
3 on the 214 structures identified in the formula 214
4 phase.

5 Q But you weren't able to identify the other --
6 other phases, correct?

7 A I did not see it because the -- the 214 is a
8 standard pattern you can get the --

9 THE COURT REPORTER: The what?

10 A -- pattern.

11 Q (By Mr. Hewitt) Pattern.

12 A -- which some people repeat that before the
13 structure.

14 Q Is that a perovskite pattern?

15 A No.

16 Q Non-perovskite?

17 A I think it's a perovskite structure, yes.

18 Q It is?

19 A Yes.

20 Q All right. 214 is a perovskite structure,
21 correct?

22 A Yes.

23 Q All right. So, you had the 214 sample that had
24 a high temperature than -- and did Dr. Chu realize that
25 the sample was multi-phase?

1 A Yes. The color is green color.

2 Q Is it necessary to look under an optical
3 microscope to see the phases?

4 A Yes. You cannot -- it's not eye visible.

5 Q So under -- but all that it requires is an
6 optical microscope?

7 A Optical microscope is far from enough.

8 Q It's what?

9 A Far from enough.

10 Q It's not enough?

11 A It's not enough to determine if it's
12 multi-phase or not. Because the multi-phase is very
13 small. You cannot see it.

14 THE COURT REPORTER: You cannot what?

15 A You cannot see it clearly. You have to go to
16 SEM.

17 Q (By Mr. Hewitt) Did -- did you all actually run
18 SEMs?

19 A Yes, we did.

20 Q And you determined from the SEMs that it had a
21 black and a green phase?

22 A Yes.

23 Q But is it true that you didn't have enough of
24 the structures, these phases, to determine the actual
25 crystalline structure or the compound?

1 A Say it again.

2 Q Yeah. Is it true that at the University of
3 Houston, you didn't have the equipment to take the next
4 step to determine the actual -- the actual composition
5 and -- and the crystalline phase?

6 A No, we do. I did. In fact, I had prepared one
7 step of sample with different composition. And then
8 I -- I processing them in identical condition.

9 From appearance, I see the sample color
10 change as a composition from light green, dark green,
11 light brown and to black. That's the first step.

12 So, I bring the sample to the SEM. From
13 the SEM, obviously, I see there's a different morphology
14 of the crystal --

15 THE COURT REPORTER: In the what?

16 A -- in the sample. Morphology.

17 MR. HEWITT: M-o-r-p-h-o-l-o-g-y.

18 A Morphology. Some is cubic. Some is, you know,
19 tetragonal, and so on and so on. And, also, the effect
20 of the light is different. So, obviously, there's two
21 different phases. That's from looking at the color.
22 And then I do the surface --

23 Q Excuse me. I'm a little confused about the
24 color.

25 Did you need an SEM to see that there

1 were --

2 A No, no, no.

3 Q -- two colors?

4 A Obviously, you could see it very clear. The
5 sample --

6 Q You could see it in what?

7 A Eye.

8 Q You could see it had a black and a green phase?

9 A Yes. I can see the six sample we got different
10 compositions. First sample, the light green. Second, a
11 little bit dark green and then light brown, and brown,
12 and black, and so and so, changed with the composition.
13 That's the first observation.

14 Second observation, I use ohmmeter very
15 simple. That's for the surface resistance. The green
16 color is insulator. And the resistance decreasing as
17 the color -- changed to dark color. And, finally, from
18 insulator to 2,000 ohm and to -- finally go to like 30
19 or 50 ohm resistance. That's -- you can see very likely
20 it's not completely certain the dark color must be
21 superconducting. That's one step -- two step.

22 Q Well, that was a determination that the black
23 phase was superconducting, correct?

24 A Not yet.

25 Q Not yet? Now --

1 A Do you want me to continue?

2 Q Well, let -- let me ask another question,
3 though.

4 You're -- you're speaking in the first
5 tense for yourself, that did you all this.

6 A Okay.

7 Q Where was Dr. Chu?

8 A Dr. Chu in Washington, D.C.

9 Q He wasn't present anymore?

10 A No.

11 Q Why did Dr. Hu -- Dr. Chu approach Dr. Mao and
12 Dr. Hazen in Washington, D.C. to get some work done?

13 A They want them to identify the structure of
14 this compound.

15 Q Who is they?

16 A Dr. Chu.

17 Q He wanted it?

18 A He want that because Hazen and Dr. Mao is
19 expert --

20 Q Okay.

21 A -- in this field.

22 Q Well, why couldn't you do that?

23 A I -- oh, that is a very special technique. You
24 cannot just simply identify the structure.

25 Q Isn't it --

1 A I do not have this background.

2 Q All right.

3 A I'm not capable to do that.

4 Q All right. So at this time, Dr. Chu knew and
5 you knew that the structure was multi-phase, correct?

6 A The compound was multi-phase.

7 Q The compound was multi-phase, had a black and a
8 green --

9 A Okay.

10 Q -- correct? And a determination needed --
11 but -- but isn't it then true at the university, neither
12 you, nor Dr. Chu, nor anyone else, had the equipment to
13 determine the crystalline structure and the actual
14 compound -- the actual formula for the two phases, black
15 and green?

16 A I believe that Professor Si Moss --

17 THE COURT REPORTER: Si who?

18 A Si Moss -- S-i m-o M-o -- he is specialize in
19 X-ray structure analyze in other group. He may be able
20 to do that.

21 Q But he didn't here, correct?

22 A Yeah. Dr. Chu didn't want to let him to do
23 that. I don't -- anyway, he didn't do it.

24 Q So Dr. Chu took it to Washington?

25 A Yes.

1 Q Now, if it was sent to Washington to get the
2 exact formula and to get the exact crystalline
3 structure, what is it that you determined?

4 A The point is that the sample we sent to Hazen
5 at that time is a mixture phases, kind of dark green.
6 It's very complicated for them to identify these two
7 phases.

8 Q So they wanted a phase that was purer?

9 A They didn't say anything. But I understand
10 that. That's very crucial to separate these two phases
11 to help them to identify the structure.

12 Q Are you saying that -- that it was entirely
13 your idea to develop two different products, one more of
14 a black phase and one more of a green phase?

15 A I have said that's my responsibility.

16 Q I didn't ask responsibility. Was it your idea
17 to do that?

18 A It's the same. My idea because that my
19 responsibility and they agree.

20 Q Well, isn't it true that Dr. Chu understood
21 this phase issue and looked and knew that this phase --
22 the black phase and green phase needed to be determined
23 and that's why he brought it to Washington, D.C.?

24 MR. BEVERLY: Objection, form.

25 A No. He brought this sample to Washington,

1 D.C., wanted to identify the superconductor phase, but
2 he did not ask me to separate these two phases.

3 But I know -- understand Dr. Chu
4 definitely should understand the importance of separate
5 this phase, but he did not ask me to do it.

6 Q (By Mr. Hewitt) Well, isn't it true, Dr. Meng,
7 that after Dr. Chu brought the first samples up, that it
8 was determined by Dr. Hazen that they needed to have
9 samples that were more predominantly black or more
10 predominantly green? Isn't that true?

11 A I am the person responsible to send the sample
12 to Dr. Hazen.

13 Q You may have been the person responsible but
14 wasn't it --

15 A Because I talked to Dr. Chu. Dr. Chu asked me
16 to send the sample.

17 Q That's what I wanted to know.

18 A I select the sample --

19 Q All right. Dr. Chu --

20 A -- to send to Hazen.

21 Q -- asked you to do that, correct?

22 A Yes.

23 Q All right. And how was it determined that the
24 black sample was superconducting and the green sample
25 was insulating?

1 A Okay. Can I continue? I already told you
2 first and second step, right?

3 I already synthesize that. Under SEM I
4 see the different morphology. I see color. And now the
5 points I have to find out what the composition in
6 different color sample. And one sample have two phases.
7 One is like -- called transparency, so what is that
8 inside? So I do the EDS --

9 Q I'm sorry. You do what?

10 A EDS. They call energy dispersive analysis of
11 X-ray, the full name, which is equipment in the
12 electrical engineering department. We, physics, doesn't
13 have that. And I cannot operate the machine, either. I
14 need to ask help from their technician. He specializes
15 in doing that.

16 I bring the sam -- sample to the lab and
17 they -- we look at the sample. I tell to -- I tell him
18 which one I want to see, what I want to do and he do
19 that for me. So after that, we cut out all the -- six
20 samples have different composition, rich. That's number
21 one.

22 Q I'm sorry. You ordered them?

23 A I did not order. I asked the -- the technician
24 help me to operate the machine and get the data.

25 Q I see.

1 A Because this machine was in electrical en --
2 engineering department. I cannot operate that machine.
3 And I received the result.

4 Number 1, I find out the phase each sample
5 have, how many percentage ratio of the phase. For
6 example, green sample, larger proportionate --

7 THE COURT REPORTER: A lot of what?

8 A -- large -- large, ten percentage is -- is rich
9 in yttrium. Okay? And then later on, in the broad
10 sample have yttrium -- have different -- less yttrium so
11 I got the whole sample -- the sample with different
12 composition. So I know that in this sample the
13 superconductor phase very likely is black --

14 THE COURT REPORTER: Superconductor phase
15 is very likely --

16 A Very likely sample, not green one, black color,
17 not the green one.

18 Q (By Mr. Hewitt) Wasn't it also necessary that
19 tests be run on --

20 A Yes.

21 Q -- how conductive these --

22 A In our group.

23 Q -- samples were in your group?

24 A And I bring the sample back. I remember I
25 talked to Pei and Pei would talk to the students. We

1 have two students do the measurement. So I said, "Pei,
2 we have to take the measurement for this second sample."

3 So if the measurement result is -- agree
4 with what I have, what I expect and which one is a
5 superconducting phase, so we should send to Hazen. And
6 it -- it is.

7 Finally, the -- the black sample I have is
8 very close to 123 already. It's one or two -- 1.9 or
9 2.9, something, copper. And then I talk to Dr. Chu --
10 called Dr. Chu to tell him.

11 Dr. Chu says, "Okay. Now you send the
12 sample to Hazen." I did immediately send to Hazen. And
13 then maybe after they had the sample, maybe only a
14 couple of days, they solve the problem, identified this
15 123.

16 And he called back -- Hazen called back --
17 or Dr. Chu called back -- I didn't remember -- maybe
18 Hazen -- Hazen talked to Paul or Paul talked to me -- I
19 don't remember -- he say, "Ruling, that's 123. But it's
20 a tetragonal structure." It's a 123 compound. The
21 composition is yttrium 1, barium 2, copper 3, oxide.

22 Q What did you say after that? Tetragonal?

23 A Yeah. The lattice parameter. They have to
24 measure the lattice parameter.

25 Q The lattice parameters?

1 A Yeah, for the sample, the crystal. The lattice
2 parameter.

3 Q Did you, yourself, ever go to Washington,
4 D.C. --

5 A No.

6 Q -- with Dr. Chu?

7 A Never.

8 Q Did you have any personal discussions with
9 Dr. Hazen or Dr. Mao about these samples?

10 A I never talked with Dr. Mao. Dr. Mao did write
11 me two notes once just to tell me this sample -- the
12 green mixture sample and -- very simple notes. "Okay.
13 I received your sample. We are working on one sample."

14 But Hazen never -- but I talked to Hazen
15 maybe one time or twice. I didn't remember. And he
16 told me thank you for -- for me to send him the last
17 sample; it great help. So they --

18 Q Did he tell you to do that or did Dr. Chu?

19 A To do what?

20 Q Send the last sample.

21 A Dr. Chu asked me to send him. I reported to
22 Dr. Chu and Dr. Chu said, "Send to it Hazen right away."
23 I did. Dr. Chu also understand that.

24 Q So as a result of this work, it was determined
25 that the black superconducting phase was

1 yttrium-barium-copper-oxide 123, correct?

2 A Correct.

3 Q Now, prior to that determination, had you been
4 instructed by Dr. Chu to do some work in the rare earth
5 area --

6 MR. BEVERLY: Objection, form.

7 Q (By Mr. Hewitt) -- prior to knowing about 123
8 as being the -- the compound to be identified?

9 A Well, in fact, before March meeting, at the end
10 of the -- February, after we got the yttrium and then
11 when I got the gad -- gadolinium, I believe I already
12 start to work in the other area of compound which I -- I
13 believe I also discussed it with Pei. Because I think
14 that's very naturally we just report to Dr. Chu. It's
15 not necessary Dr. Chu have point out do this one, do
16 this one. It's not necessary.

17 And we report to him what we are doing.
18 And he's very happy. For the APS meeting, we -- we was
19 delayed six days. We did not go to the meeting on time
20 because he want us to finish all the experiments.

21 Q All right. Just a moment.

22 MR. HEWITT: I need to go off the record
23 for a minute.

24 MR. BEVERLY: Sure. No problem.

25 THE VIDEOGRAPHER: The time is 3:06 p.m.

1 This marks the end of tape No. 2, and we're off the
2 record.

3 (Recess from 3:06 to 3:21).

4 THE VIDEOGRAPHER: Here marks the
5 beginning of tape 3 to the deposition of Ruling Meng.
6 The time on the monitor is 3:21 p.m. And we're on the
7 record.

8 Q (By Mr. Hewitt) Mrs. Meng, do you recall the
9 date when you learned from Dr. Chu the 123 formula that
10 had been determined by Dr. Hazen and his staff? Do you
11 remember the date?

12 A No. I cannot recall the date.

13 Q If you'll look at Exhibit 19 again on page 4.

14 A Which one?

15 Q Exhibit 19 is this one, your affidavit. If you
16 will look at page 4, under the first bullet point, you
17 state that you learned on that date, March 8, 1987, the
18 123 structure for YBCO --

19 A Uh-huh.

20 Q -- correct? Prior to March 8, 1987, had work
21 already been done on other rare earths than yttrium and
22 lutetium?

23 A Correct.

24 (Exhibit.23 marked.)

25 Q (By Mr. Hewitt) Let me hand you what I've

1 marked as Exhibit 23. Exhibit 23 are excerpts from your
2 lab book pages H 131 through 142.

3 I see on the first page -- well, first of
4 all, perhaps we need to go through and look at each page
5 and get the handwriting correct, so let's do that.

6 If you will start with page 131 -- H 131
7 on Exhibit 23, do you recognize the handwriting on H --

8 A Y. Q. Wang.

9 Q Everything on the page is Wang?

10 A Uh-huh.

11 Q And then on page 130?

12 A Y. Q.

13 Q I'm sorry. I must have misspoken. The first
14 page was H 131. That's all Y. Q. Wang's handwriting?

15 A Correct.

16 Q And 132?

17 A It's Y. Q.

18 Q And 133?

19 A It's Y. Q.

20 Q 134? Whose handwriting is shown there on
21 page 134?

22 A Y. Q.

23 Q Page 135?

24 A Y. Q.

25 Q And 136?

1 A Y. Q.

2 Q 137?

3 A It's Y. Q.

4 Q And H 138?

5 A It's Y. Q.

6 Q H 139?

7 A It's Y. Q.

8 Q And H 140?

9 A It's Y. Q.

10 Q And H 141?

11 A Yes. Y. Q.

12 Q And H 142?

13 A It's Y. Q.

14 Q Looking at the work over the pages 131 to H 142

15 on Exhibit 23, does this work represent doping of the

16 rare earths into a yttrium-barium-copper-oxide or

17 lanthanum-barium-copper-oxide formula?

18 MR. BEVERLY: Objection, form.

19 A Yes.

20 Q (By Mr. Hewitt) Were you aware of the work that

21 Mr. Wang, was doing as shown on this exhibit?

22 A I believe all the formula must be created by me

23 because Dr. Chu never go in that detail, tell me, 0.01

24 0.02. He never detail to tell me to change that. And

25 then after that, I have formula and Mr. Wang helped me

1 to do the calculations.

2 Q So you believe you gave these formulas there --

3 A Very likely.

4 Q -- to Mr. Wang?

5 A Yes.

6 Q And did you do that at the instruction of
7 Dr. Chu?

8 A I don't think so. Because Dr. Chu never go
9 that detailed to tell me from 0.05 to 0.01 and then so
10 and so. I don't think so.

11 Q Okay.

12 A I don't think Dr. Chu would tell me that
13 detail.

14 Q Did Dr. Chu give you instructions in about this
15 time frame to do partial doping of the rare earths into
16 the yttrium-barium and lanthanum --

17 A I don't recall that --

18 Q -- and lanthanum-barium-copper oxide?

19 A I do not call exactly. For the substitution
20 possibly. Maybe he talk to me. But how, and what
21 elements were substituted, which amount, I don't think
22 he told me that. We have been discussing something
23 maybe.

24 Q What do you believe he told you?

25 A That same -- we can try to substitute possibly

1 by yttrium to see if we can enhance the superconducting
2 property or not, or something like that.

3 But I'm not quite sure -- hundred percent
4 sure because my memory may not be correct after so many
5 years.

6 Q With respect to the various formulations that
7 are shown here in Exhibit 23, were these formulations
8 then actually synthesized into samples and tested?

9 A I believe some of them, not all of them.

10 Q Do you know what the results of the testing
11 was?

12 A I cannot tell you all of them. If I look back,
13 I believe some of them doesn't have a great effect of
14 the result. One -- the substitutes, the amounts are so
15 low, 0.05, and they all rare earths. They will not have
16 a lot better --

17 Q Not a what?

18 A They do not have great deal effect on the
19 property of the material.

20 Q Do you -- did you understand the purpose of
21 these partial substitutions?

22 A No one can predict what material can we have
23 high Tc. What I'm doing sometime is randomly to do the
24 mixture to see to get any effect or not. I do not
25 expecting the result and I don't know what the result

1 would be. I do not.

2 Q Well, were you trying -- do you believe this
3 work was trying to determine if these rare earths would
4 enhance the superconducting temperature? Is that your
5 understanding?

6 A Maybe property, anyway.

7 Q Properties?

8 A Yeah. Electronic property and something.

9 Q The what?

10 A Other property -- I don't know. That's just
11 what I'm thinking.

12 Q Had you ever been -- have you previously had
13 any experience with partial doping into superconducting
14 properties before this, before Exhibit 23?

15 A Well, the lanthanum, very beginning the
16 lanthanum-barium-copper-oxide is example of a
17 substitute -- partial substitution. But it's by barium.
18 But now we substitute by rare earth. I thought it is
19 similar.

20 I tell the truth, if I write this thing
21 down, I do not think I know it -- what can I expect. I
22 don't.

23 Q Did -- did you -- but -- but you understood the
24 goal to be, as I understand --

25 A Yes, yes.

1 Q -- to try to get a higher superconducting --
2 A Yeah.
3 Q -- composition out of this?
4 A Higher superconducting volume or temperature.
5 Q Temperature?
6 A Yes.
7 Q Let me hand you what I'm marking as Exhibit 24.
8 (Exhibit.24 marked.)
9 Q (By Mr. Hewitt) Exhibit 24 is pages H 158
10 through page H 168. And let's again go through each
11 page and tell me whose handwriting, please, beginning
12 with page H 158.
13 MR. BEVERLY: What did you mark this one
14 as?
15 MR. HEWITT: Exhibit 24.
16 MR. BEVERLY: Thank you.
17 A Under the 902 -- under the formula, I write a
18 formula and Mr. Wang -- Y. Q. Wang write the following.
19 Q (By Mr. Hewitt) Since it's a partial page,
20 would you mind circling the part of this document or --
21 or Y.Q. Wang's -- I don't know if he's a doctor or not.
22 And did you write "Wang" on it? Okay.
23 And let's go ahead and go to H 159 in
24 Exhibit 24.
25 A This one I write down the formula and the

1 calculation part is by one of the students but I do not
2 remember who.

3 Q All right. Why don't you just circle --

4 A Maybe Daniel. Maybe --

5 Q Circle the part you wrote.

6 A Maybe it's Daniel.

7 Q Okay. Why don't -- maybe you better write
8 "student" by the part you think is a student.

9 A Student.

10 Q Yeah. And then circle your parts of it and put
11 your name, please, so it will be straight.

12 Could I -- could you just show me the
13 page? Okay. Thank you. And then --

14 A This is my handwriting.

15 Q And then you have "R.L." by yours. Okay.

16 A Yeah.

17 Q Let's turn to 160.

18 A These are -- I think in the first paragraph is
19 Y. Q. Wang and then this is my -- Tb-1001, that's mine.

20 Q How about that September 4th, 1987? Do you
21 know what -- whose handwriting that is?

22 A Which one?

23 Q The date September 4, 1987. I'm sorry. I'm on
24 page 160. Yeah. You see the date below the stamp?

25 A Oh, yeah, September. I don't know -- I don't

1 know where I got September 1st. Maybe -- maybe I write
2 it later on.

3 Q Is that your handwriting?

4 A Yes, it's in my handwriting. Maybe I put that
5 on the same page later on.

6 Q You don't know why there would be two different
7 dates months apart there?

8 A Very likely I do that ytterbium for long time
9 and later on if I want to do it again, I want to enhance
10 the copper content to see it form or not. But it was
11 later after September. But I want to put the same
12 element, same compound on one page. Very likely. I'm
13 not sure.

14 Q All right. Have you ever seen this stamp
15 before, "read and understand understood this" blank date
16 "by" blank?

17 A Yes. I have this stamp. And when I -- after
18 that, we, obviously, ask people to sign it.

19 Q That's the first time I recall seeing it. Was
20 it used often?

21 A Oh, sometime -- most of the people they sign it
22 by Dr. Ignatiev.

23 THE COURT REPORTER: Doctor --

24 A Dr. Ignatiev.

25 Q (By Mr. Hewitt) Okay. You'll have to give her

1 the spelling at a break.

2 MR. PERRY: I-g-n-a-t-i-e-v.

3 Q (By Mr. Hewitt) Oh, I'm sorry. Ignatiev.

4 A Ignatiev.

5 Q Yeah, yeah. Okay. we understand. Still on
6 page 160, the date March 15, 1987 at the top, is that
7 Wang or you?

8 A Wang on the top. "Tb 1001" is Wang.

9 Q And the date there is also Wang?

10 A Yes.

11 Q And then on page 161, whose handwriting is
12 that?

13 A That's Wang.

14 Q All is Wang?

15 A Yes.

16 Q And page H 162?

17 A Yes, also.

18 Q And page 163?

19 A Yes.

20 Q Page 164?

21 A Yes.

22 Q Page 165?

23 A Yes.

24 Q Page 166?

25 A Yes.

1 Q Page 167?

2 A In the first -- praseodymium 1601 --

3 THE COURT REPORTER: The first what?

4 A Praseodymium, Pr, the first one, is my

5 handwriting. After 1602, which is doping with

6 potassium, which is by Y. Q. Wang.

7 Q And that May 13th, 1988, date, is that Wang?

8 A Yes.

9 Q So everything above the potassium is your

10 handwriting?

11 A Well, above is potassium also but it is PO 123.

12 It's potassium.

13 Q Right. Okay.

14 A That's PO 123, no doping.

15 Q But that's -- but the Pr is praseodymium?

16 A PO -- pot -- potassium.

17 Q Potassium?

18 A Yeah -- no, no.

19 Q Praseodymium? Am I mispronouncing it?

20 A Potassium?

21 Q Well, K is potassium.

22 A Wait a minute.

23 Q How do you -- how do you spell.

24 A Praseodymium. Praseodymium.

25 Q I've got a syllable out. Praseodymium.

1 A Yeah, praseodymium.

2 Q All right. And that top part 1601, and the Pr
3 and that -- that is yours?

4 A Yes.

5 Q And the next page, 168?

6 A That's my -- my handwriting.

7 Q All right. Back to the front again of
8 Exhibit 24.

9 Now, this work, the first sample on
10 March 12, 1987, can you tell me what that represents,
11 the gadolinium-barium-copper?

12 A What do you mean what do it represent?
13 Because --

14 Q What is it?

15 A Because we want to find out gadolinium replace
16 yttrium. Replace -- we use gadolinium, replace yttrium.

17 Q You're replacing yttrium?

18 A Yeah, to see if we reproduce the superconductor
19 or not.

20 Q Determine if the -- this rare earth gadolinium
21 was a superconductor?

22 A Right.

23 Q And did Pei Hor instruct you to do that?

24 A I talked to Pei after yttrium and he suggest me
25 to do that.

1 Q Now, did you see any connection between the
2 work that Pei Hor suggested where the gadolinium was a
3 complete substitution and the partial doping work that
4 was done in late February of the prior Exhibit 23? Was
5 there any difference between the two?

6 A The only thing about your question is does
7 complete -- completely substitution. Do they have any
8 relationship with the partial substitution?

9 Q Yes.

10 A I think the purpose is the same -- is the same
11 purpose, to see can we have any opportunity to get the
12 higher temperatures superconductor for the partial
13 substitute. But gadolinium totally substitutes because
14 we want to see beside yttrium whether the other rare
15 earth can become superconductor or not. And gadolinium
16 is the first element we don't try a hundred percent
17 replace yttrium.

18 Q Okay. Was the partial sub -- substitutions, in
19 your mind, a prediction that gad -- if it worked in the
20 partial substitution of Exhibit 23, that gadolinium
21 would likely work now?

22 MR. BEVERLY: Objection, form.

23 A Say it again.

24 Q (By Mr. Hewitt) Yeah. Well, first of all, let
25 me -- there's -- there's another question I need to ask.

1 Isn't it true that in Exhibit 1 -- in
2 Exhibit 24, the nominal compound is now 123?

3 A Yes.

4 Q And in Exhibit 23, the nominal compound is 214?

5 A Which one is 214? The substitution?

6 Q The partial substitution of Exhibit 23.

7 A Is 214.

8 Q Right. Just look at the date. You didn't know
9 on those dates that --

10 A Oh, okay.

11 Q -- it was 123, correct?

12 A No. 214.

13 Q And then -- and then later, after March 7, you
14 and everyone else knew that it was 123 --

15 A Uh-huh.

16 Q -- correct?

17 A Uh-huh.

18 Q So, the initial work that was done on partial
19 substitution was now a complete substitution of each
20 rare earth but it was in the 123 context, correct?

21 A Yes.

22 Q Okay. Do you know whether or not the initial
23 work and partial substitution on Exhibit 23 -- Exhibit
24 23 predicted anything with respect to how the rare --
25 rare earths would actually work in superconductivity?

1 A I don't think I can predict it. I don't
2 know -- I don't know the result at that time. I just --
3 no one can really predict the result for superconductor
4 and especially greater likely sample, so we have to try
5 it different way, different composition to see where we
6 can get that.

7 Q Did Pei Hor explain to you why he wanted
8 gadolinium to be completely substituted in the 123
9 formula?

10 A Well, I asked him because he -- he said because
11 the gadolinium have magnetic moment. In the -- all
12 series for low temperature superconductor, there's very
13 magnetic material will kill the superconductor because
14 the so-called pair breaking --

15 THE COURT REPORTER: The what?

16 A Yeah. It go -- why the superconductor go
17 direction from the pair, so they -- so they can walk
18 through it, but you have magnetic material they so call
19 pair breaking. I cannot tell you very detail from
20 physics but that's the idea.

21 So, for the long time people consider they
22 cannot be co-existent, superconductor material and
23 magnetic. They will kill that. In fact, in the late
24 '79 and late '80s, they do have some superconducting
25 material with magnetic element inside. In -- in fact,

1 that's not new. Later on.

2 But, again, for this new high-temperature
3 superconductor would -- they be the same result with
4 that magnetic moment element will kill the
5 superconductor or not. That's the first element.
6 That's what Dr. Pei told me. He said -- he said we can
7 substitute gadolinium to see what happens. If
8 gadolinium work, that is an indicator probably other
9 elements will work.

10 Q Do you know why gadolinium would work?

11 A Why?

12 Q Uh-huh.

13 A Oh, I'm not sure exactly why. So far --

14 Q You said what?

15 A I'm could not -- I cannot answer your question
16 why this one not. For example now, so far
17 cerium-praseodymium never superconducting. You can ask
18 me why. I don't know. I don't know why.

19 But for the rare earth a lot of element
20 they do have magnetic moment but they are still
21 superconducting. So far I don't think anyone can tell
22 you why exactly. I -- I don't know. For myself, I
23 cannot answer this question.

24 Q And then if you'll look through the other
25 substitutions -- for example, let's look at number 902

1 on page 158.

2 A Yes.

3 Q There the gadolinium is 0.25?

4 A Uh-huh.

5 MR. BEVERLY: Which page are we on? I'm
6 sorry.

7 MR. HEWITT: Still, first page of
8 Exhibit 24.

9 Q (By Mr. Hewitt) Does that represent a complete
10 substitution --

11 A No.

12 Q -- for yttrium or a partial substitution?

13 A No. Partially. I look at this formula. I
14 feel -- I write the formula myself, but it doesn't make
15 sense.

16 Q Why doesn't it make sense?

17 A Because gadolinium is only 0.25. So, that
18 means the barium almost two quarter of them, so -- but I
19 did write it. Also, if you pay attention, you can see I
20 working on 113 structure.

21 Q This is 113?

22 A Right. Gadolinium and barium, put them
23 together 3. Copper is 3. In other words --

24 Q Is that -- is that -- excuse me. Is that 113?

25 A 33 and X, so your X can be 3. Do you

1 understand me? You -- you -- the Y3 divided by 3 is
2 113. Okay?

3 But at that period, I think I have been
4 randomly trying a lot of different things, randomly
5 trying a lot of different composition, element, put
6 whatever element I think about I put inside.

7 Q And in number 903 on the same page --

8 A Yes.

9 Q -- there's gadolinium 0.8, europium 0.2?

10 A Europium. Yeah, it should work, this one.

11 Q Why do you say that?

12 A Because --

13 Q It's 123?

14 A 123 -- not only that. The atomic size is very
15 close from the crystal. You can see inside the -- each
16 atom would be in a different position. If the seat is
17 very small, you cannot put very large atom over there
18 but this one very close.

19 Q Is it your understanding that gadolinium, for
20 example, operates as part of the superconducting phase
21 or is part of the insulation phase?

22 A I'm not clear with the question. Can you
23 repeat again, please?

24 Q Well, are there more than one function within
25 these phases, that is, is one -- is one phase

1 functioning --

2 A All the --

3 Q Let -- let me stop and talk to my associate. I
4 don't think I got the question right.

5 A That's okay.

6 THE VIDEOGRAPHER: Do you want to go off
7 the record, sir?

8 MR. HEWITT: Please.

9 THE VIDEOGRAPHER: The time is 3:50 p.m.
10 We're off the record.

11 (Recess from 3:50 to 3:57).

12 THE VIDEOGRAPHER: The time it 3:57 p.m.
13 We are back on the record.

14 Q (By Mr. Hewitt) Mrs. Meng, within the
15 yttrium-barium-copper-oxide system that's 123, did you
16 ever determine what the function was of yttrium?

17 A No.

18 Q Okay.

19 A I just think there's one element to form the
20 compound.

21 Q What --

22 A What is the function? I haven't determined
23 what the function of yttrium is. However, I understand
24 in this crystal -- okay -- that each element have
25 different position. To lead to the superconductivity

1 property, most of the people considers it caused by
2 copper --

3 THE COURT REPORTER: By what?

4 A Copper or copper change. So, therefore,
5 yttrium, I don't think it's a particular function
6 because you can replace yttrium by gadolinium, europium
7 and samarium, neodymium. It's still superconducting.

8 Q (By Mr. Hewitt) Well, why do you need yttrium?

9 A You can use europium-gadolinium.

10 Q Why do you need gadolinium-europium-yttrium?
11 Why?

12 A Because a structure -- you need a structure.
13 There's a structure in there. You need a stable
14 structure, otherwise, they not form the structure, the
15 tetragonal or orthorhombic.

16 Q So is the answer --

17 A It's --

18 Q Is the answer stability?

19 A Yes. It's to form the structure. But not have
20 to be yttrium. That's -- later on we understand that,
21 not the beginning.

22 Q Well, at this time, as I understand it, you
23 weren't fully aware of the work done in partial doping
24 by Exhibit 23, correct? You weren't really aware of
25 that work?

1 A Well, I told you I don't recall it very well
2 about that work. And it's likely we do the calculation.
3 Do we have time to really work on the sample or not?
4 I'm not quite sure. That's one possibility.

5 Secondly, did Y. Q. do that? I don't
6 know. I'm not quite sure. I cannot recall exactly.

7 Q Let's turn to page 4 of your affidavit,
8 Exhibit 19. Who is Charles Cox?

9 A He is an attorney representing UH from your
10 company -- your -- your firm.

11 Q He's -- he's no longer at our firm.

12 A But at that time, he was. I understand he was
13 in -- in your law firm.

14 Q Now, there is an ongoing dispute between the
15 parties as to whether or not certain testimony will be
16 obtained from Mr. Cox or you or others will be allowed
17 to testify to what Mr. Cox said or what you told
18 Mr. Cox. This is an attorney-client privilege issue, so
19 I'm not going to ask you any questions about your
20 meeting with Mr. Cox.

21 If I read correctly -- if I recall
22 correctly from the affidavit and testimony of Pei Hor,
23 he said -- outside of the meeting with Mr. Cox, he said
24 outside of that meeting, that Dr. Chu told him he would
25 speak to Mr. Cox about the inventorship issue. Did you

1 hear that statement?

2 A No. I was not there. Only their conversation.

3 Q Did Dr. Chu ever make any promise to you that
4 you would be named as an inventor on these patents?

5 A He never mentioned anything and I think not
6 necessary for any promise. I always consider he say we
7 patent -- "our" patent.

8 Q All right. But just to get an answer to my
9 question.

10 A He never say who is the inventor in the patent.

11 Q All right.

12 A He never say who is the inventor in the patent.

13 Q And is it correct, then, that Dr. Chu never
14 made any promise to you that you would be an inventor?

15 A He say that before we are all inventor in the
16 meeting with Charles Cox.

17 Q Well, now, I'm going to --

18 A In only one meeting with Charles Cox.

19 Q All right. I -- I'm going to -- was Mr. Cox
20 present at that time?

21 A Yes.

22 Q All right. Well, that is a privilege of the
23 University of Houston, and I'm going to move to strike
24 that comment. And I -- I don't want you to comment on
25 what Mr. Cox said or what was said in the meeting with

1 Mr. Cox.

2 Your other lawyers may feel differently
3 about that, but that's -- that is the privilege of the U
4 of H and I have to assert that privilege.

5 MR. BEVERLY: Are you instructing her not
6 to answer?

7 MR. HEWITT: I am. Not to further answer.
8 I don't want -- I'm not trying to elicit any answer from
9 her relating to what Mr. Cox has said.

10 A Then do you want me to answer Dr. Chu have
11 been -- something like that.

12 Q (By Mr. Hewitt) Sorry?

13 A Do you want me to answer Dr. Chu have to say
14 that we are all inventor? Yes, in that meeting and
15 Charles was there.

16 Q All right. I am -- same instruction, then.
17 I'm instructing you not to answer that and move to
18 strike the statement.

19 MR. BEVERLY: I don't think you can
20 instruct someone who is not your client not to answer.

21 MR. HEWITT: Well, she may not take the
22 instruction, but I'm making it.

23 MR. BEVERLY: Well, that -- that's a whole
24 different story.

25 MR. HEWITT: That's entirely up to you.

1 MR. BEVERLY: Well, our position is that
2 you cannot instruct her not to answer.

3 Q (By Mr. Hewitt) You ultimately gave a
4 deposition in the Wu v. Chu interference; is that
5 correct?

6 A Correct.

7 Q And that was in 1993?

8 A Correct.

9 (Exhibit.25 marked.)

10 Q (By Mr. Hewitt) I've marked as Exhibit 25 a
11 copy of that deposition.

12 A Uh-huh.

13 Q As I understand your affidavit, on page 5 of
14 Exhibit 19 --

15 A Uh-huh.

16 Q -- your testimony is today that the statements
17 you made in this deposition about a phone call from
18 Dr. Chu were a lie and untrue; is that correct?

19 MR. BEVERLY: Objection, form.

20 MR. PERRY: Objection, form.

21 MR. BEVERLY: I'll join that.

22 Q (By Mr. Hewitt) Is that correct?

23 A I don't know your question. Ask it again.

24 Q Yeah. In -- on page -- back in Exhibit 19 --
25 you need to look at that again --

1 A This one?

2 Q -- your earlier affidavit? Yes, that's right.
3 You say at the bottom of page 4, last bullet point,
4 page 4 --

5 A Yes.

6 Q -- quote, "in 1993, I was asking to make a
7 deposition for UH against the University of Alabama. I
8 do not have any choice but to continue to lie by
9 testifying that Dr. Chu had called and told me about the
10 substitution of lanthanum with yttrium," period, end
11 quote. That's your statement, right?

12 A Yes.

13 Q And you then state two -- two sentences later,
14 third line on page 5 of Exhibit 19, quote, "Besides
15 this, all of my other statements in the deposition are
16 true," end quote. Is that your statement?

17 A Yes.

18 Q Then what I'm asking with respect to Exhibit 25
19 is: Other than the statements you make here in the
20 deposition --

21 A Uh-huh.

22 Q -- regarding the phone call from Dr. Chu in mid
23 December --

24 A Page what?

25 Q I'm not sure what pages they are.

1 A Okay.

2 Q But let's see if we can do it without going to
3 the pages.

4 A Okay.

5 Q Other than the phone call -- other -- excuse
6 me. Let me start all over.

7 As I understand, these statements you have
8 made on pages 4 and 5 of Exhibit 19 --

9 A Uh-huh.

10 Q -- your current testimony is that the
11 statements made in the deposition regarding the
12 telephone call were untrue but everything else in the
13 deposition was true?

14 A Correct.

15 Q And in making the statement that all -- on
16 page 5 that all your other statements in the deposition
17 are true, did you go back and read the deposition to be
18 certain of that?

19 A You mean after that? Well, I think I used the
20 wrong word as lie. In fact, I have only stated I didn't
21 do it -- I do it wrong way to testimony, Dr. Chu call me
22 and it's not -- it's untrue statement. Untrue. It's
23 not real true statement.

24 Q I'm sorry. I've lost you.

25 A I don't understand in -- in English lie. And I

1 was told it's very serious. Intent to do something bad.

2 You understand what I mean?

3 Lying, that means you intend to -- to do
4 something bad to hurt someone else. But untrue or
5 wrongdoing is different.

6 I have good intention to do that because
7 Charles Cox told me in order to -- UH to earn the
8 patent --

9 Q All right.

10 A -- you have to identify Dr. Chu. I say, "Why?"
11 He said, "Because Dr. Chu represent you people. So you
12 have to identify, otherwise, UH will lose patent."

13 So I had good intention to make this white
14 lie. So, I don't think that should lie. But I don't
15 understand exactly English to say that's wrongdoing.
16 That's after -- later, I read this affidavit. Oh, my
17 God, I didn't use this word because lie -- mostly these
18 people is -- is not reliable, bad quality, and that kind
19 of thing, intention to do something to harm people or
20 hurt the other people.

21 But I'm not. I have very good intention,
22 just want to protect UH. That's why I'm willing to do
23 something even so I lie. But I think he our
24 representative, our patent at that time -- even I know
25 it's not Dr. Chu call me -- but I say, well, anyway

1 that's our team.

2 I remember in this -- in this interference
3 deposition, if you pay attention in one of the
4 paragraphs they asked me who is the one who bring -- in
5 the meeting, who -- who is bring up the idea of
6 substitution? I didn't say the member in our group.
7 But I say -- they say, "It's you"? I said, "No, not
8 me." So, obviously, I tried to a little bit back up.

9 Q I'm sorry. You tried to what?

10 A Back up. Dr. Chu -- I want to say, anyway,
11 he's a member in our team. It's UH.

12 So, I think that's a very different --
13 after I write the affidavit, some -- I realize that's
14 the word. Maybe I'm wrong.

15 That's -- I understand. I mean good
16 intention to do that. And, also, I was expressly
17 misled -- mislead by Charles Cox. I have to say
18 that.

19 Q Are you through, Mrs. Meng?

20 A Huh?

21 Q Are you through with your answer?

22 A Yes.

23 MR. HEWITT: I move to strike it. I claim
24 the attorney-client privilege with respect to those
25 portions relating to Mr. Cox. I move to strike it to

1 the extent that it's nonresponsive.

2 Q (By Mr. Hewitt) Mrs. Meng, next question. I
3 believe you told me earlier that your affidavit was
4 reviewed by your attorney, Jim Carmady?

5 A Yes.

6 Q Mr. Carmady didn't see anything wrong with that
7 word "lie," did he?

8 A (Witness shook head in the negative.)

9 Q Thank you. My question was, however: Did you,
10 in making the statement that all the other statements in
11 the deposition are true, did you review the deposition
12 in making that statement?

13 A With Alabama?

14 Q The deposition --

15 A With Alabama, right?

16 Q -- Exhibit 25. Yeah.

17 A I believe -- but not completely review that.
18 But I believe all I say is true. I have nothing to hide
19 so I believe true. I don't think I -- in deposition I
20 have been saying anything wrong and -- and make any
21 story. So --

22 Q All right.

23 A I very believe myself.

24 Q I just don't want to hear come trial that
25 there's some other statement here that you're going to

1 say is untrue --

2 MR. PERRY: Objection, form.

3 Q (By Mr. Hewitt) -- on Exhibit 25.

4 Are you going to be able to do that? Are
5 you going to do that at trial or are you going to stand
6 by this statement in your affidavit that all other
7 statements except your conversations with Dr. Chu are
8 true?

9 MR. PERRY: Objection, form.

10 MR. BEVERLY: I join the objection.

11 A Shall I answer that?

12 MR. PERRY: You can --

13 Q (By Mr. Hewitt) Answer it.

14 MR. PERRY: You can answer it if you know
15 the answer.

16 A I believe I was truly -- truly answered all the
17 questions at that time. The purpose, I just want to
18 protect UH. And if there is anything I didn't record
19 well or -- I don't know. I'm not say I have any --
20 absolutely nothing is wrong inside.

21 Q (By Mr. Hewitt) I'm sorry?

22 A That's a true possibility during the position
23 he make.

24 Q But -- I'm sorry. But the statement you made
25 here in your affidavit is that all other statements are

1 true.

2 A Yes. That's --

3 Q Is that an accurate statement or not?

4 A Huh?

5 Q Is that an accurate statement or not?

6 A I think so.

7 Q All right.

8 A But if something a mistake -- I make some
9 mistake inside, that's possible.

10 Q Right.

11 A It's not intent to be lie or truly -- untruly
12 doing. But if something I do not understand the
13 question or I also have something misunderstood, that's
14 possible. I cannot deny a hundred percent correct all
15 the things the deposition.

16 Q Then why, Mrs. Meng, do you make the statement
17 that all other statements are true and swear to it and
18 sign it --

19 MR. BEVERLY: Objection, form.

20 MR. PERRY: Objection, form.

21 Q (By Mr. Hewitt) -- if you don't think it's
22 correct?

23 MR. PERRY: Objection, form.

24 A I just want to emphasize and testify to the
25 truth this point is not right. I want to emphasize this

1 point. Maybe the way I write it may not correct. I
2 expect Jim Carmady give me advice. He did not.

3 Q Or maybe he thought it was correct?

4 A Possible.

5 MR. PERRY: Objection. Asks for
6 speculation.

7 A I want to emphasize that one.

8 Q (By Mr. Hewitt) I asked you earlier, and I just
9 want to get the answer. I'll start it again.

10 When did you first learn that Dr. Chu had
11 filed a patent application?

12 A Right after we discovered lanthanum --
13 lanthanum, repeat the result. And he was in his office.
14 He said, "Oh, I'm going to write a patent." That's --
15 he say it. But we don't know -- when and how we don't
16 know. But I heard he say he's going to write a patent.
17 He said, "You people work harder. I'm going to
18 represent people. We are going to write it." He always
19 say "we, we, we, our, our." He always say that. He
20 never say "my" patent. You know, he never say that.

21 Q (By Mr. Hewitt) Now, during this period of time
22 of the Bednorz and Müller article through the filing of
23 the last patent at the end of March 1987, there were a
24 number of papers written by Dr. Chu regarding the
25 progress and improving on Bednorz and Müller's formulas,

1 correct? Is that correct? You need to answer yes or
2 no.

3 A Repeat again.

4 Q Between the time that you received the Bednorz
5 and Müller article and the last patent application at
6 issue was filed in March 1987, in other words, from
7 about November 1 to March -- end of March 1987, Dr. Chu
8 wrote a number of papers regarding the work that was
9 done in the lab --

10 A Yes.

11 Q -- is that correct?

12 A He did write a paper.

13 Q And how -- how, if any, did you participate in
14 those papers?

15 A I was a co-author with the paper.

16 Q And did you actually write anything?

17 A No.

18 Q What did you contribute?

19 A I contributed to verify Dr. Bednorz result.

20 Q Did you --

21 A Without my verify Bednorz result, nothing you
22 can write.

23 Q Did you actually review drafts of the papers
24 before they were submitted?

25 A I cannot recall I have reviewed. Very likely

1 he would ask me about the data, about -- such as how you
2 do the sample, what temperature, what time, the -- the
3 parameter he would ask me.

4 Q Do you have a specific recollection of that or
5 you just believe it was likely?

6 A No, no. It's -- definitely -- definitely he
7 know he would make sure. He's very careful to make sure
8 the data come from me is really represented in the
9 paper. But I -- I did not review or verify why -- why
10 his paper, no, I did not do it.

11 Q Did you receive a copy Dr. Chu's draft before
12 it was submitted to the PRL publications?

13 A At that time, I cannot recall that. I cannot
14 recall do I receive it or not. The very early time
15 maybe. Later on years, yes, but I don't recall at that
16 time.

17 Q And after the various PRL publications were
18 actually published, did you read the published papers?

19 A Yes.

20 Q Did you read them shortly after they were
21 published or --

22 A Oh, yeah.

23 Q -- or much later? Shortly after they were
24 published?

25 A Correct. Sometime we have pre-print --

1 Q What?

2 A Pre-print -- print before we submit it. In the
3 division, they would print it out to us before
4 publication --

5 Q I understand.

6 A -- so we read them.

7 Q So, if I understand your testimony, you either
8 read the pre-print --

9 A Right.

10 Q -- or the published article --

11 A Right.

12 Q -- immediately after it was published?

13 A Right. Correct.

14 Q Correct?

15 A Yes.

16 Q And when you read it, did you read it from the
17 beginning to the end?

18 A Yes.

19 Q Everything in it?

20 A Yes.

21 Q Do you believe that Dr. Chu was trying to hide
22 from anyone the fact that he had filed a patent
23 application?

24 A I don't know. I cannot answer for Dr. Chu.

25 Q Well, he -- he told you he was filing for a

1 patent application, didn't he?

2 A Yes. He was in our lab. He not only told me.
3 I remember this -- maybe Pei -- Pei or someone -- I
4 didn't remember he say he's going to file the patent
5 application.

6 Q You think -- you think Pei Hor told you that?

7 A No, Pei didn't tell me. Dr. Chu said so. But
8 I think probably Dr. Pei had heard it also. He said he
9 filing our patent.

10 Q Why do you think Pei Hor had heard it?

11 A We all around. We are in the team. At that
12 time, we worked together.

13 Q And did Dr. Chu announce he was filing a patent
14 to the team?

15 A No, no, no, no. Not announce. He's -- only in
16 his office.

17 Q And you were the only one present?

18 A Yes. And I was work in the -- he's doing the
19 writing. He's the one writing most of the paper on
20 patent, so and so. He always writing and then I walk in
21 and he told me, "I'm writing the patent."

22 Q So, Dr. -- did Dr. Chu ask you to keep that
23 information from anyone?

24 A No. It's our patent.

25 Q Did you --

1 A It's our group patent. What's the secret we
2 should keep? He never said, "Oh, don't tell anyone."
3 No, he never say it.

4 Q All right. Did you ever tell anyone Dr. Chu
5 had written a patent?

6 A I don't think so, because I don't think that's
7 necessary tell anybody about it. Why should I talk to
8 other people? It's our team -- our group's meth --
9 method.

10 Q But did you ever talk to Dr. Pei Hor about it?

11 A No. We don't -- I think he know that. That's
12 what I think. And I -- if he want, Dr. Chu would talk
13 to him. I -- I did not talk to Pei about it.

14 (Exhibit.26 marked.)

15 Q (By Mr. Hewitt) I've marked this document as
16 Exhibit 26. Exhibit 26 states at the top "In the United
17 States Patent and Trademark Office Before the Board of
18 Patent Appeals and Interferences." The title is Qadri,
19 et al. v. Chu v. Beyers, et al., v. Batlogg, et al. and
20 has an Interference No. 101,981. You signed this
21 declaration June 7, 1989; is that correct?

22 A Correct.

23 Q What did you understand to be the reason that
24 you were submitting the declaration?

25 A No. I don't understand why I have to do

1 deposition.

2 Q Did you -- no, this is the declaration.

3 A Declaration?

4 Q Yeah.

5 A I'm sorry. I don't. But --

6 Q I understand.

7 A -- Cox write the declaration and asked me to
8 sign it. And I look where -- now I think that's a
9 totally -- this -- this paragraph totally wrong about
10 the procedure how to make the sample. Doesn't make
11 sense.

12 Q Paragraph 6?

13 A Yes. It talk about -- so, the sample was
14 synthesized the first time and then later on bring to
15 the furnace the second time and then possible vacuum --
16 one end vacuum pump and one end to the oxygen cylinder,
17 it's nonsense. It doesn't make sense. That indicate
18 this must be write by him, not Dr. Chu. Academically
19 it's wrong.

20 So, very obviously, I did not read it, go
21 through it. Even though you don't want to mention --
22 you don't want me to mention Charles Cox but -- but,
23 unfortunately, I have to say something.

24 1989 I come from China. In China I never
25 understand any law and patent law. Declaration, I

1 cannot distinguish declaration from deposition. I don't
2 know why he want me to do that.

3 And he bring this thing, come to me. I
4 want to read that very carefully. He said, "Oh, don't
5 worry about it. Dr. Chu go" -- just sign it. Sorry.
6 He really tell me that. I decided I trust Dr. Chu. And
7 I think everything he want me to do just for UH earn the
8 pa -- patent. That's it. But now I go through that,
9 oh, that's terribly wrong -- totally wrong.

10 Q So as I understand, your testimony is that at
11 the time that Dr. -- that Mr. Cox came out, he basically
12 suggested there was no need for you to read it for
13 accuracy --

14 A Yeah, he said --

15 Q -- just sign it?

16 A Because I take long time and I have to -- the
17 way the lawyer write things different than academic
18 science paper. He repeat them over and over. Sometime
19 I'm very confused. Okay?

20 Q But not so confused you now figured out that
21 it's wrong?

22 A Right, right. So he doesn't have patience to
23 wait for me to go through the two or three pages.

24 MR. HEWITT: Okay. I'm going to move to
25 strike your answer as being protected by attorney-client

1 privilege.

2 A Yeah, that's truly wrong. This has a lot of
3 mistake.

4 Q (By Mr. Hewitt) Did you understand at the time
5 what an interference was?

6 A Yes. Because Al -- Alabama claim the patent
7 should be theirs and UH have against them. That's
8 called interference.

9 Q Did you understand that Alabama was claiming it
10 to be theirs because Dr. Wu claimed to be an inventor?

11 A Yes. Alabama claimed to be inventor.

12 Q All right. And so did you understand that
13 Dr. Wu claimed to be an -- an inventor -- the only
14 inventor or a co-inventor with Dr. Chu?

15 A That I don't know. I only know Alabama and UH.
16 I don't know who is the inventor. How many inventors, I
17 don't know.

18 Q Okay. Now, this particular interference
19 doesn't involve -- the interference of Exhibit No. 26 --

20 A I think this is, in fact, the DuPont, right?

21 Q This is what?

22 A This one, in fact, is interference -- something
23 to do with DuPont, not Alabama.

24 Q It's not Alabama?

25 A It's DuPont.

1 Q Right. I -- I don't know if it's DuPont but --

2 A DuPont want to buy our patent. Before they
3 want to purchase the patent, they sent two scientists --

4 THE COURT REPORTER: Before they what?

5 A Before they decide to buy this patent or
6 purchase the patent -- I don't know how to say -- they
7 sent two scientists -- scientists come to -- with me in
8 my lab, work with me for almost a few days to confirm
9 what I say is correct, what they came is -- is correct.
10 And then these two gentlemen go back there.

11 I think this is for DuPont, not for
12 Alabama, because Batlogg Lab is here and Qadri --

13 Q I'm sorry?

14 A Batlogg -- Batlogg is from Bell Lab.

15 Q Right.

16 A And this one from navy -- how to pronounce it
17 Qari -- Qari --

18 Q Qadri?

19 A Qadri is from navy. So this one for Dupont,
20 not for Alabama.

21 Q All right. And -- so, you signed this
22 declaration, Exhibit 26, right? You signed it?

23 A I did sign it.

24 Q Yes. And in signing it, did you read
25 paragraph 8?

1 A I don't know. Maybe I read it. Maybe I
2 read -- I do not understand the responsibility and the
3 consequences at that time.

4 Q So, you didn't understand at that time --

5 A Yeah, no.

6 Q -- when you say, "I further declare that all
7 statements made herein" --

8 A Yes.

9 Q -- "of my own knowledge are true" --

10 A Yes.

11 Q -- you didn't understand that?

12 A I understand some of them. But I remember one
13 time when Charles Cox asked me to verify Dr. Chu --

14 THE COURT REPORTER: When who --

15 A When Charles Cox, the lawyer -- and I was --
16 asked him, "Charles, you want me to do that? Are you
17 going to sometime bring me to the court?" He said, "No,
18 no, no. No such thing. You would never go to the court
19 about. You do the fair testimony Dr. Chu point out --
20 call you and say to substitution yttrium -- lanthanum by
21 yttrium. No, no, no, you will never go to court." I
22 asked him.

23 Because I -- I did read something. I
24 understand this is something to do with the lawyer might
25 be some day I have to go to the court, something like

1 that, but I'm not quite clear. But he told me, "No, no.
2 Never have such a thing happen.

3 Q I'm going to move to strike your answer. I
4 don't believe it's responsive. And I'm going to
5 assert -- assert the attorney-client privilege over your
6 comments --

7 A Okay.

8 Q -- and we'll let the court decide. But I'm not
9 getting an answer to my question. Let me try again.

10 Did you understand as of June 7, 1993 --
11 excuse me -- June 7, 1989 what the word "true" meant?
12 You understood what that word meant didn't you, true?

13 A Yes. Yes.

14 Q And so when it says here, "I further declare
15 that all statements made herein of my own knowledge are
16 true" --

17 A Yes.

18 Q -- you understood that you had to be promising
19 that you were making truthful statements --

20 A Yes.

21 Q -- correct?

22 MR. PERRY: Objection, form.

23 Q (By Mr. Hewitt) Correct?

24 MR. PERRY: Objection, form.

25 Q (By Mr. Hewitt) You understood that?

1 A I understand that.

2 MR. BEVERLY: Lester, if you'll let me
3 know when you get to a stopping point.

4 MR. HEWITT: Yeah. We're through with
5 this exhibit. It's a stopping point.

6 A But I want to repeat again I was misled by
7 Charles Cox. I was forced to do that.

8 MR. HEWITT: All right. I move to strike.
9 We'll claim an attorney-client privilege. We're
10 stopping for the day.

11 THE WITNESS: Okay.

12 THE VIDEOGRAPHER: This marks the end of
13 tape No. 3. The time is 4:33 p.m. We're off the
14 record.

15 (Proceedings concluded at 4:33 p.m.)

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I declare under penalty of perjury that the foregoing is true and correct.

RULING MENG

SUBSCRIBED AND SWORN TO BEFORE ME, the undersigned authority, by the witness, RULING MENG, on this the ____ day of _____, _____.

NOTARY PUBLIC IN AND FOR

THE STATE OF _____

My Commission Expires: _____

1 STATE OF TEXAS
2 COUNTY OF HARRIS

3
4 REPORTER'S CERTIFICATE
5 ORAL VIDEOTAPED DEPOSITION OF RULING MENG
6 May 12, 2010
7

8 I, the undersigned Certified Shorthand Reporter in
9 and for the State of Texas, certify that the facts
10 stated in the foregoing pages are true and correct.

11 I further certify that I am neither attorney or
12 counsel for, related to, nor employed by any parties to
13 the action in which this testimony is taken and,
14 further, that I am not a relative or employee of any
15 counsel employed by the parties hereto or financially
16 interested in the action.

17 SUBSCRIBED AND SWORN TO under my hand and seal of
18 office on this the _____ day of _____,
19 _____.

20 _____
21 Shirlee (Sasi) Romney, CSR
Texas CSR 975
22 Expiration: 12/31/2011
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713.426.0400
25

1 IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS

2 HOUSTON DIVISION

3 PEI-HRENG HOR)
Plaintiff,)

4)

vs.) CASE NO. 4:08-cv-03584

5)

CHING-WU "PAUL" CHU,)
6 Defendant)

7
8 VOLUME 2

9 ORAL VIDEOTAPED DEPOSITION

10 RULING MENG

11 May 13, 2010

12
13 ORAL VIDEOTAPED DEPOSITION OF RULING MENG, VOLUME 2,
14 produced as a witness at the instance of the Defendant
15 and duly sworn, was taken in the above-styled and
16 numbered cause on the 13th day of May, 2010, from
17 9:44 a.m. to 4:50 p.m., before Shirlee (Sasi) Romney ,
18 Certified Shorthand Reporter in and for the State of
19 Texas, reported by computerized stenotype machine at the
20 offices of Akin, Gump, Strauss, Hauer & Feld, 1111
21 Louisiana Street, Suite 4400, Houston, Texas, pursuant
22 to the Federal Rules of Civil Procedure and the
23 provisions stated on the record or attached hereto.

24
25

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ALSO PRESENT:

Mr. Pei-Hreng Hor
Mr. Brandon Good, Videographer

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1 THE VIDEOGRAPHER: Going on the record.
2 Today's date is May 13th, 2010. The time is 9:44 a.m.
3 This marks the beginning of videotape No. 1, Volume 2 in
4 the deposition of Ruling Meng taken in the case of
5 Pei-Hreng Hor versus Ching Wu "Paul" Chu, Civil Action
6 No. 4:08-CV-3584 held in the United States District
7 Court for the Southern District of Texas, Houston
8 Division.

9 This deposition is taking place at 1111
10 Louisiana Street in Houston, Texas. The videographer
11 today is Brandon Good of Merrill Legal Solutions located
12 at 315 Capitol Street in Houston, Texas. The court
13 reporter is Sasi Romney. Counsel please introduce
14 yourselves and whom you represent for the record.

15 MR. PERRY: Brent Perry here representing
16 intervenor, Ruling Meng.

17 MR. BEVERLY: Jay Beverly representing
18 plaintiff Pei-Hreng Hor.

19 MR. HEWITT: Lester Hewitt and Rehan
20 Safiullah representing Dr. Chu.

21 RULING MENG,
22 having been previously duly sworn, testified as follows:

23 EXAMINATION

24 BY MR. HEWITT:

25 Q Good morning.

1 A Good morning. Before you ask me a question,
2 do -- I have a request. Okay?

3 Q You have what? I'm sorry?

4 A I have a request. I would like to restate the
5 last question yesterday you asked me. Because I think I
6 must be misunderstood. So, can you restate the question
7 yesterday you asked me, last question?

8 Q Well, of course, I don't remember that offhand.

9 A Okay. You asked me --

10 Q Perhaps --

11 A -- in my affidavit, page 5 --

12 Q Okay.

13 A I said in -- in -- in my deposition, okay, I
14 was testifying Dr. Chu has called me and told me about a
15 substitution of lanthanum with yttrium. And I don't --
16 I do not -- I -- I feel very uncomfortable about this.
17 But I think I did it for UH.

18 Beside this, all of my other statements is
19 100 percent true. So, are -- you refer to that
20 deposition I make with Alabama, right?

21 Q Of course.

22 A Okay. I understand. Yesterday a little bit
23 misunderstood. I thought that was my declaration.
24 No -- now, I want to do a little bit correction about
25 the answer yesterday.

1 Q Go ahead.

2 A As -- as I understand this deposition, the
3 purpose is only to establish the concept --

4 THE COURT REPORTER: Only to what?

5 A Want to --

6 MR. HEWITT: Establish.

7 A -- establish the concept of a substitute of
8 lanthanum by yttrium is from UH, not from Alabama.

9 And, furthermore, they want the testimony
10 is Dr. Chu bring this concept first in the group. I
11 think that's the important fact for this deposition, for
12 the -- for the -- in fairness.

13 And, also, we want to indicate we already
14 start to make for the yttrium sample before Mau Kwen was
15 coming. Mau Kwen come at the end of January. So, we
16 start to work something in mid January because in my
17 deposition I have numerous times point out Dr. Chu have
18 called me in mid December 1986. This is not true.
19 Okay?

20 But there's many times in -- in the
21 deposition I was -- sometime Charles Cox was -- lead me
22 to answer the question: Did Dr. Chu ask you? And I
23 said yes, Dr. Chu called me in mid December and so and
24 so. This is not true.

25 The second thing is I mention sometime we

1 have to do some -- make some experiment or calculation
2 in mid January about something related with yttrium.
3 That's not really true, either.

4 I did do the calculation, but I don't
5 think I made any sample yet because I don't have the
6 material. But, however, I also point out a couple of
7 times in this deposition, say, "We did not really start
8 yttrium sample making yet," this statement. That's true
9 statement. We did not really start before end of
10 January. Did I -- do you understand?

11 Inside I have a couple of times I mention
12 we have -- do the calculation, also, make a few sample
13 around mid January. That's not really true. But in the
14 same time in here, I also fairly confirmed, so we
15 actually did not really start working on yttrium yet
16 until the end of January. That's true. And that's the
17 thing I want to correct.

18 Yesterday you asked me "the other things
19 are true? That's -- and also very interesting is I did
20 not realize that many statements in this deposition
21 emphasize Dr. Chu direct me or call me and tell me the
22 composition, tell me do the sample. I was working
23 completely under Dr. Chu's super -- supervision. That's
24 not true, either. Because at that time, I did not
25 realize the result -- how it affect for my deposition is

1 turn to myself into one pair with him, with Dr. Chu,
2 which I did not realize it until recently I understand.
3 I looked at it. Oh, yes, because the doctor tell me to
4 do everything, composition, replace element. So, of
5 course, we just repeat him. I did not realize this
6 effect -- effect.

7 So if you use this deposition, you can
8 identify Ruling is a pair of hand. That's not true,
9 either.

10 THE COURT REPORTER: Ruling is what?

11 A Is one pair of hand. Only one pair of hand.
12 Just if someone asks you to do something, to do it. You
13 are not a scientist. You are not independent as
14 material scientist. From that deposition, the implicate
15 is like that. I did not realize it -- that before. But
16 now I realize it so I would say that's not true either.
17 Okay.

18 Q (By Mr. Hewitt) Mrs. Meng, in the deposition of
19 Exhibit --

20 A Look page 33.

21 Q -- 25, why did you state so many lies, then?

22 MR. BEVERLY: Objection, form.

23 MR. PERRY: Objection, form.

24 Q (By Mr. Hewitt) Why? Why did you lie?

25 A For example, what?

1 Q Just what you said, all the statements you said
2 were not true.

3 A It's not so many lie. They're all the same
4 thing because I have to testify Dr. Chu tell me.
5 Dr. Chu have the idea. Come back to just one thing.
6 It's not so many.

7 Because different time, different
8 location, I have emphasized Dr. Chu called me. Dr. Chu
9 point out I do that. It's the same. Because for
10 Charles Cox told me if I do not never -- verify Dr. Chu
11 bring this idea to UH, we will lose the patent. And
12 Dr. Chu is our representative. We are the team.

13 I do not consider that's a lie at that
14 time. You next question is why I lie. I'm not
15 intention to hurt anyone. I just want to protect UH.
16 Not only that, I do not realize that Cox lie. Because
17 he's our representative.

18 Q I'm sorry. You don't realize who lied?

19 A I don't think that's lie at that time. I think
20 that's -- I know it's not really true but I think -- he
21 represent us. He's our representative. Of course, he
22 said Dr. Chu is not really something wrong. Okay?

23 Q I don't -- I don't know what you said. I'm
24 sorry?

25 A I think Dr. Chu is -- represent our group. So,

1 if I point out Dr. Chu have this idea, it's good for UH.
2 It's necessary for UH to earn this patent. That's what
3 Charles Cox told me. And then I don't think it's
4 something -- wrong thing and lie. I did not think
5 that's -- that what I'm doing at that time. I did not
6 say -- I never say many lie.

7 In the whole deposition there's only
8 thing -- the same -- identical the same thing, Dr. Chu
9 called me in mid December. That's the only one. Why
10 can you say I have so many lies?

11 Q Well, you're also saying that all the times in
12 the deposition where you said that you were working
13 under Dr. Chu's supervision, aren't you saying that's
14 untrue also?

15 A It's the same purpose. Because I do not
16 understand.

17 Q Just answer my question, Mrs. Meng.

18 A Okay. I did say that because I do not --

19 Q I didn't ask you why you said it.

20 A Say it again.

21 Q Are you saying today that the statements that
22 you made regarding being under Dr. Chu's supervision
23 were untrue?

24 MR. PERRY: Objection, form.

25 A Okay. Let me put it in this way.

1 Q (By Mr. Hewitt) No --

2 A I answer --

3 Q Answer yes or no.

4 A It's untrue.

5 Q Thank you. That's my only question to you.

6 A Untrue.

7 Look at page 33. I have stated the
8 yttrium substitute idea was from a member of our group.
9 43 -- 44 -- 43. That is true.

10 Q And I'm sorry. What are you saying is true?

11 A Who brought the yttrium substitute --

12 Q Who had the idea --

13 A -- concept.

14 Q -- you mean?

15 A Yes. And I say the member in our group. And
16 they asked me the discussion, "Was Dr. Chu there?" I
17 said "No." And, "Is it my idea?" I said "no."

18 So the meeting contained only Mau Kwen Wu,
19 Pei Hor and me. I remember Gao Li but he said he didn't
20 remember. He student at that time. That's true because
21 it's not Dr. Chu.

22 Q Have you spoken to Li Gao since then?

23 A No. I never.

24 Q So, if I understand what you're saying, what is
25 true in your deposition is that someone from the

1 University of Houston first made the suggestion of
2 yttrium at that meeting?

3 A Correct.

4 Q But all the statements in your deposition
5 regarding Dr. Chu's instructions to you were untrue?

6 A In mid-December. At mid-December.

7 Q Yes. Those were untrue?

8 A Yes.

9 Q And all the statements made in the deposition
10 where you said you were working under Dr. Chu's
11 supervision were untrue?

12 MR. PERRY: Objection, form.

13 A What we call supervision, as I stated yesterday
14 he's my boss. Okay?

15 Q (By Mr. Hewitt) Well, what did you think the
16 word "supervision" meant at the time?

17 A At that time, my understanding of boss is
18 super -- su -- supervision. But now I understand that
19 is not -- we are equal. He's a colleague. We have our
20 own expertise, so I work with him as a team.

21 Now, that's my understanding. If you
22 consider boss supervision, yeah, I don't have anything
23 to say.

24 Q And I notice in Meng Exhibit 25 that you had an
25 opportunity to review your deposition, correct?

1 A For this one?

2 Q Yes. You had an opportunity to review and
3 correct it?

4 MR. PERRY: Objection, form.

5 Q (By Mr. Hewitt) Let me put in front of you
6 Exhibit 25, Ms. Meng.

7 A Yes. I -- I --

8 Q On page called --

9 A I understand what you say. Don't show me. I
10 know it.

11 Q Well, I'm going to show it to you anyway.

12 MR. PERRY: No, let him -- let him show it
13 to you.

14 Q (By Mr. Hewitt) This is the amendment sheets.

15 A Yeah.

16 Q You had an opportunity to correct your
17 deposition, didn't you?

18 A I do not remember. Maybe.

19 Q Well, who --

20 A Because it's so long. I signed it.

21 Q You signed it?

22 A But so long deposition, did I go through that
23 or not --

24 Q You signed --

25 A Even I signed it.

1 Q You signed --

2 A Yeah.

3 Q -- four pages of corrections, didn't you?

4 A I don't remember as I look over it, no.

5 Q There's page 4 of 4, correct?

6 A Yeah. I didn't read that.

7 Q That's your signature on --

8 A I know it's my signature.

9 Q -- page 4; isn't it? Page 3, is that your

10 signature?

11 A I know.

12 Q Page 2, is that your signature?

13 A I never look --

14 Q Yes or no.

15 A Yes, that's my signature.

16 MR. PERRY: She's already said it's her

17 signature.

18 Q (By Mr. Hewitt) Page 1, is that your signature?

19 A Yes.

20 Q All right.

21 A Yes.

22 Q Now, at the time you made these corrections --

23 MR. PERRY: Objection, form.

24 Q (By Mr. Hewitt) -- were you --

25 MR. HEWITT: What's your objection?

1 MR. PERRY: She -- she testified that she
2 doesn't remember doing this, and your saying "at the
3 time you made these corrections."

4 MR. HEWITT: Well, I'm going to ask her a
5 follow-up question. She might remember more.

6 MR. PERRY: Well, then --

7 MR. HEWITT: I will.

8 MR. PERRY: -- ask her what she
9 remembers --

10 MR. HEWITT: Thank you. I will.

11 MR. PERRY: -- before you start assuming
12 things that she hasn't testified to.

13 MR. HEWITT: I'll ask the questions in my
14 own way. Thank you.

15 MR. PERRY: Then I'll object in my own
16 way.

17 MR. HEWITT: Well, as long as you object
18 to form, that's fine.

19 MR. PERRY: That's all I did.

20 MR. HEWITT: And I asked you to explain
21 it, which I got your explanation.

22 MR. PERRY: Okay.

23 Q (By Mr. Hewitt) Mrs. Meng, do you have any
24 recollection of actually sitting down and reading the
25 deposition and making any corrections to it?

1 A No.

2 Q Do you believe that someone else made these
3 corrections?

4 A Likely.

5 Q You think somebody else other than you made the
6 corrections?

7 A Might be Charles Cox. At least I would not
8 really go over them. I have not.

9 Q You have not what?

10 A I have not had chance to really go over all the
11 deposition. And these four pages, I don't remember I
12 have written. I even don't recall I saw these four
13 pages. Yes, I signed it. Doesn't mean I have go over
14 them.

15 Q Okay.

16 A Maybe somebody go over them and I just signed
17 it.

18 Q Do you specifically recall today that Charles
19 Cox actually made these corrections?

20 A I don't know who, but I definitely didn't read
21 this thing before. I even didn't see these four pages
22 but I signed it so I cannot say anything. That's my
23 signature, right.

24 Q All right. Do you have anything else you want
25 to discuss, Mrs. Meng, before I get started?

1 A I do have require. Because I think how can
2 miss my 200 critical important lab book. Okay? Because
3 as a lawyer, you always find evidence -- evidence. I
4 would like to require the evidence to let me believe
5 there's -- later was missing until now. At least to
6 show me how and who, when. I don't understand.

7 I remember they handle this thing very
8 carefully. Each time Charles got delivered anything to
9 my lab or he wanted to pick up something from my lab, he
10 always send a person directly deliver to me, put in my
11 hand. So as a law firm used to handle this very, very
12 carefully, how can the missing for 200 most critical
13 time period or -- or important data I was confused. I
14 don't know if the -- the firm had been aware -- alarmed
15 about that and do some investigation. So how that
16 happen? I want to have the evidence. That's No. 1.

17 No. 2, I need explanation why --

18 THE COURT REPORTER: You need what?

19 A Explanation -- why the firm want to keep the
20 copy instead of keep the originals, the 200 pages? You
21 do have a copy. Why the firm want to keep a copy, not
22 keep the original? That's one question.

23 If you do not have original, how do you
24 make the copy? And why you want to make the copy? Who
25 made the copy? Why did they make a copy? Even

1 though -- I don't know if something happen, you know, I
2 cannot say because I don't have any clear evidence. But
3 I also very confused for me, puzzled. I hope that --
4 that's two of my require.

5 Q Well, I'm not on deposition, Mrs. Meng.

6 A Huh?

7 Q I'm not here to be deposed. I'm sure your
8 questions will be answered by someone.

9 A Okay.

10 Q However, with respect to the copy of the lab
11 notebook, have you, yourself, read over the lab
12 notebook?

13 A Say it again.

14 Q Yes. With respect to the lab notebook itself,
15 have you read over the copy of it?

16 A When? When?

17 Q At any time.

18 A Yes, I come to your office and copy -- your
19 people have copied it for me.

20 Q All right. And after you received that copy --
21 excuse me. First of all, when was that?

22 A I believe around the time I go to Jim Carmady.

23 Q Okay. So, around 2006?

24 A Around that time because before I never pay
25 attention of it.

1 Q All right. So after you received the copy, did
2 you read it?

3 A Not really. There's two -- few thousand. I
4 don't really read it page by page.

5 Q Have you read it since?

6 A I read them -- some of them but not all of
7 them. I only read the part I needed because during the
8 time my lawyer help me to prepare the presentation. So,
9 we -- according to the '866 patent -- '866 patent and
10 the claim number 1, number 10 was based on the require,
11 I look at that part. I do not go over all of them.

12 Q In the parts of -- is that true still today?
13 You haven't read the entire copy of the notebook?

14 A I do not look whole -- very careful every page,
15 no. But I do read it. Otherwise, I cannot prepare the
16 presentation.

17 Q Is -- Mrs. Meng, is there anything that you
18 believe is missing from the copy that you believe should
19 have been in there?

20 A I don't know. I don't know. I just wondering
21 why it would happen.

22 Q All right. So as I understand your testimony,
23 as of today --

24 A I little bit doubt, particularly something --

25 MR. PERRY: Let him -- let him finish his

1 question.

2 A Sorry.

3 Q (By Mr. Hewitt) As I understand your testimony
4 as of today, you haven't found anything missing from the
5 copy that you believe was in the original and is not in
6 the copy; is that correct?

7 A No, I didn't find anything yet.

8 (Exhibit.27 marked.)

9 Q (By Mr. Hewitt) I'm going to hand you what's
10 been marked as Exhibit 27. Exhibit 27 is entitled The
11 Declaration of Ruling Meng. The title is in the United
12 States Patent and Trademark Office before the Board of
13 Patent Appeals and Interferences. The title on the left
14 side I'm reading, if you read with me, is Wu, et al.,
15 versus Chu.

16 MR. BEVERLY: Are these our copies here?

17 MR. HEWITT: I'm sorry.

18 MR. BEVERLY: No. 27?

19 MR. HEWITT: Yes.

20 A What's your question?

21 Q (By Mr. Hewitt) I'm asking you -- you see the
22 title Wu, et al., versus Chu on the left side at the
23 top? Right here on the left side. Wu, et al. versus
24 Chu? Do you see that?

25 A Well, I see that now.

1 Q You do see it?

2 A Now.

3 Q All right. What do you understand the word "et
4 al." to mean?

5 A Et al., that means beside Wu there's someone
6 else.

7 Q All right. Did you understand et -- the
8 meaning of et al. in 1993 when you signed this
9 declaration?

10 A No, I did not pay attention about that.

11 Q Did you understand that there was more than one
12 person on Dr. Wu's side at the University of Alabama
13 that claimed to be an inventor?

14 A I did not pay attention about that.

15 Q You didn't pay attention?

16 A No, I don't even look at that.

17 Q Did you understand in 1993 what et al. meant?

18 A I don't -- I do, but I did not pay attention
19 about that.

20 Q All right. Let me ask you to turn to
21 paragraph 4 on page 3. Let me know when you've read
22 that, please.

23 I'm just asking for paragraph 4 at the
24 moment. Are you -- are you reading that?

25 A Oh, I was on number 5.

1 Q Paragraph 4.

2 A Sorry. I look at 3.

3 Q Paragraph 4.

4 A Okay.

5 Q Let me know when you've read it, please.

6 A Yes. Again, that's not true.

7 Q What is not true?

8 A Because directed by Dr. Chu by solid state
9 reference technique rather than by participate this
10 technique that described by Bednorz and Müller.

11 Q Is that statement untrue?

12 A Untrue.

13 Q Let's turn to paragraph 7. That's at the
14 bottom of page 4 and goes over to page 5.

15 A Paragraph 7, right?

16 Q Paragraph 7, yes.

17 A It's the same. Untrue.

18 Q All right. I understand from your testimony
19 yesterday, and just to confirm it, that he may --
20 Dr. Chu may have called you, Dr. Chu may have suggested
21 yttrium and lutetium, but you just don't remember it?

22 MR. BEVERLY: Objection, form.

23 Q (By Mr. Hewitt) Is that correct?

24 A I don't remember he suggest me to substitute
25 yttrium.

1 Q Let's turn over to paragraph 13, please.

2 That's on page 7. Would you please read that?

3 A I think this paragraph basically is the same
4 because they want to put the idea in my mouth that means
5 that Dr. Chu asked me to replace lanthanum by yttrium
6 and go for me to describe it to M. K. Wu. That's not
7 correct.

8 Q Let me get you to turn to paragraph 18 on
9 page 8.

10 MR. BEVERLY: Paragraph 18?

11 MR. HEWITT: Yes.

12 MR. BEVERLY: Thank you.

13 A I think that's the same idea as before.

14 Q (By Mr. Hewitt) And -- and also untrue.

15 A Yes. Dr. Chu did not ask me to do that sample,
16 just not at that time.

17 Q Was this declaration prepared by Mr. Cox, this
18 declaration, Exhibit 27?

19 A I don't know who prepared it.

20 Q All right. Did you meet with any attorneys
21 other than Charles Cox?

22 A No.

23 Q Do you recall whether or not you met with
24 Mr. Cox -- if you met with -- first of all, do you
25 recall if you met with Mr. Cox with respect to the

1 preparation of Exhibit 27?

2 A Say that again.

3 Q Yeah. Do you recall meeting with Mr. Cox with
4 respect to his preparation or someone's preparation of
5 Exhibit 27?

6 A I still confused what you want to ask me.
7 Charles Cox talk to me I need to do the deposition.
8 Okay?

9 Q No, I'm asking about this declaration now. And
10 my question to you is very precise.

11 A Yeah, say it --

12 Q I'll try --

13 A -- again, please.

14 Q I'm try again.

15 A Sorry.

16 Q Did Dr. -- do you recall if Charles Cox met and
17 discussed the issues with you before he provided you
18 this declaration of Exhibit 27 to sign?

19 A He did not discuss that with me. He did bring
20 the document for me to sign.

21 Q I see. And is your recollection that you
22 signed the document in front of Mr. Cox?

23 A I don't remember. Must be him. Nobody else I
24 have met.

25 Q You don't remember?

1 A It must be him because I never met any other
2 lawyer.

3 Q I -- I'm not asking you to draw a conclusion.
4 I'm asking whether or not you remember signing
5 Exhibit 27 in front of Mr. Cox.

6 A I don't remember. I cannot answer yes or no.

7 Q All right. I've marked as Exhibit 28 another
8 declaration of Ruling Meng. Let me get you to turn --
9 well, first of all, do you have any recollection of
10 reading and signing this declaration of Exhibit 28?

11 A I don't remember this declaration --
12 declaration --

13 Q Would you look at page 11 and tell me -- tell
14 me if that's your signature.

15 A Which one?

16 Q Page 11, please.

17 A Yes, that's my signature.

18 Q And is that your handwriting as to the date?

19 A Yes.

20 Q If you'll look at page 4, paragraph 7, which
21 bridges to page 5, if you'll please read that and I'll
22 ask you a question about it.

23 A I think this paragraph identical, the same in
24 other deposition.

25 Q Yeah. And my question is: Are the statements

1 made there about the call from Dr. Chu --

2 A It's untrue.

3 Q -- untrue?

4 MR. PERRY: Les, this is the same
5 declaration.

6 MR. HEWITT: I'm sorry?

7 MR. PERRY: I think this is the same
8 declaration.

9 THE WITNESS: Yes.

10 MR. HEWITT: Oh, I had two copies of it?

11 MR. PERRY: I think so.

12 MR. HEWITT: Oh, okay. Let me just see
13 here.

14 MR. PERRY: They're both dated
15 February 22. They at least match up if you match up the
16 last number on the page.

17 MR. HEWITT: It had a different number.
18 All right. I'm sorry.

19 MR. PERRY: That's okay.

20 MR. HEWITT: I've got so many of them.
21 Let me just withdraw 28, then, and I'll get a new 28 and
22 we'll start again.

23 MR. BEVERLY: That's fine.

24 (Exhibit.28 marked.)

25 Q (By Mr. Hewitt) All right. Starting all over

1 on Exhibit 28. Let me hand you --

2 THE VIDEOGRAPHER: Mr. Hewitt, your
3 microphone.

4 Q (By Mr. Hewitt) Starting all over with
5 Exhibit 28, I've handed you another Declaration which
6 I've marked as Exhibit 28. Once again, this declaration
7 is in the Wu v. Chu Interference. Do you see that?

8 A Yes.

9 Q Are you reading the front page?

10 A Yes.

11 Q Okay. As --

12 A What do you want?

13 Q As you -- as you see, on the left side under
14 what's called sometimes the style, Wu, et al. versus
15 Chu --

16 A I see it now.

17 Q Yes. All right. And as I understand from your
18 prior testimony, you understood at the time what et
19 al -- the word et al. meant, correct?

20 A Yes.

21 Q But you didn't appreciate that in this context
22 it meant more than one inventor?

23 A I did not pay attention to that.

24 Q And if you'll turn to the third page, please.
25 This declaration was signed December 4th, 1990, correct?

1 A Yes.

2 Q And is that your signature?

3 A Yes.

4 Q Is that your handwriting for the December 4?

5 A Yes.

6 Q Do you recollect whether or not this
7 declaration was prepared by Mr. Cox?

8 A Either Cox or Chu.

9 THE COURT REPORTER: Who?

10 A Either Cox or Dr. Chu. I don't know who wrote
11 it.

12 Q (By Mr. Hewitt) And with respect to
13 paragraph 2, would you tell me whether or not the
14 reference to the telephone call in mid December is true
15 or untrue?

16 A Untrue.

17 Q And with respect to the other statement made in
18 paragraph -- I'm sorry. With respect to paragraph 3,
19 would you read it, please. Paragraph 3 bridges page 1
20 and 2.

21 A Untrue, just like the other deposition in the
22 similar paragraph. The untrue is the concept we did
23 describe to it Mau Kwen Wu. That's true.

24 Q All right.

25 A However, this concept is not call by -- at

1 least by Dr. Chu call me, tell me how to substitute
2 selenium and then I describe it true -- true, Mau Kwen
3 Wu. That's untrue.

4 Q Okay. So, if I understand what you're saying,
5 with respect to Exhibit 28 and paragraph 3, to the
6 extent the statement is made that someone from the
7 University of Houston at this meeting with Dr. Wu in
8 late December or before January 4, 1987 described or
9 suggested the use of yttrium, that that's a true
10 statement, correct?

11 A That's right. Because I know this concept from
12 UH.

13 (Exhibit.29 marked.)

14 Q (By Mr. Hewitt) I'm now handing you what I've
15 marked as Exhibit 29, which is another of your
16 declarations. This declaration is in a different
17 interference, Chu versus Gopalakrishnan, et al., and
18 versus Maeda, et al.

19 Do you have any recollection of
20 understanding that there was even another interference
21 ongoing at the time?

22 A I did not realize this. I do not remember this
23 one. Who is this two persons come from, I don't know.

24 Q Who is what?

25 A I do not remember these two gentlemen, which

1 organization or university they represent. I don't
2 remember at all.

3 Oh, yes, I understand that. That is a
4 different story. That's bismuth system. It's not YBCO.

5 Q All right.

6 A And I have -- yeah, yeah, that's bismuth --

7 Q All right.

8 A -- so it has nothing to do with YBCO. You
9 understand? This is another superconducting system.

10 Q Yes, ma'am. I'll ask the questions, please.

11 A Yes.

12 Q We'll let the judge decide what's relevant --

13 A Okay.

14 Q -- and not relevant.

15 A Okay.

16 Q Turn to page 4, please.

17 A Page what?

18 Q Page 4.

19 A Okay.

20 Q I just want to confirm that that's your
21 signature and you wrote in the date; is that correct?

22 A Correct.

23 Q And, also, I see on page --

24 A 3 in my handwriting.

25 Q 3? There's a correction that was made by you

1 and your handwriting showing a date of 3/27/1991,
2 correct?

3 A Correct. That is for confirm --

4 THE COURT REPORTER: That is what?

5 A For -- to confirm one of the declarations I
6 haven't read them because it's all -- it's totally wrong
7 write by Charles Cox. I didn't do any correction. But
8 this one I did read it so I did the corrections.

9 Look at this. This is bismuth, not YBCO.
10 See? That's bismuth --

11 Q Yes, I understand. Thank you.

12 Let me get you to look at Exhibit 3 again.
13 This is the Bednorz and Müller article that we
14 testified -- that you testified to yesterday.

15 A You -- you want me to look at the article?

16 Q Yes. It will be Exhibit 3.

17 A This one?

18 Q Yes. I had another question about that.

19 A Uh-huh.

20 MR. BEVERLY: Is this previously marked
21 as --

22 MR. HEWITT: Pei Hor's exhibit.

23 MR. BEVERLY: -- Pei Hor Exhibit 3?

24 MR. HEWITT: Yes.

25 Q (By Mr. Hewitt) Let me get you to turn over to

1 the conclusion, please.

2 When you received the Bednorz and Müller
3 article all the way back in 1986, you read that article
4 at the time; is that correct?

5 A Yes.

6 Q Have you had a chance to read the entire
7 article since then?

8 A Oh, yes. Since 1986?

9 Q Yes.

10 A I don't know about later on. At the very
11 beginning, of course, I read it.

12 Q Right.

13 A But based on -- have I read it again? I don't
14 remember.

15 Q All right. In the conclusion, the second
16 sentence that begins with the word "samples," do you see
17 that? It says quote, "samples annealed near 900 degrees
18 Centigrade under reducing conditions show features
19 associated with an onset of granular superconductivity
20 nearly 30 K," period, end quote.

21 A Yes.

22 Q Do you see that sentence?

23 A Yes.

24 Q What does the term "reducing conditions" mean
25 to you as a material scientist?

1 A Oh, that's use a vacuum pump. Pump out by
2 vacuum.

3 Q Vacuum pump?

4 A One at -- atmosphere is normal, but you use a
5 mechanical pump to pump the air out so can you vary the
6 pressure inside, to -- to vary the content of the oxygen
7 and air, you know, in a -- in the system so they call it
8 reduced atmosphere. That's less than one atmosphere.

9 Q And that's accomplished by drawing a vacuum; is
10 that correct?

11 A Yes.

12 Q And if you'll look at Figure 2 of Exhibit 3,
13 left-hand column, the -- do you see -- do you see the
14 figure there?

15 A Which one? Figure 3, yes.

16 Q Figure 2.

17 A Huh? Figure 2.

18 Q Figure 2, yes, the left-hand side.

19 A Right.

20 Q It's -- I'm going to quote that. It says,
21 quote, "Fig. 2. Low temperature resistivity of samples
22 with $x(\text{Ba})$ equals 1.0 annealed at O_2 partial
23 pressure" --

24 A Hold -- hold on just a minute. Which paragraph
25 are you talking -- I saw the Figure 2. Which paragraph?

1 Q The title block.

2 A Oh, okay.

3 Q Yeah. I'll try again. Quote, Figure -- Fig 2,
4 low temperature resistivity of samples with x(Ba),
5 barium, equal 1.0 annealed at O2 partial pressure of 0.2
6 bar," parentheses, curve No. 1, and 0.2 times 10 to the
7 minus four bar, parentheses, curves 2 to 7, in paren,
8 end quote.

9 Do these samples -- were these samples of
10 annealing of the compounds at a partial pressure of
11 oxygen?

12 A I think that's also considered reduced
13 atmosphere.

14 Q Also a reduced atmosphere?

15 A Reduced atmosphere.

16 Q Is the atmosphere --

17 A It's not full one atmosphere pressure.

18 Q Is the atmosphere oxygen instead of just air?

19 A Yeah.

20 MR. PERRY: Move your hand from in front
21 of your mouth.

22 THE WITNESS: Huh?

23 MR. PERRY: There we go. No, your hand
24 was blocking you.

25 THE WITNESS: Oh, okay.

1 A I can read that. After you take a break, let
2 me read that and answer your question. I haven't read
3 this page for a long time.

4 Q (By Mr. Hewitt) Sure.

5 A Thirty years.

6 Q We'll hold it right there --

7 A Uh-huh.

8 Q -- and come back to that.

9 (Exhibit.30 marked.)

10 Q (By Mr. Hewitt) I'm now handing you a group of
11 pages that I've marked as Exhibit 30. And for the
12 record, they are stamped H 471 through H 479. Would you
13 please take a look at those.

14 MR. BEVERLY: Is this a blowup which
15 you've done, Mr. Hewitt?

16 MR. HEWITT: I'm not sure. Well --

17 MR. SAFIULLAH: It might be the original
18 size.

19 MR. BEVERLY: This might be the original
20 size?

21 MR. SAFIULLAH: I'm not sure.

22 Q (By Mr. Hewitt) Do you recognize these types of
23 documents that are part of Exhibit 30, Mrs. Meng?

24 A Yeah. That's a summary.

25 Q That's a what? Sorry.

1 A Summary of the results.

2 Q Summary of the results?

3 A Uh-huh.

4 Q Summary of the results of what?

5 A Of the sample preparation, parameter and the Tc
6 measurement.

7 THE COURT REPORTER: The what measurement?

8 A Tc, transition temperature measurement.

9 Q (By Mr. Hewitt) And just so we're on the same
10 page, what does --

11 A We talk about oxygen 2 -- 2,000 micron, right?

12 Q What does Tc mean?

13 A Transition temperature.

14 Q And what does transition temperature mean?

15 A Transition temperature is a superconducting
16 material. In certain temperature the resistance is
17 dropped to zero. We have 3. One we call onset. It's
18 beginning to drop; and the mid temperature transition
19 temperature; and the zero transition temperature.

20 Q So when you're looking at a sample and
21 measuring it -- first of all, what -- what's the name of
22 the test you're referring to?

23 A Where?

24 Q That it shows the temp -- onset temperature?

25 A I believe it's a resistance measurement.

1 Q Resistance measurement?

2 A Uh-huh. Resistivity measurement.

3 Q And how is that determined?

4 A How is that determined?

5 Q How -- what is a resistivity measurement?

6 A Well, I cannot tell you in detail. I'm not a
7 physicist, but I know the students have the equipment.
8 They put the sample in the pole, which the pole will be
9 put in a very --

10 THE COURT REPORTER: Put the sample in a
11 what?

12 A In a pole. They call -- we call pole, right?
13 P -- p-o -- just a -- a cylinder and put in low
14 temperature. And slowly we decrease the temperature so
15 we can see the resistivity as the function of the
16 temperature.

17 Q (By Mr. Hewitt) All right. And --

18 A Okay. You see the semiconductor and metal is
19 different, right? So this material is the same. One
20 you see the resistivity dropped -- continuously drop
21 with the temperature lower. But if not superconductor,
22 they never come to zero. They just straight come down
23 here, right?

24 But as a superconductor, in certain
25 temperature, we call it transition temperature.

1 Resistance certainly drop. But if the sample was not
2 very good, they might have long tail. That means onset
3 in here, and then the long tail to -- to very low
4 temperature to zero. That's not good sample.

5 Q All right.

6 A But how to measure that, I still measure -- I
7 didn't do the measurement.

8 Q All right. Let's talk about that for a moment.
9 If I understand you, then, resistivity measurements on
10 the compounds that you and your students have
11 synthesized were made by physics students rather than by
12 you?

13 A Yes.

14 Q And was that always the case --

15 A Yes.

16 Q -- through this period?

17 A Yes. I never do any measurement.

18 Q Is this your handwriting on the page?

19 A Very likely it's one of my students. Doesn't
20 look like my handwriting.

21 Q Not your handwriting?

22 A I think it's one of my students maybe, not --
23 because they help me do the -- because they write
24 0.0 very small. I don't think -- very likely it's one
25 of my students.

1 Q Now, on the -- let's talk about the columns for
2 a moment.

3 THE COURT REPORTER: The what?

4 MR. HEWITT: Columns.

5 A Yes.

6 Q (By Mr. Hewitt) Look at the columns. The
7 left -- the left - very left column says "N-o." Is that
8 for number?

9 A Yes. Label.

10 Q And then --

11 A Sample label.

12 Q Are the numbers there the labels of the various
13 samples?

14 A Yes.

15 Q I notice the first set were 1 through 9 on page
16 H 471, correct?

17 A Which one? The first one?

18 Q At the very top.

19 A Uh-huh.

20 Q And then after that, they became?

21 A J.

22 Q -- designated by "J"?

23 A Yes.

24 Q Were you the one that gave the "J" designations
25 or did a student do that?

1 A Me. Because the first set from number 1 to 9,
2 I working on 415 --

3 Q All right.

4 A Well, 113. Okay?

5 Q 415 and --

6 A Or 113.

7 Q And 415 and 113 were --

8 A Yes.

9 Q -- were compositions from --

10 A Very beginning.

11 Q -- Bed -- Bednorz and Müller?

12 A Yeah. And after phase is 214.

13 Q All right. And all the rest of the work done
14 from this very first sample J-4 throughout December was
15 nominally 214; is that correct?

16 MR. BEVERLY: Objection, form.

17 A Say it again.

18 Q (By Mr. Hewitt) Yeah. All the samples that
19 were prepared after this initial 1 through 9 --

20 A Yes.

21 Q -- all the samples prepared in December were to
22 the nominal 214 composition; is that correct?

23 A Yeah, it should be. It should be after that
24 if I find out after because -- but I have to check the
25 date. What date they start with 214?

1 Q Well, you had earlier testified -- of course,
2 you didn't testify to the date -- but that 214 became
3 the nominal formula used after Dr. Chu learned from
4 Dr. Kitazawa --

5 A Correct.

6 Q -- that 214 was actually the nominal
7 composition --

8 A Right.

9 Q -- of interest in the Bednorz and Müller --

10 A Yeah, correct.

11 Q -- is that correct?

12 A I don't remember exact date.

13 Q And then on the second page, is any of this
14 your handwriting or is this a student's?

15 A No, I think it's one student. The same student
16 write it.

17 Q Do you have any idea what student?

18 A Is -- if it's not Daniel, it would be An --
19 Andy. Very likely it's Daniel.

20 Q What's Daniel's last name?

21 A Cam -- Campar --

22 MR. BEVERLY: Campbell.

23 A Campbell.

24 Q (By Mr. Hewitt) And do you know where he is
25 today?

1 A I don't know.

2 Q Have you tried to contact him?

3 A No. Thirty years. I don't know where he is.
4 Another student we called Andy. What's his family name,
5 I don't even recall.

6 Q And let's look at the next page, H 40 -- H 473.
7 Would you tell me if you recognize that handwriting.

8 A I think the -- the same person. Three pages
9 all the same person.

10 Q And the same question for H 474.

11 A This looks like my handwriting.

12 Q And let's move over to H 476. 475 seems to be
13 blank. Whose handwriting is on 476?

14 A I think the same.

15 Q Student again?

16 A Yeah. You know it's the same as the previous
17 page.

18 MR. HEWITT: Shall we take a break?

19 MR. BEVERLY: Sounds good.

20 THE VIDEOGRAPHER: We're off the record at
21 10:45.

22 (Recess from 10:45 to 11:08).

23 THE VIDEOGRAPHER: We are back on the
24 record at 11:08.

25 Q (By Mr. Hewitt) Mrs. Meng, I had asked you

1 about the Bednorz and Müller article of Exhibit 3 prior
2 to the last break, and you suggested that you needed a
3 chance to look at Figure 2 and to the article again in
4 order to answer a question about Figure 2. Have you had
5 a chance to over the break read the Bednorz --

6 A Yes.

7 Q -- and Müller again?

8 A Yes.

9 Q With respect to Figure 2, my question was:

10 Does Figure 2 represent samples that had been annealed
11 at a partial pressure of oxygen of 0.2 bar?

12 A Correct.

13 Q All right. And just in terms of the
14 temperatures of annealing, the temperatures of annealing
15 are shown by curves 1 to 7; is that correct?

16 A Yes.

17 Q And those temperatures --

18 A And time -- temperature and time.

19 Q And time. And the temperatures, three of them
20 look to be in the 900s, and one is 1,040 Centigrade,
21 correct?

22 A Yes.

23 Q And the times vary from --

24 A Fifteen minutes.

25 Q -- fifteen minutes to two hours, correct?

1 Excuse me. Twelve hours?

2 A Twelve hours, yes. Correct.

3 (Exhibit.31 marked.)

4 Q (By Mr. Hewitt) Now, I'm going to give you a
5 new exhibit which I've marked as Exhibit 31. Exhibit 31
6 is a two-page exhibit bearing H numbers H 1134 and 1340.

7 A Uh-huh.

8 Q The first page of Exhibit 31 has a title of lab
9 data --

10 A Uh-huh.

11 Q -- dates February 10, 1987 through April 30,
12 1987 --

13 A Uh-huh.

14 Q -- and the statement "maintain chronological
15 order." Do you know who wrote that?

16 A I believe it was Jeff Bechtold.

17 Q Who?

18 A Jeff Bechtold, one of our graduate students
19 because he always very good organizer.

20 Q (By Mr. Hewitt) Seth?

21 A Jeff.

22 MR. BEVERLY: Jeff.

23 A J-e-f-f Bechtold.

24 MR. BEVERLY: Has this been produced
25 before?

1 A He's the one that put all the data together.
2 The other students just kind of sloppy, so that's why I
3 get Jeff Bechtold.

4 Q (By Mr. Hewitt) I see.

5 MR. HEWITT: Did you yes or no?

6 MR. SAFIULLAH: Yes.

7 MR. BEVERLY: This has been produced? I
8 don't think I've ever seen it before today.

9 MR. SAFIULLAH: It should have been
10 produced.

11 MR. BEVERLY: It doesn't have a Bates
12 number on it.

13 MR. SAFIULLAH: Well, we got this from
14 somewhere else. It's not part of the production loop.
15 This thing is not produced.

16 MR. BEVERLY: I don't think I've ever seen
17 it before.

18 MR. HEWITT: Well, if we have documents in
19 this area regarding the lab data that have been not
20 produced, we certainly will review them and produce
21 them.

22 MR. BEVERLY: Okay.

23 Q (By Mr. Hewitt) The second page is page H 1340.
24 Turn to that page, please.

25 A Yes.

1 Q And tell me if you would, please, what this
2 page represents.

3 A I don't remember which sample, but they show
4 up -- the sample was onset -- two samples in there. One
5 sample, the onset transition temperature start from 75,
6 and zero transition temperature end at 55.

7 And second sample seems better.
8 Transition temperature start at 88 degrees and then end
9 at 59 -- at 58. Let me try to remember.

10 Before the 123, we have to do twice -- we
11 have two times see the transition temperature about 70
12 degrees. The first time was the -- look in my
13 deposition -- was what page -- I believe that sample was
14 the first time we see that but it's not stable, so after
15 we re-measure it disappear.

16 Q I may be able to help you with this. Let me
17 ask another question first and then I think I've got an
18 exhibit you can look at that will help you.

19 I take it this page H 1340 of Exhibit 31
20 is another resistivity reading; is that correct?

21 A Which one?

22 Q This page.

23 A Resistivity measurement.

24 Q And that measurement -- and so this measurement
25 would have not been made by you ---

1 A No.

2 Q -- is that's correct?

3 A No. I never do the measurement.

4 Q And it would have been made one of the
5 physics -- by one of the physics students?

6 A Very likely Jeff Bechtold. I don't -- I -- I
7 did not correct -- I recognize very clear his
8 handwriting.

9 Q Is Jeff Bechtold a physics -- was Jeff Bechtold
10 a physics student?

11 A Yes.

12 Q Okay.

13 A He was Dr. Chu's graduate student.

14 Q All right. If you will look for Exhibit 23
15 that I showed you yesterday -- this is my handwritten
16 copy -- see if you can find that over there. Perhaps
17 your counsel will help you look for it.

18 MR. PERRY: Exhibit -- which one?

19 MR. HEWITT: 23. I'll look over here.

20 A Yeah, I got it.

21 Q (By Mr. Hewitt) We had talked about Exhibit 23
22 yesterday. Do you recall?

23 A Uh-huh.

24 Q And Exhibit 23 on the first page was in the
25 handwriting of Mr. --

1 A Y. Q. Wang.

2 Q Y. Q. Wang. And, incidentally, Wang is
3 actually spelled W-a-n-g; is that correct?

4 A Correct.

5 Q Okay. And if you look on the first page,
6 that's H 131 of Exhibit 23 --

7 A Yes.

8 Q -- it shows two samples, 401 and 402?

9 A Yes.

10 Q Would those two numbers correlate, then, to the
11 resistivity readings on H 1340 of Exhibit 31?

12 A Yes. Yes, you are right. Yes.

13 Q And would you tell me: Do you have any
14 recollection today of reviewing -- being involved in or
15 reviewing the results of this work relating to samples
16 401 and 402?

17 A I remember this sample, the label 401 and
18 402 -- 402, but I cannot correspond it with this result,
19 with this measurement curve. Maybe I just forgot this
20 one. I remember we only saw the high temperature
21 transition -- oh, that's February -- let me see -- it's
22 February.

23 THE COURT REPORTER: It's what?

24 A It's February --

25 Q (By Mr. Hewitt) It's probably best not to talk

1 out loud because --

2 A It's Feb -- February which is after Mau Kwen
3 come.

4 Q I can't understand you.

5 A Oh, yeah. That's yttrium sample after Mau Kwen
6 was come to our lab. Mau Kwen bring his sample out to
7 our lab at the end of January, right, 29 or 30.

8 Q Are you talking about Dr. Wu?

9 A Dr. Wu, yes. And then after that, we start to
10 work with yttrium. So, this sample is from our lab,
11 correct.

12 Q Well, these documents came from your lab.

13 A Yes. February 22, yeah. Yeah, this number is
14 right.

15 Q All right. Let me ask you this question, and
16 maybe you don't know the answer but let me ask this
17 question: You have in front of you the re --
18 resistivity readings and you now know that the samples
19 401 and 402 contain respectively 0.01 gadolinium and
20 0.005 gadolinium?

21 A Yes.

22 MR. BEVERLY: Objection, form.

23 Q (By Mr. Hewitt) I'm sorry. I misread it,
24 didn't I? Start all over. That's a long question, too.

25 All right. New question. With respect to

1 Exhibit 31 and the resistivity test for samples 401 and
2 402, and looking at Exhibit 23, would you agree with me
3 that 401 contains gadolinium of 0.01?

4 A Correct.

5 Q And would you agree with me that sample 402
6 contains gadolinium of 0.05?

7 A Correct.

8 MR. BEVERLY: Objection, form to both of
9 those previous questions.

10 MR. HEWITT: All right. Did I misstate
11 something?

12 MR. BEVERLY: I think -- I -- you know,
13 whether there's an actual connection between 401 and
14 402, I'm not sure that's been established.

15 A Yes, correct.

16 Q (By Mr. Hewitt) All right. With respect to
17 these two samples and -- what do you call the small
18 amounts of gadolinium that have been put into the two
19 samples 401 and 402? Does it have a name -- scientific
20 name of any kind?

21 A Substitution partially.

22 Q Partial substitution?

23 A Uh-huh.

24 Q Is that sometimes called doping?

25 A Yeah, you can call it that, too.

1 Q Looking at examples 401 and 402 and the
2 resistivity readings --

3 A Uh-huh.

4 Q -- shown in Exhibit 31, does that tell you
5 anything about gadolinium and its use in superconducting
6 compounds?

7 MR. BEVERLY: Objection, form.

8 A For this measurement, it's very difficult to
9 tell because the physical properties, sometimes it
10 depend on only composition and doping effect. There
11 also there also can be preparation -- the -- the
12 parameter didn't up to my condition.

13 Basically pure yttrium 123 can higher to
14 94 degrees. If -- but, however, if you didn't process
15 it right, it can be 70, 88. That's -- it can vary. So
16 I cannot say this effect was by gadolinium. I cannot
17 tell you why. If I didn't properly write in the right
18 condition, it might be low.

19 Q (By Mr. Hewitt) Is gadolinium a magnetic rare
20 earth element?

21 A Yes.

22 Q Would you expect the partial substitution of
23 gadolinium into a YBCO compound to have any effect since
24 gadolinium is magnetic?

25 MR. BEVERLY: Objection, form.

1 A I cannot tell. As I told you before, magnetic
2 moment can kill superconductivity.

3 Q (By Mr. Hewitt) I'm sorry? Magnetic moment
4 what?

5 A Moment -- the material have magnetic moment --
6 magnetic material. If you put in the superconductor, it
7 might kill the superconductor.

8 Q Kill it?

9 A It kill it. It's no longer superconductor
10 anymore. However, there are some example -- exception.
11 I believe before 1984 people only found some
12 superconductor with magnetic element. Okay? Which
13 element? Let me try to remember is this one. I don't
14 want to pronunciation wrong and then -- I believe Hr
15 or -- or something. I didn't remember.

16 THE COURT REPORTER: Hr?

17 A Probably. I didn't remember very clear. So,
18 that indicated magnetic moment -- mag -- magnetic
19 material killing the superconductivity is debatable. It
20 can be -- vary. Not necessary --

21 Q (By Mr. Hewitt) It can be what?

22 A Still it's open question. Nobody said
23 absolutely right or absolutely not possible, no, you
24 cannot say that.

25 So, the doping with gadolinium, what's the

1 effect? I -- I don't -- I don't -- I don't really know
2 at that time. I just want to see they lower the
3 temperature or increase the temperature. I don't know.
4 I cannot tell you this question at that time.

5 Q I'm going to turn to another question now.

6 A Rhodium, yeah -- they have some element. But
7 you don't have to write it down. Look at Hr.

8 Q Did Dr. Hor run resistivity measurements from
9 time to time?

10 A I believe occasionally. Most of the time was
11 students do it.

12 Q Did Dr. Hor ever prepare his own samples?

13 A As I recall, he had make one sample but maybe
14 other samples I didn't remember.

15 Q What is the one sample you recall?

16 A He put -- I don't know how he prepared --
17 prepared it. I only know the result.

18 Dr. Chu was excited because we see the
19 transition drop around 70 something. And I don't know
20 how detailed he make it. I later on now understand he
21 must be have rich in copper to put material in the
22 copper for it. I don't know how he make it.

23 Q When was that sample made, if you know?

24 A In my affidavit I give it. They show -- in our
25 group we see two times high temperature about 77. The

1 first time is from his sample, and the second time was
2 from my sample. But two of them is not able -- cannot
3 repeat it.

4 Q Well, let me just mark this as Exhibit 32 and
5 see if you can identify that, please.

6 (Exhibit.32 marked.)

7 Q (By Mr. Hewitt) We are again in a notebook that
8 says "Lab Data."

9 A Yeah. I think that's the -- the same student.

10 Q That's -- you think that's Mr. Bechtold again?

11 A Yes, I believe so.

12 Q And for the record, Exhibit 32 is H 707, H 114,
13 and then H 115 and H 116. Do you know whether or not
14 any of these resistivity readings relate to the sample
15 prepared by Dr. Hor?

16 MR. BEVERLY: Objection, form.

17 A I don't remember. Maybe. I don't remember.
18 But they do say first time high Tc about 70 degrees.
19 You see 1115, they write it up there?

20 Q (By Mr. Hewitt) Yes. Is that your handwriting?

21 A Not me. I don't know who write it. But we see
22 something about 70 degree is twice before the YBCO.
23 First time is from the sample he make. So, if someone
24 write it, possibly. I don't know. I -- I don't want to
25 guess.

1 Q As of November --

2 A Oh, yeah. Look at -- look at what date.

3 Q Yeah. H 1114 is dated November 23, 1986?

4 A Yes.

5 Q And 1116 is dated November 25, 1986?

6 A That's measurement day, the day he measured the

7 sample.

8 Q The -- the day the resistivity was measured?

9 A This look like magnetic measurement.

10 Q Looks like what?

11 A Or resistivity measurement, yeah.

12 Q Which one are you looking at?

13 A No, this one, 1116.

14 Q Is -- is there --

15 A Yeah, it's resistivity measurement.

16 Q Do you know whether or not this date would

17 indicate to you that the sample was made using the

18 nominal formulas of Bednorz and Müller?

19 MR. BEVERLY: Objection, form.

20 A No. At that time we only start for 214.

21 Q (By Mr. Hewitt) Well --

22 A Huh?

23 Q -- isn't it true you didn't learn about 214

24 until December from Dr. Chu, who learned it from

25 Kitazawa?

1 A In this case must be 214.

2 Q If it's not 214, then wasn't it a nominal
3 Bednorz and Müller formula?

4 A I didn't make this sample. If it made by Pei,
5 I cannot answer your question.

6 Q All right.

7 A If this the sample, they make.

8 Q All right. Mrs. Meng, what are you seeking --
9 I'm going to ask you an entirely different question.

10 A Oh, okay.

11 Q All right. You are trying -- I understand
12 you're trying to become a co-inventor on the patents in
13 issue; is that correct?

14 A Correct.

15 Q Are you -- once you are -- if you are named a
16 co-inventor, what will you then be seeking in terms of
17 revenue, dollars?

18 A I cannot answer this -- this question. I would
19 rather to follow the politics -- the -- the principles
20 of UH. I believe they have some kind of politics about
21 the co-inventor. They should have -- I think I should
22 follow that. I cannot tell you.

23 Q All right. Do you have any -- have you heard
24 or understood that under the U of H policy, that each
25 co-inventor gets a proportional share?

1 A Yes. Because when I got the money for 137,000,
2 I think that's -- that's a co-inventor at that time.
3 And I was told the UH -- the policy would change
4 sometime. During 1986 they used to have 70 to
5 30 percent. Inventor have 70, school have 30.

6 Later on I was told -- someone told me --
7 50/50. I don't know. So, I rather ot just follow
8 the -- their policy to -- to do it. I don't have any
9 particular require.

10 (Exhibit.33 marked.)

11 Q (By Mr. Hewitt) I've marked Intervenor Ruling
12 Meng's Complaint in Intervention as Exhibit 33.

13 A Uh-huh.

14 MR. HEWITT: This is -- my comment is
15 directed to you, Mr. Perry. As best we can determine,
16 this complaint has never been filed separately as a
17 complaint.

18 MR. PERRY: You did make -- you did
19 mention that a letter the other day.

20 MR. HEWITT: Okay. I'm sorry. I guess I
21 didn't see the letter.

22 MR. PERRY: My understanding of the
23 federal procedure is that I file -- that I file the
24 intervention and then the clerk files the petition. But
25 maybe I --

1 MR. HEWITT: Well, you included an order
2 to that effect, but the judge didn't sign it.

3 MR. PERRY: Okay.

4 MR. HEWITT: So if you'll just file it,
5 we'll answer it.

6 Q (By Mr. Hewitt) However, Mrs. Meng, with
7 respect to this Intervention -- Ruling Meng's Complaint
8 and Intervention Exhibit 33, I just would like you to go
9 over --

10 Well, first of all, have you seen
11 Exhibit 33 before?

12 A Yes.

13 Q And did -- have you read Exhibit 33?

14 A Hold on.

15 Q Take your time.

16 A Should I read that?

17 Q I'm sorry?

18 A It filed by my -- my lawyer, so I have to read
19 that?

20 Q Well, my question is: Did you read it?

21 A I don't recall it, but I talked to my lawyer.
22 He have my authority to write it for me --

23 Q All right.

24 A -- represent me.

25 Q I'm not asking about the authority. I'm just

1 asking whether or not you read it.

2 Now, on page 20 -- excuse me. In
3 paragraph 20, which is page 5 of 7, I'd like to you turn
4 to that paragraph.

5 A You want me to read this paragraph?

6 Q Yes. If you would just read it, please.

7 A Yes.

8 Q The statement is made in there --

9 A Uh-huh.

10 Q -- to the effect that if you are named as a
11 co-inventor --

12 A Uh-huh.

13 Q -- you would be entitled to a proportional
14 share of revenue generated by the patent --

15 A Yes.

16 Q -- correct? Do you know what proportional
17 share means?

18 A Oh, it depend on how many percentage for each
19 co-inventor.

20 Q All right. So, if there are three
21 co-inventors --

22 A One-third.

23 Q -- it would be 33 percent?

24 A Yeah.

25 Q Do you understand the claim that's being made

1 by Dr. Hor here for compensation?

2 A No.

3 MR. BEVERLY: Objection, form.

4 Q (By Mr. Hewitt) You are aware that Dr. Hor
5 filed a grievance against the university?

6 A I aware of it but I haven't read his --

7 Q Okay.

8 A No, I never read it.

9 Q In that document --

10 MR. HEWITT: I don't have any copies of it
11 here.

12 Q (By Mr. Hewitt) But in that document, Dr. Hor
13 seeks an amount equal to 75 percent of all revenue
14 payable to the creator/inventor received to date and
15 through licensing of the patent or received by any other
16 means. In other words, Dr. Hor is claiming 75 percent
17 of the revenue.

18 A What do you want to ask me?

19 MR. BEVERLY: Objection, form.

20 A What do you want to ask me? Do you want me to
21 comment?

22 Q (By Mr. Hewitt) I'm going to -- I'm going to
23 ask you whether or not you consider that to be right --
24 fair.

25 A I have no comment because -- I have no comment

1 about that. But I --

2 Q Well, do you agree or disagree with the amount
3 of the claim?

4 MR. BEVERLY: Objection, form.

5 A I mean, I have no comment.

6 Q (By Mr. Hewitt) Well, if there are three
7 inventors and you want 33 percent, and Dr. Hor --

8 A That's my requirement --

9 Q -- and Dr. Hor wants 75 percent, and Dr. Chu is
10 still in -- in there as a co-inventor, the numbers don't
11 make sense, do they?

12 MR. BEVERLY: Objection, form.

13 A The grievance is not legally a document, right?
14 It's not like this one? Maybe that's his own thinking
15 in the grievance.

16 Q (By Mr. Hewitt) I'm just asking you whether or
17 not you believe that Dr. Hor's claim for 75 percent --
18 percent conflicts with your claim for 33 percent --

19 MR. BEVERLY: Objection, form.

20 Q (By Mr. Hewitt) -- assuming three inventors?

21 MR. BEVERLY: Objection, form.

22 A My opinion is to be fair to -- based on UH
23 policy, have proportion to distribute to all the
24 co-inventors.

25 Q (By Mr. Hewitt) All right. I'm sorry. You

1 used the word proportional, right?

2 A Uh-huh.

3 Q Would you agree with me that Dr. -- a claim of
4 75 percent by Dr. Hor would not be proportional?

5 MR. BEVERLY: I'll object to form.

6 A You asked me a question?

7 Q (By Mr. Hewitt) Yes. Would you agree with me
8 that Dr. Hor's claim of 75 percent would not be
9 considered proportional?

10 A Yes.

11 MR. BEVERLY: Objection, form.

12 Q (By Mr. Hewitt) Let me hand you what I've
13 marked as Exhibit 11 previously. Have you seen
14 Exhibit 11 before today?

15 A No.

16 Q The first page of Exhibit 11 is on University
17 of Houston letterhead. Do you see that?

18 A Yes. I have never seen this one before.

19 Q All right. It's -- it's a memo or a letter
20 dated December 22, 1998 --

21 A Okay.

22 Q -- from the University counsel to Dr. Richard
23 Van Horn. Would you look at the second page, please.
24 Let me just give you my representation of what this is.

25 A Uh-huh.

1 Q These are the payments that were made out of
2 the proceeds of the initial payment of \$1,000,500 by
3 DuPont to the university. And Dr. Chu was given
4 \$750,000. Did you know that?

5 A I know we had money. I don't know how much.

6 Q All right.

7 A Nobody know.

8 Q All right. What is shown on page 2 of
9 Exhibit 11 are the amounts of money that were paid to
10 each person.

11 A Uh-huh.

12 Q And if you look at the first page of
13 Exhibit 11, the second paragraph --

14 A Uh-huh.

15 Q -- that says, quote, "Paul's intent is to pay
16 some of his colleagues a percentage share of his share
17 of the initial DuPont proceeds," end quote.

18 A Uh-huh.

19 Q Actually, I think I had the amount wrong. It
20 says in the next sentence, "The total" -- quote, "the
21 total of Paul's share as of December 31, 19 -- 1988 was
22 accurately reflected in Sharon Richardson's memo to me
23 of December 13," colon, dollar mark "684,779.70," period
24 end quote.

25 So, page 2 represents Dr. Chu's decisions

1 as to how to share that money. And you, Pei Hor and
2 M.K. Wu each received \$137,000.

3 MR. PERRY: Objection, form.

4 Q (By Mr. Hewitt) Are you aware of that?

5 A I received \$137,000.

6 Q Yes.

7 A Correct.

8 Q Yes. And Pei Hor and M. K. Wu also received
9 it?

10 MR. PERRY: Objection, form.

11 A I don't know the other people.

12 Q (By Mr. Hewitt) You didn't know that?

13 A I -- I only confirm myself.

14 Q And --

15 A I did receive the money.

16 Q And you see the other people, then, the
17 students, Li Gao on down, including Y. Q. Wang, received
18 very small amounts, under \$10,000?

19 MR. BEVERLY: Objection, form.

20 Q (By Mr. Hewitt) Do you see that?

21 A Yeah, I see it.

22 Q Do you believe -- well, no further questions on
23 that.

24 I've got a couple of questions back to
25 some other earlier questions and then -- that I'm going

1 to ask you that I'm not sure I got an answer to before.
2 I'm not sure I asked the question.

3 Getting back to your experience prior to
4 getting the Bednorz and Müller article in the fall of
5 1996. Had you learned to synthesize superconductive
6 oxide compositions at sometime prior to that?

7 A Yes.

8 Q When was the first time that you actually
9 synthesized superconductive oxide compositions?

10 A I believe it was 1980 or 1981. Before I left
11 Houston, I prepared two samples, as I mentioned
12 yesterday, one lithium-titanium-oxide --

13 Q Right.

14 A -- one is the barium, lead and bis -- bismuth.
15 I'm not quite sure the last one. The two is oxides.

16 Q All right. What are perovskite oxides?

17 A I think that's a name for some kind of
18 structure.

19 Q Do you know what kind of structure perovskite
20 is?

21 A Basically, this structure is -- belong to cubic
22 structure or tetragonal structure.

23 Q Cubic?

24 A Yeah.

25 Q And what was the second word?

1 A Basically cubic structure.

2 MR. SAFIULLAH: Tetragonal.

3 Q (By Mr. Hewitt) And did you say the word
4 tetragonal, also?

5 A I think it's cubic structure, if I remember
6 right.

7 Q All right. Prior to coming to the university,
8 had you worked on any superconductive oxides that had a
9 perovskite structure?

10 A No.

11 Q And since coming to the university, have you
12 worked -- and prior to the Bednorz and Müller paper,
13 incidentally, had you synthesized oxide superconductors
14 that had a perovskite atomic structure?

15 A I don't remember what structure for the
16 lithium-titanium-oxide. I tell you the truth it's been
17 30 years.

18 Q Do you recall ever reading a paper by Raveau?

19 A Yes.

20 Q Do you have any recollection of how the samples
21 were synthesized by Raveau?

22 A I cannot remember, but I remember Mr. Raveau
23 about 214 structure -- talking about the 214 structure.
24 But I cannot remember now. I'm sorry for that.

25 It's -- yes, basically talk about after we

1 identify the -- the one sample, 214, I believe we looked
2 for the Raveau's paper. He talk about something related
3 to structure. I cannot remember right now.

4 THE VIDEOGRAPHER: Five minutes on this
5 tape .

6 Q (By Mr. Hewitt) When do you recall looking at
7 Raveau's paper?

8 A When?

9 Q Yes. When? Was that -- okay. You don't
10 remember?

11 A No.

12 Q Was it -- just to see if this helps you -- your
13 memory, could you have looked at Raveau's paper after
14 receiving the Bednorz and Müller article --

15 A No.

16 Q -- and when you were about to do your solid
17 state work?

18 A No. I believe it's after Dr. Chu received a
19 call -- after Dr. Chu received a call from Kitazawa
20 telling him there's a 214 structure. Maybe after that.
21 I cannot remember. I'm sorry.

22 Q Okay. During the period back from 1989 to '93,
23 when you made a group of these declarations that we've
24 talked about today --

25 A Say it again.

1 Q Yeah. Regarding the declarations that we
2 talked about today, they were all -- they were dated
3 within the range of about from 1989 to 1993?

4 A Correct.

5 Q Did you ever speak to Dr. Hor about signing any
6 of those declarations?

7 A No.

8 Q Did Dr. Hor ever tell you that signing the
9 declarations might result in you having to go to court?

10 A I did not talk to him about signing that, and
11 he did not point out signing the thing we go to court.

12 But just in -- maybe after I talk to
13 Charles Cox sometime and we just chat and talk, he
14 mentioned that -- he remind me. He say that to me.

15 Q He --

16 A He say that. He say, "Ruling you have to be
17 careful."

18 Q Mr. Cox said that?

19 A No, no. Pei Hor said, "You have to be careful.
20 In United States, you -- when you have anything to be
21 test -- testimony and have to be true; otherwise, maybe
22 sometime you -- they will take to you court.

23 That's how I asked Charles Cox.

24 Otherwise, it never occurred in my mind why scientific
25 researcher would go to court. For me, it is very

1 THE VIDEOGRAPHER: This is tape 2 in the
2 deposition of Ruling Meng. We're back on the record at
3 1:13 p.m.

4 Q (By Mr. Hewitt) Mrs. Meng, what is the -- what
5 is X-ray defraction?

6 A X-ray defraction is the method to determine the
7 crystal structure of the material. They use some kind
8 of X-ray. It's like you -- just -- I told you X-ray can
9 use many methods. They are used in manufacturing to
10 detect the defect of the metal. You can use it to look
11 at people's body and see problem.

12 The X-ray machine used in the material
13 is -- you can -- they have so many standard pattern
14 which many people already done that before. So, when
15 you get the new compound, you take the X-ray and see the
16 different pattern. You can refer to other people's work
17 that have been done before.

18 If a new one, just like -- why we see
19 also -- that's why Dr. Hazen, they have to -- to
20 determine it. But other than that, you can easily find
21 a standard reference card and to compare it with what
22 you have, so you can identify, oh, this belong to this
23 phase.

24 And then in this time if it's a
25 multi-phase you might see a lot of impurity -- impurity

1 peak.

2 THE COURT REPORTER: A lot of what?

3 A Impurity -- I mean, extra peaks. For example,
4 I made the sample lanthanum before the -- before Mau
5 Kwen's sample --

6 THE COURT REPORTER: Before what?

7 A -- Mau Kwen Wu's sample, I did do the X-ray but
8 I do not know why we still -- 123 pattern peak. I don't
9 have nothing to refer with I identify as 214. And then
10 when the pattern peak show up, I say, "Oh, that's
11 impurity." And then for the impurity, you can also get
12 the refer from -- they have standard card, X-ray book
13 standard card. You can see the copper is in peak 59
14 or -- so, you will have peaks on some way somewhere to
15 you identify it.

16 THE COURT REPORTER: Identify what?

17 A There's a standard X-ray EDS card. That's --
18 many people have do that work for a long time.

19 Q (By Mr. Hewitt) I'm not getting the word. Car?

20 A How do I say, C-a-r-d.

21 MR. BEVERLY: Card?

22 A They're standard. Yeah.

23 Q (By Mr. Hewitt) Card?

24 A Yeah. They have handbook or you can see -- you
25 can purchase it, a handbook where thousand, thousand

1 material people already identified the structure with
2 certain pattern of the peak yourself.

3 Q Patterns?

4 A Patterns. Yes. Thousands of different
5 patterns.

6 Q At the University of Houston, did -- and
7 regarding these high temperature superconductors that
8 we've been talking about, did you personally do X-ray
9 defraction?

10 A Yes, I did.

11 Q How do you go about personally doing an X-ray
12 defraction?

13 A I have to go to mechani -- mechanical engineer
14 department. They have the equipment. In the very early
15 time I think Dr. Simon Moss's group, they do the X-ray
16 for us. Dr. Simon have students of -- of -- I can't
17 remember his name. Kim something. What's the name?
18 Dr. Simon Moss is a tech X-ray for --

19 Q That's Simon Moss you're saying?

20 A Simon Moss, yes. Later on, because I have to
21 do it routinely, I cannot ask them to do it all the time
22 and so I have to go to mechanical engineering department
23 and use their machine.

24 Q And when you went to the mechanical engineering
25 department --

1 A They have X-ray machine.

2 Q Did you, yourself, use the machine?

3 A Yes.

4 Q How do you go about using the machine?

5 A Ask their permission.

6 Q I understand. But now that you're -- you have
7 permission, how do you go about using the machine?

8 A How to go about using machine?

9 Q Right.

10 A It's a very simple operation.

11 Q What it is?

12 A Well, you put your sample in. They have the --
13 how do I say -- the holder, sample holder. And then you
14 can -- there are standard methods so you can put it in.
15 You can apply -- de -- depend on the angle you want to
16 go.

17 For example, if you know your sample, the
18 pattern likely within 20 to 100 or 20 to 7, so we set
19 the angle. So, they scan them, only show the pattern
20 within this angle. And then you see the chart -- I
21 think I have one chart over there, so I took X-ray.

22 And after you have this pattern, so you
23 can kind of identify what it is this pattern, what it is
24 the main peak, the intensity of the peak compared with
25 other peaks. Mostly hundred -- they call hundred

1 percent intense and then very weak and very small.

2 So, most of the time I have to look at the
3 handbook for reference. I, myself, do not know how to
4 identify the new material structure.

5 And also, after that, you can do the
6 calculation for the parameter -- not the parameter.
7 From the letter parameter like A, B, C, so you can
8 decide this one is cubic structure, tetragonal or
9 orthorhombic --

10 THE COURT REPORTER: Or what?

11 A -- orthorhombic. That means that you can
12 determine the structure morphology belong to what, cubic
13 or --

14 MR. PERRY: Orthorhombic.

15 A Yeah. You do the lattice parameter
16 calculation.

17 Q (By Mr. Hewitt) And do you determine that from
18 a calculation?

19 A Yes. The X-ray machine have very good program.
20 You fill in the data that asks you the angle of your
21 main peak, hundred percent intense peak. And the small
22 peak, you would angle for like, 7 degrees, 35 degrees,
23 you put that in. Or you -- you also have to fill in
24 what do you expect in this material, what kind of
25 structure. If you give the wrong information, they can

1 get the wrong result. That's it.

2 Q And these angles you're referring to, are these
3 standard angles or were these angles that --

4 A No, no, no. This angle thing is a pattern,
5 show us the peak, which peak and which angle. You know,
6 like I scanning this material. I know this other
7 pattern was not over 120 or maybe it would not be lower
8 20 if I know that. Sometime I may not know that. If I
9 know that, very likely -- usually, we scan just from 20
10 to 70 degrees.

11 Q And when you went over to Dr. Simon Moss's,
12 there was a technician to do that for you?

13 A No. In fact, it's a very poor time because
14 they don't -- the machine was in the lab, have other
15 professors running the -- the mechanical testing
16 equipment. He doesn't allow -- not allow me to use it
17 daytime because they was afraid about radiation. I only
18 can use that evening by myself.

19 Q At Dr. Moss's?

20 A No. Dr. Salama.

21 Q I'm confused. When you went to Dr. Simon
22 Moss's lab --

23 A No, no, no. Dr. Simon have his own lab. In
24 the beginning, he student or staff -- I cannot remember.
25 Kim -- Kim is student. He took X-ray for us in the very

1 beginning.

2 Later on, it become kind of routine work,
3 a lot -- a lot of thing have to do it. So I have to try
4 to do it on my own. We -- our group do not have the
5 facility, so I went to Dr. Salama's lab.

6 Q That's in the mechanical engineering
7 department?

8 A Right. He's also professor in our
9 superconducting center in mechanical engineering. So --

10 MR. BEVERLY: What -- what was the name of
11 the doctor?

12 A Salama. So I use his machine and I do my own.

13 Q (By Mr. Hewitt) All right. What is the
14 Meissner effect?

15 A Meissner effect -- I think Meissner is the
16 person's name or is the first discoverer -- how can I
17 tell -- he's indicated proposal of the superconductivity
18 in this material. In -- in, fact I think this is more
19 basic important characterize the material as a
20 superconducting than the resistivity --

21 THE COURT REPORTER: More important --

22 MR. HEWITT: Characterize the material.

23 A Yeah, than the resistivity measurement.

24 Q (By Mr. Hewitt) And how is the Meissner effect
25 determined?

1 A I cannot tell you details. I'm not physics.
2 But I know what they -- what they measure that can
3 tell -- tells you the proportion of the
4 superconductor --

5 Q All right.

6 A -- material. It needs a sample. Some have
7 20 percent. Some have 70 percent. Some even less.

8 Q So, for -- if I understand your testimony,
9 then, for purposes of determining the Meissner effect
10 and resistivity, you had the physics students --

11 A Yes.

12 Q -- perform those tests?

13 A Yes.

14 (Exhibit.34 marked.)

15 Q (By Mr. Hewitt) I'm handing you the Affidavit
16 of Ruling Meng. It shows a date of May 25, 2006. 34.
17 Have you seen it?

18 MR. BEVERLY: What number?

19 MR. HEWITT: 34.

20 Q (By Mr. Hewitt) Have you seen this document
21 before today?

22 A Yes.

23 Q This is an affidavit that's signed by you on
24 the second page?

25 A Yes.

1 Q And attached to that is your tax record from
2 1988 for receipt of payment of \$137,000?

3 A Yes.

4 Q And I note that we have redacted the Social
5 Security number just as a precaution. Do you see the
6 black lines on the second page?

7 MR. BEVERLY: This one -- this one has
8 it --

9 A This one?

10 MR. BEVERLY: -- on.

11 MR. PERRY: It's not redacted on mine.

12 MR. BEVERLY: This one has it on here.

13 MR. HEWITT: Okay. But it's redacted on
14 the ones in the exhibit.

15 MR. BEVERLY: Okay. No problem.

16 A What that mean?

17 Q (By Mr. Hewitt) We just blanked out your --

18 A Oh.

19 Q -- social Security number.

20 A Oh, okay.

21 Q Mrs. Meng, let's turn to paragraph 2. Let's
22 start with paragraph 1.

23 A Uh-huh.

24 Q Paragraph 1 states that in late 1986 and
25 January 1987, Pei Hor and you collaborated at the

1 university to invent and develop high temperature
2 superconductivity technology using yttrium and known as
3 the YBCO invention, correct? Is that what it said
4 there?

5 A I think I missing one thing. I should have
6 also Dr. Chu.

7 Q But his name is not there, is it?

8 A Huh?

9 Q His name isn't there, is it?

10 A Yeah, that's wrong. I have say -- I -- I just
11 didn't realize. I only consider Hreng Pei and I as
12 co-inventor. In fact, the correct should be Dr. Chu,
13 Pei and I collaborated --

14 THE COURT REPORTER: Wait. You
15 considered --

16 A I should put that Dr. Chu, Pei, I collaborated
17 at the University of Houston to invent and develop high
18 temperature superconductivity technology.

19 Q (By Mr. Hewitt) Did you and Dr. Hor ever claim
20 that you and Dr. Hor were the only inventors --

21 A No.

22 Q -- and Dr. Chu was not an inventor?

23 A I never. I never.

24 Q Turning to paragraph 2 --

25 A So please correct this one. I'm wrong.

1 Q Turning to paragraph 2, you state that, quote,
2 "Dr. Paul Chu as group leader" --

3 A Uh-huh.

4 Q -- "assured us, Dr. Hor and me, based on our
5 actual inventive contributions, that we would be listed
6 as co-inventors on all patent applications --

7 A Uh-huh.

8 Q -- for YBCO" --

9 A Uh-huh.

10 Q -- end quote.

11 A Uh-huh.

12 Q On what occasions did Dr. Chu assure Dr. Hor
13 and you that you would be listed as co-inventors?

14 A It happened only in one time he said at a
15 meeting with Charles Cox. He say we all -- we only
16 three people there. We all is inventor. And --- that's
17 the one.

18 But later on, many, many times he talked
19 to me always relate to our patent. So, that's why I
20 understand our is our.

21 Q At any time after the meeting with Mr. Cox, did
22 you ever ask anyone if you were listed as an inventor on
23 these patents?

24 A Never.

25 Q The next sentence says, quote, "Consistent with

1 that assurance, and our inventive contributions and my
2 clear understanding, I was paid \$137,000 in 1987 by the
3 University of Houston as my initial share of licensing
4 fees paid by DuPont for the YBCO invention," period, end
5 quote.

6 Can you provide me any statements made by
7 anyone to support your contention that the payments made
8 by Dr. Chu was because you were an inventor?

9 MR. BEVERLY: Objection, form.

10 A I do not have. But the check was sent by UH.
11 The check should not pay by Dr. Chu. I saw the check
12 was from UH.

13 Q (By Mr. Hewitt) All right. Other than knowing
14 the check was from U of H, do you have any evidence
15 supporting a belief that Dr. Chu paid you that money
16 because you were an inventor?

17 MR. BEVERLY: Objection, form.

18 MR. PERRY: Objection, form.

19 A I don't have another evidence.

20 Q (By Mr. Hewitt) Did Dr. Chu ever tell you, "I
21 gave you \$137,000 because you were an inventor"?

22 MR. PERRY: Objection, form.

23 MR. BEVERLY: Objection, form.

24 A No. He said "our patent."

25 Q (By Mr. Hewitt) And you've always taken "our"

1 to be mean --

2 A That's right.

3 Q -- you, Pei Hor and him?

4 A Yes.

5 Q And you never thought that "our" could be the
6 University of Houston?

7 A No. I never thought about that.

8 Q I'm sorry?

9 A I never thought about we are not.

10 Q Do you understand that in order to assert a
11 claim of inventorship, you must be inventor of something
12 that's in the scope of the claims of the patents?

13 A Yes.

14 Q Have you actually reviewed the patents, the
15 '866 and the new patent, personally to determine claims
16 to make as inventor or co-inventor?

17 A Yes. I reviewed that with my attorney in 19 --
18 2006 with Gordon.

19 Q All right. And then --

20 THE COURT REPORTER: What was the name?

21 A Gordon. 2006.

22 Q (By Mr. Hewitt) And I'm sorry. Was that --

23 A Gordon, my lawyer.

24 MR. SAFIULLAH: Gordon.

25 MR. PERRY: Gordon.

1 MR. HEWITT: Oh, thank you. All right.

2 Counsel, I think probably the best way to
3 do this is, rather than ask her, is just to send you
4 each an interrogatory asking for the specific claims so
5 they'll be clear. I -- I don't expect her to have the
6 expertise to explain it within the context of the
7 claims.

8 MR. PERRY: That's fine.

9 MR. HEWITT: I just want to be sure you
10 both appreciate that would be a proper interrogatory and
11 answer it.

12 MR. BEVERLY: I think you've already sent
13 us that one.

14 MR. HEWITT: I'm not sure. Have we?

15 MR. SAFIULLAH: Yes.

16 MR. HEWITT: And he didn't answer it?

17 MR. BEVERLY: Yes.

18 MR. SAFIULLAH: I believe so, yes.

19 MR. HEWITT: Specifically mentioning the
20 other claim?

21 MR. SAFIULLAH: I believe so.

22 MR. PERRY: Without having seen the
23 interrogatory, I would agree with the idea generally.
24 It sounds appropriate.

25 MR. HEWITT: That's fine.

1 (Exhibit.35 marked.)

2 Q (By Mr. Hewitt) This is Exhibit 35 I've just
3 handed you. It's entitled "Stenographic Notebook."

4 A I don't think I have this one. Where you got
5 this from?

6 Q Do you recognize this notebook?

7 A This is my writing, but I didn't remember it.

8 Q You don't remember this notebook?

9 A Yes -- oh, yes, yes. Small one. Now you
10 can make this one --

11 THE COURT REPORTER: I'm sorry?

12 Q (By Mr. Hewitt) I can't hear you.

13 A Yeah, this size, right. That's right. I
14 recognize it now.

15 MR. BEVERLY: Has this one been produced
16 before?

17 MR. SAFIULLAH: I assume it's the other
18 one that's been produced because it's within the dates.

19 Q (By Mr. Hewitt) Let me turn you to page H 557.
20 Do you recognize the hand -- handwriting on this page?

21 A Yes. My handwriting.

22 Q And do you recognize the signature at the top?

23 A Yes. Ignatiev.

24 MR. PERRY: Ignatiev. I-g-n-a-t-i-e-v.

25 Q (By Mr. Hewitt) With respect to item 4 --

1 incidentally, the date at the top is February 27, 1986,
2 correct?

3 A That is -- I think it must be 7 because of the
4 year just turn over so I forget. Very likely. It's
5 not --

6 Q All right. You believe it would be
7 February 27 --

8 A Yeah, yeah.

9 Q -- 1987?

10 A Yeah.

11 Q Okay.

12 A Because just -- the new year just pass by. I
13 just forgot.

14 Q Let me ask you about item 4. You see the
15 reference there to 0.01 and 0.05 and an arrow --

16 A Uh-huh.

17 Q -- to yttrium 0.99 and yttrium 0.95?

18 A Uh-huh.

19 Q And then you see the list of elements below
20 that?

21 A Uh-huh.

22 Q Is that all your handwriting?

23 A Yes.

24 Q They begin with Gd go all the way through Lu at
25 the bottom?

1 A Yes.

2 Q Is that list all the rare earth elements?

3 A Yeah.

4 Q And can you -- do you recall today what you --
5 who you received this information from and what the
6 information was?

7 A What information?

8 Q Well, first of all, did you receive this
9 information from anybody?

10 A What information? In here it doesn't have any
11 information.

12 Q Well, it does --

13 A Doesn't say what I'm doing, either so --

14 THE COURT REPORTER: What --

15 A We do not -- this element here, I put that
16 down. I make a check as superconducting. We found that
17 it's none. Do you see the check?

18 Q (By Mr. Hewitt) Yes. What about it?

19 A I believe I run all the rare earth element in
20 123 within one week. And I do produce most of the rare
21 earth 123 superconductor except praseodymium, ytterbium,
22 ytter -- Tm -- which how to say it -- I don't remember.
23 And the one I don't check it is not superconducting.
24 But cerium is not -- cerium is not superconducting. I
25 don't forget why I put cerium as a check. Samarium is

1 superconducting.

2 Q Mrs. Meng, let me point something out to you.

3 The date is February 27th.

4 A Yes.

5 Q That was prior to you learning of 123 as being
6 the formula for the black phase, correct?

7 A No. We already know that black phase, right.

8 We already know that --

9 Q Did you know?

10 A -- 123 as in -- yeah, not yet. Not yet.

11 You're right. You're right. I didn't send the samples
12 through yet.

13 Q Right. So at this time, you didn't know it was
14 123 --

15 A No, no, no.

16 Q -- correct?

17 A Yes, your right.

18 Q And, in fact, if you look at the formula below
19 it in a bracket, it's --

20 A 214.

21 Q -- it's a 214 formula; isn't it?

22 A Correct. I'm sorry.

23 Q All right. Do you have -- do you have a --
24 recog -- recog -- excuse me -- a recollection today as
25 to the source of the information here that is the 101.05

1 and all the rare earth elements in the 214 formula?

2 A Say it again.

3 Q Were you given instructions by Dr. Chu to run
4 tests as set out here for -- with partial substitutions
5 for Y of each of the rare earth elements?

6 A I don't recall that. Dr. Chu did talk to me.
7 But it's my understanding, he never tell me in detail,
8 0.1, 0.2, he never. Okay? Because he believe I can --
9 able to determine that. That's my responsibility. He
10 never said that detail. He never do that.

11 Q Well, but you -- I believe you used the term
12 earlier partial substitution to describe doping with
13 small amounts of rare earth elements, correct?

14 A Uh-huh.

15 Q Do you recall that Dr. Chu discussed with you
16 running a series of tests on the rare earth elements --

17 A I cannot recall.

18 Q -- using -- let me finish -- using partial
19 substitutions?

20 A I cannot recall. Proba -- probably, yes. But
21 I cannot recall exactly.

22 Q All right. You say it's possible?

23 A Yes. Yeah. He talked to me kind of
24 substitution.

25 Q Pei Hor stated in his deposition -- deposition

1 he's pleased. So --

2 THE COURT REPORTER: Have good what?

3 A Good result, he was pleased. Even he did not
4 assign me to do that, he know I independent do it. So
5 maybe some of the things I would do it myself. I could
6 not recall.

7 Q (By Mr. Hewitt) Do you have any understanding,
8 from reviewing the material of paragraph 4 on page H
9 557, as to what test was being suggested here?

10 MR. BEVERLY: Objection, form.

11 A I don't remember.

12 Q (By Mr. Hewitt) Let me get to you turn to page
13 H 559. Is that your handwriting on that page?

14 A Yes.

15 Q And the signature in the top corner is
16 Dr. Ignatiev again?

17 A Yes.

18 Q And the first -- first, the date is
19 February 28, 1987, correct?

20 A 28 -- February 28, 1987.

21 Q All right. And underneath that it says
22 "Dr. Chu call"?

23 A Yes.

24 Q Then item 1 -- I don't know what the first two
25 symbols are. Are they Chinese?

1 A Cubic. Cubic.

2 Q What?

3 A Cubic.

4 Q Cubic?

5 A Uh-huh.

6 Q So, what --

7 A I believe --

8 Q What was being --

9 A I believe --

10 Q What is being said there?

11 A I believe is he got the result from Hazen.

12 Okay? I'm not exactly remember the time. Something

13 tell me this compound, the black color. Remember the

14 Chinese on this first line, 3.865, this is a black

15 color, the color of the sample, this one, the Chinese --

16 Q Okay.

17 A -- is the cubic structure with -- parameter A

18 is 3.865 and it's -- that also talking about the

19 orthorhombic. The second line is "ro" is orthorhombic.

20 Orthorhombic, the letter parameter of 5.7, 7.1, 12.1.

21 This number have -- Dr. Chu tell me.

22 Q And what is said in Chinese below that with the

23 arrow?

24 A Green color, it's not clear.

25 Q Green color, is not clear?

1 A Yeah.

2 Q And then --

3 A Sample.

4 Q What's the next other?

5 A Sample. Sample. Sample.

6 Q Sample?

7 A Uh-huh.

8 Q And then what are the three samples shown
9 there?

10 A I just say they're three different samples.
11 And underneath is a green color again. It's 211.
12 Underneath this line, this Chinese word is green color.

13 Q And on the next line?

14 A It's brack -- black color.

15 THE COURT REPORTER: Brown?

16 A Black.

17 Q (By Mr. Hewitt) And does that say 123?

18 A Yes.

19 Q And then it says 113 and a question mark?

20 A Yes. I don't know why I put a question mark.
21 It should be 123.

22 If I could -- I believe this result, must
23 be Dr. Chu get that from Hazen and tell me. Yes. The
24 first cubic must be talking about 211 and the
25 orthorhombic is 123, as I remember.

1 Q On the next page, H 560 --

2 A Uh-huh.

3 Q -- also dated February 28 --

4 A Uh-huh.

5 Q -- Dr. Chu is mentioned again.

6 A Uh-huh.

7 Q And under item 1, it says "structure analysis."

8 A Uh-huh.

9 Q What does that mean? Do you recall?

10 A No. Maybe he want me to do the structure

11 analyze.

12 Q And then --

13 A If I put Dr. Chu down, it's Dr. Chu talk to me.

14 Q I'm sorry?

15 A If I put Dr. Chu down there --

16 Q All right.

17 A -- it's Dr. Chu assigned me to do it.

18 Q And then item 2 says 114?

19 A 114 is -- it must be the sample label. I

20 didn't remember. Must be sample label.

21 Q And then under item 3?

22 A Rare earth. The Chinese is rare earth.

23 Q Okay. And next to it is the English rare

24 earth, correct?

25 A Yes.

1 Q And then it says one percent and 0.5 percent
2 yttrium-lanthanum?

3 A Yes.

4 Q Does that mean anything to you today?

5 A I don't know. It's doping or something. Maybe
6 doping lanthanum for yttrium.

7 Q Was it -- is it possible that Dr. Chu -- that
8 you were writing down Dr. Chu's instructions to do
9 the --

10 A I believe this -- this item was Dr. Chu talk to
11 me so I write it down.

12 Q And was Dr. Chu, with the 0.5 percent, for
13 example, under item 3, requesting that you dope the rare
14 earths into yttrium-lanthanum compositions?

15 A I don't remember detail. But definitely he
16 talked to me about rare earth, other element doping in
17 this conversation.

18 Q Your next entry is there. It says 2, slash
19 Feb?

20 A February.

21 Q Yeah, I -- I guess I don't quite understand why
22 you would have a -- first of all, do you think that's
23 February 2nd?

24 A No. I -- February 28 maybe by mistake. No
25 reason 22nd in here. Because he might be -- be -- talk

1 to me about the letter -- the paper -- center physical
2 review letter.

3 THE COURT REPORTER: Center of what?

4 MR. PERRY: Physical.

5 A Physical review letter, he write a paper.

6 Q (By Mr. Hewitt) Dr. Chu did?

7 A He did. And the second is Europe. I write
8 "Europe."

9 Q Europe?

10 A Chinese, yeah. But I don't know why I mention
11 about Europe. Maybe -- I don't know.

12 Q And what's the third item?

13 A Third item is Mau Kwen Wu going to perform.
14 You know, it's -- at that time is a March meeting, March
15 meeting, APS, Physical Society meeting in March. After
16 we find the high temperature superconductor, we get
17 excited. We want Mau Kwen Wu to make the disc --

18 THE COURT REPORTER: Get --

19 A Mau Kwen Wu to make the superconducting disc
20 and demo the levitation about -- on the -- on the -- on
21 the top of the magnet. Do you understand me?

22 Q (By Mr. Hewitt) No.

23 A Okay. Because -- this is superconducting
24 material that Dr. -- you're talking Meissner effect --
25 is that the magnetic field cannot penetrate --

1 THE COURT REPORTER: Cannot what?

2 MR. HEWITT: Magnetic field cannot
3 penetrate.

4 A Cannot penetrate the superconductor. This goes
5 out. In fact, that's what they call Meissner effect,
6 right? And they say, "Okay, in this case you
7 can put the -- later on you people see a lot of demo for
8 the one piece of the superconductor. Underneath is a --
9 is a magnet and then you see levitation on the top.
10 That's --

11 THE COURT REPORTER: You see what?

12 A Levitation -- levitates on the -- on the top of
13 the magnet.

14 Q (By Mr. Hewitt) Levitation of the disc on top
15 of the magnet?

16 A Right. And he say performance -- the
17 Chinese -- oh yeah, that's perform.

18 Q Perform?

19 A They want Dr. -- Mau Kwen Wu maybe -- maybe
20 Dr. Chu assign Mau Kwen Wu to do that in the March
21 meeting. That's how I remember. We trying to do it but
22 we failed. Because there's a mixture phase after it
23 comes through.

24 THE COURT REPORTER: Before that what?

25 A Mixture phase. So, one phase is too small,

1 cannot levitate, cannot expel all the field, still have
2 larger proportion on the magnetic field was penetrate in
3 the sample.

4 Q (By Mr. Hewitt) Let's turn over to page H 564.

5 A Uh-huh. 564.

6 Q And is that all your handwriting?

7 A Yes.

8 Q And item 1 refers to -- it says, "152 single
9 crystal"?

10 A I believe I try to grow single crystal.

11 Q Item 2 says "IDX"?

12 A IDX. IDX. IDX.

13 Q What is that?

14 A Yesterday I told you. It's energy dispersed
15 analyze of X-ray increments. Simply, we call it IDX. I
16 have to -- it must be -- I say I grow a single crystal.
17 I want to do the IDX to see do I have that.

18 Q And item 3 says 152, 153, 154?

19 A That's a label of the sample number.

20 Q It's what?

21 A Label of the sample number.

22 Q Samples. Of single crystals?

23 A Yeah.

24 Q Item 4 refers to scandium, correct?

25 A Yes.

1 Q Underneath it it says
2 lanthanum-barium-copper-oxide 130. Does that mean
3 anything to you?

4 A Yes. When you grow the single crystal,
5 sometime you use the fluid -- fluid liquid. Probably
6 that's the ratio I put it down.

7 Q A ratio?

8 A To grow the single crystal.

9 Q Uh-huh.

10 A So you need to have a flat -- how do you
11 call -- my pronouncing must be wrong -- correct me --
12 it's something like liquid, flat. F-l --

13 Q -- a-t.

14 A Something like liquid. So, when the material,
15 you have melted over the melting point, so this
16 material -- if only this material above the melting
17 from, that going to be very dense and --

18 Q Very what?

19 A Very dense, the material.

20 Q Dense?

21 A Yeah. When you go above the melting point, so
22 in this card you need some liquid state -- liquid state
23 material, the low -- low point -- low melting point
24 material. You need some low melting point material
25 acting as a fluid because the method to grow single

1 crystal. Do you understand?

2 So, this low melting point material,
3 mostly people use similar composition with the sample
4 you have so you will not have impurity -- impurity
5 phase.

6 Q Item --

7 A Do you understand?

8 Q Item --

9 A So, there must be something like that --

10 Q All right.

11 A -- the ratio of the material or the other low
12 melting point material.

13 Q Item 5 says "rare earth" again?

14 A I don't know why -- why this -- I just cannot
15 recall everything now.

16 Q I see the list 1, 2, 3, 4, 5. Is this possibly
17 another call from Mr. Chu?

18 A Doesn't look like -- mostly if Dr. Chu call me,
19 I would put Dr. Chu. Because that doesn't mean I like
20 to send -- I don't know why -- why -- before it -- I
21 grow single crystal at that time. Well, definitely
22 Dr. Chu require me to grow single crystal.

23 Q He did?

24 A Yes. He assigned me to go ahead and grow
25 single crystal.

1 Q So, this could be other -- this entry on page H
2 564 could be then the result of a conversation with
3 Dr. Chu?

4 MR. BEVERLY: Objection, form.

5 A Possibly.

6 Q (By Mr. Hewitt) Only possibly? You don't know
7 for sure?

8 A I don't recall. As I told you, he -- his
9 assignment also first priority. I would do it. Look --
10 look at page -- melting point 929 I use barium chlorine.

11 Q I'm sorry. What are you referring to?

12 A Here.

13 Q That's --

14 A How to spell the word. W -- F -- arrow, flat
15 pin -- flat -- because in order to grow the single
16 crystal, you require some low melting point material to
17 act like to transform or the heat.

18 Q All right.

19 A Okay. So, you see barium chlorine, too, here,
20 as right on -- the melting point is 925. And then the
21 solidarity is where they put the cold water, hot water,
22 chlorine, nitrate and so and so. That's the symbols.

23 Q All right. Let me refer you to page H 569.
24 Are you with me on H 569?

25 A Yes.

1 Q Is all that page your handwriting?

2 A Yes.

3 Q Once again, you have items circled, 1, 2, 3 and
4 4?

5 A Huh?

6 Q You have items circled 1, 2, 3 and 4, correct?

7 A Correct. Correct.

8 Q Item 3 says Mao data?

9 A Dr. Mao's data, and Hazen's. Dr. Mao's lab and
10 Hazen's data. And they tell us the composition, yttrium
11 1.12, barium 2.1, copper 2.9.

12 THE COURT REPORTER: Would you say that
13 again, please?

14 A This is Dr. Mao's data. Dr. Mao is the one
15 with Dr. Hazen together to identify this structure for
16 us.

17 Q (By Mr. Hewitt) All right. And then the
18 formula under No. 3 --

19 A From Dr. Hazen.

20 Q -- Y Ba Cu is 123, correct?

21 A Which one?

22 Q The second line of paragraph 3.

23 A Yes.

24 Q And then what is item 4 that says "from --

25 A Dr. Hazen.

1 Q -- "R. M. Hazen"?

2 A He identified two phase which account at least

3 95 percent of the sample -- for the black sample is

4 black phase is tetragonal, as I told you. "A" lattice

5 parameter equal to 3.85; B --

6 Q You don't need to read it.

7 A Huh?

8 Q You don't need to read it.

9 A This is Dr. Hazen's data.

10 Q All right. And then on the next page, H 570,

11 is this your handwriting again?

12 A Which one?

13 Q Page H 570.

14 A Yes.

15 Q And are you writing down information from

16 Dr. Chu --

17 A Dr. Hazen.

18 Q -- related to you or did Dr. Hazen actually

19 call you?

20 A He definitely called Dr. Chu first.

21 Q All right.

22 A He would not call me --

23 Q All right. So this --

24 A -- before Dr. Chu.

25 Q This information came to Dr. Chu -- from

1 Dr. Chu, right?

2 A Yes.

3 Q And, finally, we get to the page -- there's a
4 couple more pages here. But look on page 572.

5 A Uh-huh.

6 Q Is that your handwriting?

7 A Yes.

8 Q And there are the formulas under item 3 for the
9 black and green phases, correct?

10 A Uh-huh.

11 Q Now, once the 123 formula was known, were
12 complete substitutions made in a 123 formula using the
13 rare earth elements?

14 A Correct.

15 Q And was that your idea or Dr. Hor's or Dr.
16 Chu's?

17 A I think after I -- I told you after we -- let
18 me try to remember.

19 First one, you got yttrium sample and
20 after second sample, we do gadolinium. At that time was
21 it 123 or 214? Let me try to remember. Second sample
22 was -- gadolinium was Dr. Pei's suggestion.

23 THE COURT REPORTER: Was what?

24 A Dr. Pei suggested replace the yttrium with
25 gadolinium.

1 Q (By Mr. Hewitt) Dr. Pei Hor --

2 A Yes.

3 Q -- suggested gadolinium?

4 A Yeah.

5 Q Did he suggest it in the 123 formula --

6 A He said -- let me --

7 Q -- or in the 214?

8 A -- check the data at that time if we find 123
9 or not.

10 Q What do you need to look at?

11 A My affidavit. At that time we already have
12 123? I guess should -- before the March meeting should
13 be. Before the -- before the March meeting, so we
14 already knew that's 123. Yes. I believe so, 123.

15 Q And are -- what are you looking for in your
16 affidavit of Exhibit 19?

17 A I point out the second sample I make is
18 gadolinium. What time? I believe it's after 123 we
19 identify. Yes, I believe 123. Completely substitute by
20 yttrium.

21 THE COURT REPORTER: I'm sorry?

22 A After -- I believe it's after 123 structure had
23 been identified.

24 Q (By Mr. Hewitt) So, after Dr. Chu told you --
25 I'm sorry.

1 After -- after Dr. Chu informed you that
2 the black phase was essentially 123, you immediately
3 turned to complete substitution of the rare earths using
4 a 123 formula, correct?

5 A Correct.

6 Q And it's your testimony that that complete
7 substitution was the idea of Pei Hor?

8 A No, only one -- first one, gadolinium.

9 Q Gadolinium?

10 A But after that, it's natural we can continue do
11 that. But I don't know later on if Dr. Chu told me to
12 do the other rest of it. I don't -- I didn't remember.
13 Maybe he said continue do the other or maybe for me --
14 for me, it's natural we have to do the other element.
15 If gadolinium work, of course, we would try the other.

16 Q Do you know whether or not any conclusions were
17 reached from the partial substitutions of the rare
18 earths that was done in late February?

19 A Can you repeat again?

20 Q Yeah. Well, let me get back over to here. Let
21 me -- let me refer you to page H 557 again.

22 A Uh-huh.

23 Q I believe you testified that it was possible
24 that Dr. Chu requested that you do partial substitutions
25 of the rare earth in the yttrium and lanthanum system?

1 MR. BEVERLY: Objection, form.

2 A When?

3 Q (By Mr. Hewitt) Is that correct?

4 A When?

5 Q Well, the date of this is February 27. That's
6 H 557.

7 A 557. Here, right?

8 Q Yes.

9 A I don't remember.

10 Q Do you have any recollection of any conclusions
11 being reached from -- well, first of all, with respect
12 to page 557 and the partial substitutions of paragraph 4
13 listed there, do you know whether or not all that work
14 was done?

15 A No.

16 Q Now, you see the list there and you see the
17 check marks. Earlier you indicated that those checked
18 were superconducting?

19 A Not correct.

20 Q Not correct?

21 A Because the cerium is not -- Ce is not
22 superconducting.

23 Q Do you know whether or not the check marks
24 were made for some other reason?

25 A I don't know. Maybe I want to do that because

1 samarium and praseodymium has extremely large atom
2 size --

3 THE COURT REPORTER: Has what?

4 A Large atom size. So maybe for that reason I
5 don't want to do this too because lanthanum, as a matter
6 of fact, we substitute yttrium and then gadolinium,
7 europium. But look at the periodic table. I have that.
8 Samarium and praseodymium is very large. Not only that,
9 the valence state is different.

10 THE COURT REPORTER: What is different?

11 Q (By Mr. Hewitt) Valence what?

12 MR. BEVERLY: State.

13 Q (By Mr. Hewitt) State?

14 A Because the superconducting material is very
15 crucial for the copper mixture, really. Copper can be
16 plus 2, can be plus 3. Okay? So, they sometimes
17 require the -- the right valence state for copper.

18 And praseodymium, its cell is not plus 3.

19 The other three -- praseodymium I remember is 3 or 4,
20 something. Let me look at periodic table --

21 Q That's okay. I'm not --

22 A So that's -- maybe I -- I don't want to do
23 these two samples probably. That's why I didn't make
24 the check. But, in fact, cerium is not superconducting.

25 Q Is it possible these tests were for

1 something -- some other purpose?

2 A No, just to say what we are going to do
3 following, simply.

4 Q All right. I've got a couple more questions.

5 If you'd look, please, to page 8 -- excuse
6 me -- H 579 of Exhibit 35. Is all the handwriting on
7 page H 579 yours?

8 A Yes. Do you mind if I bring my glasses? It is
9 difficult to read.

10 Yes, in my handwriting.

11 Q What appears to be shown here on page H 579 is
12 a chronology of events?

13 A Yeah. Very likely.

14 Q Do you have any recollection today as to why
15 you were listing out a chronology of events?

16 A Why I do that? Maybe sometime I want to
17 summarize what I have done and then that's it.

18 I always summarize the result a certain
19 time. Like the table you have there, after a few one, I
20 have to do the summarize again and compare.

21 Q There's a reference at the top of the page and
22 phone number to a Joe David with Business Week?

23 A Who is this person?

24 Q Is that your handwriting?

25 A Yes. I don't remember.

1 Q I just wonder if you --

2 A Oh, maybe he's a reporter.

3 Q Right.

4 A He want to interview or something.

5 Q And I wonder if you put down a chronology for
6 purposes of the interview.

7 A Possible. I don't know. Mostly people
8 interview Dr. Chu.

9 Very few occasions they interview me.
10 So -- but I do -- was interviewed a couple of times
11 but --

12 Q Item 5 says, "Patent in end of January."

13 A I don't know what that means. Maybe Dr. Chu
14 finish writing or what. Dr. Chu maybe say, "Oh, I
15 finish the writing for the patent," maybe.

16 Q You certainly knew as of March 23, 1987 --

17 A We have the patent.

18 Q -- that Dr. Chu had written or filed a patent
19 at the end of January; is that correct?

20 A Yeah. But I don't know how many versions he
21 have. I don't know.

22 Q I didn't hear you.

23 A I don't know how many versions of patent
24 application he have. I never knew it.

25 Q Now, if you look at item -- I think it's --

1 8 --

2 A Yes.

3 Q -- and page 580 --

4 A Yeah.

5 Q -- what does that statement say?

6 A I guess in January 30 we must be some -- see
7 some result, and I want to confirm, or determine this
8 material again. That's very likely.

9 Q I -- I'm asking about the first entry on the
10 top of page 580. I can't tell the number.

11 A Oh, 580. Sorry. I still at 579.

12 Q 580. The first entry, is that an 8?

13 A Yes.

14 Q All right. What does that say under 8?

15 A "December 4, Boston meeting, talk to Wu about
16 yttrium and other element." That I believe I was
17 referred to Dr. Chu talked to Mau Kwen Wu in the Boston
18 meeting.

19 Q All right. So as -- isn't it true that as of
20 the date you wrote this chronology, March 23, 1987, you
21 believe that Dr. Wu -- excuse me -- that Dr. Chu talked
22 to Dr. Wu about yttrium and other elements on
23 December 4?

24 MR. BEVERLY: Objection, form.

25 Q (By Mr. Hewitt) Correct?

1 A I don't know. I did write yttrium, but I don't
2 remember. I believe he only talked to him about
3 strontium substitution in the Boston meeting --
4 strontium substitution in Boston meeting which is
5 December.

6 Maybe I write it wrong, because not likely
7 he talk about yttrium yet. If strontium has not been
8 done, how can they jump to the first element
9 replacement?

10 Q Well, I'm only asking what you said, Mrs. Meng.

11 A What I write in here is yttrium, right. That's
12 what I say.

13 Q Now, under item 10 at the end of -- it says end
14 of -- it says end of February under -- or to the side of
15 conclusion is an "A" and it says, "yttrium without
16 important effect," and then B says, "magnetic element,"
17 correct?

18 A Yes.

19 Q Do you know what that means?

20 A I don't remember. I must be talking about
21 single crystal, the third element effect. Here is
22 Charles Cox writing here.

23 Q Okay. I believe I have one more exhibit.

24 THE WITNESS: We may not have this copy.
25 We need to copy this one.

1 MR. PERRY: I've got it.

2 THE WITNESS: Okay.

3 (Exhibit.36 marked.)

4 Q (By Mr. Hewitt) Let me hand you what I've
5 marked as Exhibit 36, please. Do you recognize this as
6 a second notebook of yours, second stenographic
7 notebook?

8 A Uh-huh.

9 Q Now, the date down at the bottom says, "Ruling
10 Meng, July 1987," correct?

11 A Which page?

12 Q The first page.

13 A Oh, yeah, right.

14 Q But the title written here in your handwriting
15 is "High Tc Superconductor," parentheses, Roman Numeral
16 II.

17 A Yes.

18 Q Is that your handwriting?

19 A Yes.

20 Q You've actually written virtually everything in
21 English?

22 A Huh?

23 Q You've actually written virtually everything in
24 English in these steno notebooks but on January 28, on
25 page H 650 --

1 A What -- which one?

2 Q -- second page, H 650, January 28, at the
3 bottom --

4 A Oh, okay.

5 Q -- you have something written there in --

6 A I think --

7 Q -- Chinese.

8 A I used the stainless steel ball to mix the
9 material --

10 THE COURT REPORTER: Standard what?

11 A Stainless steel ball, b-a-l-l -- that's a
12 machine.

13 Q (By Mr. Hewitt) Okay.

14 A The container -- put a lot of stainless steel
15 ball inside the mixture material and synthesize
16 1150 degrees --

17 THE COURT REPORTER: 11?

18 A 1150 degrees Centigrade to synthesize. Six
19 samples, the result is very repeatable. But Tc not
20 high. And here also Chinese.

21 Q (By Mr. Hewitt) On where?

22 A Here, sir.

23 Q Oh, at the top there on page H 650?

24 A I use a different size of the stainless steel
25 ball, use it different because the grounding material is

1 standard --- in order to mix the material, put in a
2 container, which you put a lot of stainless steel balls
3 inside the material --

4 Q I'm sorry. You put what in?

5 A To mix the material, mostly we use a hand to
6 ground it.

7 Q Right.

8 A It's not very good. It takes a larger
9 quantity. There's a container that's -- equipment you
10 can put inside to measure material but it depend on
11 material, the hardness. Some is very soft, some very
12 hard. You can change the size and number of the
13 stainless steel ball you put inside.

14 MR. HEWITT: Let's take a short -- let's
15 take a short break. And I just want to be sure I'm
16 through.

17 THE VIDEOGRAPHER: Off the record at 2:18.

18 (Recess from 2:18 to 2:42).

19 THE VIDEOGRAPHER: We are back on the
20 record at 2:42 p.m.

21 MR. HEWITT: Ms. Meng, that's all the
22 questions I have for now. I'm going to pass the
23 witness.

24 A Thank you.

25

1 EXAMINATION

2 BY MR. BEVERLY:

3 Q Good afternoon, Ms. Meng.

4 A Good afternoon.

5 Q My name is J. Beverly. And you understand that
6 I represent Pei Hreng Hor?

7 A Yes.

8 Q And we have met once before, I believe --

9 A Yes.

10 Q -- correct? And that was in 2006?

11 A Yes.

12 Q I wanted to ask you a few questions about
13 Dr. Hor's work in the -- in the lab back in 1986 and
14 1987.

15 You understood he was the alternate
16 principal investigator for the lab at -- when -- while
17 Dr. Chu was at the NSF?

18 A I tell you the truth, at that time I don't
19 quite understand what -- what is the principal
20 investigator.

21 At that time, I didn't understand the
22 meaning. The name -- Dr. Chu did not talk about he's
23 alternate PI.

24 THE COURT REPORTER: His what?

25 A Dr. Chu did not tell me his title, but he did

1 tell me Pei are going to substitute -- replace him for
2 temporary to take care of the -- the MS funding and as
3 well as the lab running. Dr. Chu did tell me.

4 Q (By Mr. Beverly) So, Dr. Chu told you that --

5 A Yeah.

6 Q -- that --

7 A Or he asked me -- require me to very well
8 cooperate with him and support his work.

9 Q Dr. Chu told you that Dr. Hor was going to run
10 the lab while he was gone?

11 A Yes.

12 Q And you didn't know about principal
13 investigators at that time?

14 A Oh, no. I don't -- he didn't -- he didn't
15 mentioned PI.

16 Q Have you since come to understand what a PI is?

17 A Oh, later on, yes.

18 Q And what is your understanding of what a
19 principal investigator is?

20 A I think each group have the principal
21 investigator, who is in charge of the group, including
22 all the research funding or research direction,
23 something like that, right.

24 Q Okay. And have you worked in groups with --
25 that had a principal investigator?

1 A That's -- Dr. Chu is the only group I work with
2 in the United States for the last 30 years.

3 Q So, you worked with Dr. Chu's group for the
4 last 30 years. And you understood Dr. Chu was the
5 principal investigator? At some point you learned that
6 term and came --

7 A Basically, I know he's professor and head of
8 the group. I don't care about principal investigator.

9 Q Okay. Was -- and Dr. Hor was working in
10 Dr. Chu's group in 1986 and 1987?

11 A Uh-huh.

12 Q All right. Was that an exciting time, the end
13 of 1986, beginning of 1987?

14 A Yeah.

15 Q And why was it an exciting time?

16 A Because we reach our goal. Our dream become
17 reality. We find a high temperature superconductor.

18 Q How long -- do you recall how long Dr. Hor had
19 been working in the lab at that time beginning in 1986?

20 A I don't recall. Maybe when I -- 1984 I come
21 back to the lab. I don't recall when. And I feel Mau
22 Kwen still there. Vic still there. Pei maybe come
23 later a little bit. I didn't recall that.

24 Q Okay. So, you don't know exactly --

25 A No.

1 Q -- when he came -- came to work for that group?

2 A No.

3 Q Okay. Was Dr. Hor working long hours in the
4 lab during that time period?

5 A Oh, yeah. Everybody did.

6 Q During that late '86, early 1987 time period --

7 A Yes.

8 Q -- everyone in the lab was working really
9 extremely long hours?

10 A Yes.

11 Q Including Dr. Hor?

12 A Yes.

13 Q You all were working seven days a week at
14 times, correct?

15 A Most people worked seven days there.

16 Q Did you see Dr. Hor in there on Saturdays and
17 Sundays?

18 A Yeah.

19 Q Did you see him working there late at night?

20 A It depend on the measurement. In that time we
21 do not use the computer line so the people in physics,
22 their low temperature lab always have to --

23 THE COURT REPORTER: People in what?

24 A Low temperature lab, measurement lab -- always
25 stand there, fill up liquid nitrogen sometime in the

1 evening to keep the -- the cooler -- keep the cooler for
2 the measurement equipment.

3 But I left -- I work in other lab,
4 material lab. Their low temperature measurement is the
5 other lab. So I would not spend all the time to see who
6 is running that. Mostly I stay in my lab --

7 Q Right.

8 A -- the materials synthesize lab.

9 Q Was Dr. Hor ever away from the University of
10 Houston for an extended period of time during this time
11 in late '86 and early '87?

12 A Not as I know.

13 Q Now, you've testified that your expertise is in
14 material synthesis, correct?

15 A Correct.

16 Q And -- and Dr. -- in Dr. Chu's lab --

17 A Uh-huh.

18 Q -- you were the one that was primarily
19 responsible for materials synthesis?

20 A Correct.

21 Q Did you synthesize all the materials yourself
22 or did other people do material synthesis?

23 A No, I get some help for the student, mainly
24 it's an undergraduate student and one of my colleagues,
25 Y. Q. Wang --

1 THE COURT REPORTER: What was the name?

2 A Y. Q. Wang, my colleague.

3 Q (By Mr. Beverly) So --

4 A I always have undergraduate student working
5 with me.

6 Q All right. Mr. Wang, he's not a -- is he a
7 Ph.D.? Do you know?

8 A No.

9 Q Okay. Do you know when Wang joined the group?

10 A I cannot recall well. I remember -- maybe at
11 that period, Pei and I was going to pick him up. So I
12 don't know Pei remember when he come in the lab or not.
13 Close to end of 1986, just right before the -- the
14 exciting moment.

15 Q So, you recall that Dr. -- I'm sorry --
16 Mr. Wang had not been there for very long --

17 A No.

18 Q -- when the -- you first heard about the
19 Bednorz and Merrill --

20 A No.

21 Q -- Müller discovery?

22 A No. No.

23 Q Okay.

24 A He just right in arrive in our group not very
25 long.

1 Q Did Mr. Wang work independently of you? Did he
2 come up with his own ideas for materials to synthesize?

3 A Mr. Wang, basically his training also material.
4 But it's in magnetic material. He have -- as I
5 understanding, he have limited or zero experience --

6 THE COURT REPORTER: Limited?

7 A Limited or zero superconductor -- working on
8 superconducting material when he come to our lab.

9 Q (By Mr. Beverly) So he -- he didn't --

10 A He --

11 Q As far as his --

12 A Himself is -- he's a material scientist.

13 Q He was a material scientist, also?

14 A Yeah, but a different field.

15 Q Mostly magnetic materials?

16 A Yes, correct.

17 Q Okay. And do you know what his previous --
18 other than just generally magnetic materials, do you
19 know what his previous expertise was in?

20 A Not really.

21 Q So as far as working on high temperature
22 superconductors, Mr. Wang didn't really have any
23 experience at the time he came to the lab?

24 A No.

25 Q Other than Mr. Daniel Campbell, who I think

1 you've mentioned --

2 A Andy.

3 Q What?

4 A Andy. A-n-d-y.

5 Q Andy. And --

6 A I don't know the family name.

7 Q So, Daniel and Andy were the two main

8 undergraduates that worked with you during --

9 A I still --

10 Q -- this time period?

11 A -- had one Vietnamese student, Hu -- Hui -- the

12 name is Hu -- Hui.

13 Q How do you spell that?

14 A Hu. H-u something. They're different

15 pronunciation with Vietnamese.

16 MR. HEWITT: Was it H-o-i?

17 A Something like that. Hu -- Hui. We call him

18 Hu.

19 Q (By Mr. Beverly) Is that his last name or first

20 name? Do you know?

21 A First name.

22 Q First name. But you don't remember his -- his

23 family name?

24 A No. No.

25 Q Okay. Did Dr. Chu tell you the specifics of

1 how to do material synthesis?

2 A It's not need for him to tell me how to do it.
3 Because before 1984, I have working with him for two
4 years, since 1979 to 1981.

5 After that, I been working in Germany for
6 half a year, grow all the single crystal he required.

7 So, in 1979 to 1981 we worked with low
8 temperature superconductor, alloy compound as well as
9 oxide.

10 So, 1984, when I came here, because the
11 research funding is limited in superconductor, we start
12 to work with gamma iron oxide thin film. So, I set up
13 the material lab for him, so I think he know my
14 capability quite well.

15 Q So, you were the one who set up the lab to do
16 material synthesis?

17 A Correct.

18 Q Get all -- got all the equipment and all the
19 materials that you needed?

20 A We build up our own because we don't have
21 money. Yes.

22 Q You built your own equipment?

23 A Many of them. Some of them. Because Dr. Chu
24 brought a drawing from Bell Lab --

25 THE COURT REPORTER: A what?

1 MR. BEVERLY: Drawing.

2 A Drawing for the machine -- drawing from Bell

3 Lab --

4 Q (By Mr. Beverly) Uh-huh.

5 A -- like arc melt furnace. That's arc melt.

6 Q Atmel, is that a-t-m-e-l?

7 A A-r-c, arc -- arctic --

8 Q Arc melt?

9 A Arc melt.

10 Q Okay.

11 A And then I used this drawing and I go to

12 machine shop, work with them and we make our own

13 machine.

14 Q You made your own furnace?

15 A Yeah, but not make by myself. Machine by

16 machine shop.

17 Q Right. But ya'll had to --

18 A Yeah.

19 Q -- essentially have someone make the furnace

20 for the lab?

21 A I helped him to build up the high vacuum system

22 with vacuum bell join, which we were able to do that --

23 grow the thin film by sputtering method, rf

24 sputtering -- rf sputtering machine as well as I can do

25 the evaporation in this chamber.

1 Also, I can grow the single crystal in
2 this chamber, and this chamber has small coil, can reach
3 ultra high vacuum --

4 THE COURT REPORTER: Small what?

5 A Coil -- coil -- coil. You make the container
6 inside so this small area can go to ultra high vacuum.

7 Q (By Mr. Beverly) Okay. With respect to the
8 equipment, obviously, you had a large role to play in
9 getting the lab set up?

10 A Yes.

11 Q With respect to actually doing the synthesis of
12 particular compounds, did Dr. Chu, for example, ever
13 tell you what temperatures to --

14 A No.

15 Q -- synthesize materials at?

16 A No, definitely not.

17 Q Or -- or what times to synthesize them for?

18 A No, definitely not.

19 Q Or how to do the annealing on particular
20 materials?

21 A No. No.

22 Q Did he ever tell you what atmospheric pressures
23 or partial pressures to use?

24 A No. Don't -- I mean, I didn't mean he did not
25 know it. But he doesn't need to tell me that because he

1 know my capability, and he believe I can do it on my
2 own. I'm independent --

3 Q Did he --

4 A -- material scientist.

5 Q Did he ever tell you what atomic ratios to use
6 to make up the various compositions?

7 A No.

8 Q For example, like in making a LBCO compound,
9 would he tell you what -- what ratios of materials to
10 use?

11 A No. Only sometimes he want to mix some kind of
12 material. He give me the reference paper.

13 Q Give you the paper to look at?

14 A Yeah, someone had published a paper and he's
15 interested and he show me, "Look, I want to make this
16 compound."

17 Q Would an example be the Raveau paper?

18 A No, no, no. Many other paper. We have worked
19 with different material before.

20 Q I'm just saying would the Raveau -- would the
21 Raveau paper be an example of when Dr. Chu did that?

22 A Yeah, yeah, yeah.

23 Q Okay.

24 A He have any reference paper -- I don't think he
25 want to do it. He always bring the paper to me or

1 sometime ask me to check the paper myself.

2 Q And that had happened over the course of the
3 year?

4 A Yeah, over the course of the years we've been
5 working this.

6 Q All right. Did Dr. Chu ever instruct you on
7 how to perform physics measurements?

8 A Physics measurements?

9 Q Such as the resistivity?

10 A Resistivity, no.

11 Q You knew how to do that?

12 A I don't.

13 Q You don't know how to do resistivity?

14 A No.

15 Q Okay. The students did that?

16 A Yes. I know there's a four-lead
17 measurement and -- well --

18 THE COURT REPORTER: What kind of
19 measurement?

20 A Four-lead measurement. Four counter lead put
21 in sample is called four-lead measurement.

22 MR. PERRY: Lead.

23 A Lead. Lead. In fact, I have done that couple
24 of times. But I have said I -- I'm not familiar about
25 that.

1 Q (By Mr. Beverly) Okay. So you didn't do -- you
2 would not do the resistivity measurements?

3 A No.

4 Q Okay. Did you do the Meissner effect
5 measurements?

6 A Well, later they have machine. I can operate
7 machine but I can -- I have to say I don't know much
8 about that. I don't want to say I know how to do it.

9 Q Did you know how to do the measurement --
10 well -- let me strike that.

11 Did you ever do measurements of the
12 materials under high pressure?

13 A No. Because under high pressure measure the
14 resistivity. No.

15 Q Okay. Did Dr. Hor know how to do these kinds
16 of measurements?

17 A Yes. He was training there.

18 Q In this 1986, 1987 time, what training did you
19 have in the actual physics of superconductivity?

20 A Oh, well, you have to say that I learn a lot of
21 physics from that. But I don't think physically any
22 kind of measurement I have been training.

23 Number 1, I don't have time. I'm full
24 filled for time for material preparation. Full filled
25 for material preparation.

1 Number 2, I don't need to do it. I think
2 people -- each people have their own expertise.

3 Q You had other -- you had physicists in the lab
4 to do the actual --

5 A Yeah.

6 Q -- physics work?

7 A I think it's just like a team -- like yesterday
8 I say. In the hospital, you can get different doctor
9 expertise. Why do you have to learn surgery?

10 Q Right. Now, did you and Dr. Chu ever discuss
11 the physics of superconductivity?

12 A Most of the time he talked to me about
13 material. But sometimes he talk about physics because
14 he wanted to help me to familiar -- understand all about
15 the physical property and -- and the principle thing.
16 He did.

17 Q Was that on a fairly general level or would he
18 get into some of the real specifics of superconductivity
19 and physics?

20 A Mostly -- because in the general level I know
21 it. But I didn't know very deep, such as, you know, how
22 to pair breaking, why -- all kinds of things --

23 THE COURT REPORTER: How the what?

24 MR. PERRY: Pair breaking. P-a-i-r.

25 A But generally I know that. Very principle I

1 know that. But deeply about penetration, deep coherence
2 length --

3 Q (By Mr. Beverly) Coherence --

4 A Length.

5 Q Coherence length?

6 A Uh-huh. And pene -- penetration, that's very
7 important in physics. Because that is -- indicate some
8 kind of crystal, you know -- I don't know -- for
9 something like that, he didn't talk to me a lot about
10 that.

11 Q Okay. And -- okay. In 1986 and '87, did you
12 know what the Meissner effect was?

13 A Yes.

14 Q Okay. And I think you already explained it as
15 being -- repelling the magnetic field?

16 A Yes.

17 Q Okay.

18 A I have been working with superconductors almost
19 ten years.

20 Q And you do not believe that in December of 1986
21 Dr. Chu told you that he wanted you to substitute
22 yttrium for lanthanum in the LBCO formula?

23 A Before our meeting, no.

24 Q You're talking about the meeting with Wu and
25 Jim Ashburn --

1 A Yes.

2 Q -- and Pei, correct?

3 A Not in mid-December, no.

4 Q I believe you testified if he had told you that
5 he wanted to do an yttrium substitution in the LBCO
6 formula, that you would have immediately ordered
7 yttrium?

8 A Yes. His order, his required assignment always
9 my first priority.

10 Q You were most loyal to Dr. Chu, correct?

11 A You can say loyalty but I would rather to say
12 that I was highly respect -- he have my great respect,
13 okay. So --

14 Q He --

15 A For -- for example, I tell you. We're missing
16 one chance for the mercury --

17 THE COURT REPORTER: The what?

18 A One chance for the mercury compound, Hg,
19 because I already make one sample. I saw the transition
20 94 degree. And another expertise, Zimberger come. He
21 look at my X-ray pattern --

22 THE COURT REPORTER: Another expertise?

23 A Who -- who you talking about? He's come and
24 look at my pattern and said, "Ruling, that's not 123.
25 Something new." I was excited.

1 But carbon 60 was dis -- discover
2 superconductivity. Dr. Chu immediately stop me to work
3 on the mercury compound. So, "Ruling, jump in for
4 carbon 60." I did. I would put the work aside. I
5 would put the project I'm doing on -- on my hand,
6 ongoing the project to put aside and do whatever Dr. Chu
7 would like me to do it right away, because he's the
8 boss. He decide our direction.

9 Q Dr. Chu is the one who brought you to the
10 United States, correct?

11 A He invited me.

12 Q Invited you?

13 A Yes.

14 Q Allowed you -- made it possible for you to come
15 to the United States, correct?

16 A Yes. He invite me to come over. I come here
17 by invitation as a visiting scholar.

18 Q And were you excited to come to the United
19 States?

20 A Oh, not -- I'm scared.

21 Q You were scared?

22 A I told him I have no English at all.

23 Q Other than that, were you interested in coming
24 to the United States?

25 A Mixture of feeling. But my colleague said,

1 "You are stupid. Why don't you go?" And I told
2 Dr. Chu, "Dr. Chu, number one, I'm not physicist;
3 number two, I have very, very limited English knowledge.
4 I can read the paper but I cannot speak at all. I can't
5 understand it all."

6 And he told me, "Don't worry. I can speak
7 Chinese with you." I have no problem when we work
8 together to communicate. You maybe understand me. And
9 that's why I come.

10 Q When you got to the United States, did you like
11 it?

12 A Yes, I liked it. I feel excited.

13 Q And you've stayed here -- other than going
14 back -- going to Germany --

15 A No, no, no, it's not true. For the contract
16 with my government --

17 THE COURT REPORTER: With who?

18 A Contract with my government, China, I as a
19 visiting scholar only allowed to stay two years.

20 Q (By Mr. Beverly) Right.

21 A And -- but after two years, you have to return
22 to your own university or organization. So, I spent two
23 years here. I didn't ever dream to stay here, no. I
24 never think about that.

25 And then I want to Germany for half a

1 year. That's 1981 to 1982.

2 Q Right.

3 A And '84 I was invited by Dr. Chu to come again
4 as a second visit.

5 Q So, after Germany, you had gone back to China?

6 A For two years.

7 Q Okay. And then '84 you came back?

8 A Yes.

9 Q And since '84 you've lived here?

10 A Yes.

11 Q All right.

12 A Well, even '84 I come I did not plan to stay.

13 Q Right. But since -- but you have lived in the
14 United States --

15 A Yes.

16 Q -- since 1984?

17 A Yes.

18 Q Are you a U.S. citizen now?

19 A Yes.

20 Q You're proud to be a U.S. citizen, I'm sure?

21 A Yeah.

22 Q And you plan on staying in the United States?

23 A Now?

24 Q Yes.

25 A I already retired, yes. My children is here.

1 Q Did Dr. Chu help you become a United States
2 citizen in any way?

3 A It's not Dr. Chu help me. But I believe he
4 have to write some kind of document to help me. But,
5 basically, is during the times of high temperature
6 superconductor discovered, so my lawyer eventually got
7 me in. I only spend very short time -- two months I get
8 my green card.

9 Of course, Dr. Chu have to sponsor. They
10 need to fill some kind of document to sponsor me, make
11 sure I would have salary to stay here in the United
12 States. Those are the things.

13 Q And without that, you would have not been able
14 to stay in United States?

15 A I don't think so. You need a sponsor.

16 Q Right. Okay. And are you married?

17 A I have two children, but my husband pass away.

18 Q I'm sorry. Did your husband ever come to the
19 United States?

20 A Oh, he come a couple -- many times.

21 Q And when you came to the U.S., were you
22 children already adults?

23 A Yes. They are high school students. Later on,
24 they all come here to pursue better degree here.

25 Q Okay. So, your children were able to come to

1 the United States, also?

2 A Uh-huh.

3 Q All right. And how did -- did Dr. Chu help you
4 with that at all?

5 A I think for children doesn't need Dr. Chu's
6 help. Well, they are student visa. So, it can get the
7 permission from the UH accept you as student. I was
8 sending the financial support, so I would take care of
9 the financial, so that come -- doesn't need Dr. Chu's
10 help.

11 Q Where did they go to college?

12 A UH.

13 Q They both went to -- both of your children went
14 to the UH?

15 A Yes. As faculty over there, they -- they have
16 reduced tuition, ten times lower.

17 Q You -- you were born and raised in Communist
18 China, correct?

19 A Correct.

20 Q And when were you born?

21 A 1937.

22 Q So, shortly before -- well, actually World --
23 shortly before World War II, correct?

24 A I think the end of World -- Japanese invasion
25 was in 1945, right? World War II, when did it end?

1 MR. HEWITT: '45.

2 Q (By Mr. Beverly) '45.

3 A I was born in 1937.

4 Q '37. Japanese invaded China --

5 A Yeah.

6 Q -- in the '30s, though, correct?

7 A Yeah. I think that's early. They were there

8 for eight years, I think.

9 Q Right. So, your early childhood was a

10 difficult -- it was a difficult time in China, correct?

11 A Yes.

12 Q And then you lived through the -- the Communist

13 revolution?

14 A Cultural Revolution.

15 Q Yeah -- no -- well, when -- originally when Mao

16 Tse-Tung --

17 A Oh, yeah.

18 Q -- took over the -- the Communist revolution?

19 A Right.

20 Q All right. Which I'm sure was also a difficult

21 time?

22 A Not really. I was very young.

23 Q You may not have understood how difficult it

24 was because --

25 A No.

1 Q -- you were so young?

2 A No. It do not affect the young student.

3 Q And then as you became an adult, though, China
4 was a Communist country, correct?

5 A Yes.

6 Q I don't intend to offend you with this. Were
7 you ever a member of the Communist party?

8 A Huh?

9 Q Were you ever a member of the Communist party?

10 A Remember?

11 Q Were you a member?

12 A No. Because my background is not good. China
13 require you have to born in the family was --

14 THE COURT REPORTER: You have to what?

15 A You were born in the family like work --
16 worker, farmer, soldier, all kind of thing. My father
17 was running business so considered he's a capital.

18 Q (By Mr. Beverly) Okay. Can you describe how
19 life was in Communist China kind of generally?

20 A I -- in general, I enjoyed the time I was in
21 the college -- in the high school. I'm very happy. We
22 are -- we are not rich but everybody the same level, so,
23 no -- no one particular rich like now. Everybody have
24 the same life.

25 And I think I was well educated in China

1 from two point of view. One, academic; secondly is
2 the -- the spiritual. What I learn from that time is
3 don't be selfish. You serve for the people, serve for
4 your country. And all kind of very positive teaching I
5 learn from -- from -- in China. So, I really enjoyed
6 the time there.

7 Of course, during that time, we have go
8 through so many so-called revolutions. Fortunately,
9 see, I was young. I went to college when I was 17. So
10 compare -- some of the students were older so they have
11 bad experience and so and so, so they would suffer
12 something. I basically did not suffer a lot. So, I was
13 very happy.

14 And after the Communist party take over
15 China, my father's business was completely run down. We
16 were very poor at the time. Certainly, overnight we
17 become very poor. And my sister doesn't have money to
18 continue the education.

19 But I did went to the college, no tuition,
20 no pay anything for -- something like free. So I always
21 appreciate that. They give me opportunity to continue
22 my education.

23 Q And you worked at the science institute after
24 college?

25 A Yes. I -- in fact, I -- I was teaching in the

1 university at the very beginning two years. And after
2 that, I was removed to the Academy Science Institute.
3 In China, Academy Science Institute is the top institute
4 in China. We have many branch, depend on major, like,
5 biology, chemistry, physics and computer. I always
6 enroll in there.

7 Q That was a good position? That was a very well
8 thought out position?

9 A That was -- we -- after we graduated, we
10 assigned the student to different place. Top student is
11 put in Academy Science Institute.

12 Q Okay. I'm going to ask you about the meeting
13 in early January of 1987 with yourself and Dr. Hor and
14 Dr. Wu and Li Gao. Okay? You know which meeting I'm
15 talking about?

16 A Yes.

17 Q And that occurred in Dr. Hor's office, correct?

18 A Yes.

19 Q And Wu and -- and Wu had come to Houston with
20 his colleague Jim Ashburn, correct?

21 A Correct.

22 Q Okay. And they had come to test a --

23 A Lanthanum strontium compound.

24 Q Right. Lanthanum strontium compound that was
25 in a nominal 214 structure, correct? You have to give

1 me a verbal answer.

2 A Yes.

3 Q Okay. And they could test for -- they were
4 from Alabama, correct?

5 A Yes.

6 Q They could test for resist -- resistivity?

7 A Yes.

8 Q -- in Alabama?

9 A Yes.

10 Q They couldn't test for the Meissner effect,
11 right?

12 A Correct.

13 Q So they'd come to look --

14 A Confirm -- for to confirm the -- the sample.

15 Q Do you recall what the transition temperature
16 of that lanthanum -- lanthanum -- strontium?

17 A I think the onset is about 45.

18 THE COURT REPORTER: The what?

19 A The onset.

20 Q (By Mr. Beverly) Onset.

21 A O-n-s-e-t. They have sharp drop. We call that
22 onset transition temperature.

23 Q As you testified, it was Dr. Chu who suggested
24 the strontium substitution and suggested that Wu work on
25 that, correct?

1 A Correct.

2 Q Did Dr. Chu tell that you or --

3 A Yes.

4 Q Okay.

5 A He called me back from Boston. He know I was
6 working on that. He told me, "Don't do it because I
7 already talk with Mau Kwen and let Mau Kwen to do it."

8 Q And that was around the beginning of December?

9 A During the MIS meeting in Boston, around that
10 time, November, December. I can't remember correctly.
11 But he called back from Boston. I remember not only one
12 time. The second time he also told me, "Don't do it."

13 Q Okay. So you remember very specifically a
14 conversation --

15 A Yes, correct?

16 Q -- where he said Dr. Wu is going to work on
17 strontium?

18 A Yes. He also said, "Dr. Wu can never compete
19 with you. Don't compete with him." He always take
20 Dr. Wu as our team.

21 Q That turned out to not be exactly true,
22 correct?

23 A You know, never expecting this result. I would
24 never dream this result.

25 Q Now, the strontium substitution worked. It

1 created a relatively high temperature superconductor?

2 A Correct.

3 Q Okay. But the calcium substitution for barium
4 did not work?

5 A No.

6 MR. HEWITT: Objection to form.

7 Q (By Mr. Beverly) Did you do preparing -- let me
8 start over on that.

9 Did you prepare lanthanum calcium samples?

10 A I think I should because I have the calculation
11 in my book, but I did not see the measurement results so
12 I -- I'm not quite clear.

13 But I know that after that very soon we
14 got the news from Bell Lab. They claim it's only 25
15 degree kelvin.

16 THE COURT REPORTER: Only 25 degree?

17 A Yeah, transition temperature is not higher.
18 It's lower.

19 Q (By Mr. Beverly) So, calcium suppressed the
20 transition temperature?

21 A Yes.

22 THE VIDEOGRAPHER: Seven minutes on this
23 tape.

24 Q (By Mr. Beverly) And Bell Labs had figured that
25 out, right?

1 A I believe he report it.

2 Q And that was -- do you know when that was that
3 you found out that Bell Labs calcium work had -- had not
4 succeeded?

5 A Just a similar time at that time.

6 Q Sometime in --

7 A Similar -- yeah, just similar time.

8 Q Sometime in December?

9 A Yeah.

10 Q Do you believe --

11 A Or either early or either late.

12 Q But it was before the meeting with Wu and
13 Dr. Hor --

14 A Yes.

15 Q -- and Li Gao?

16 A Yes. Yes.

17 Q Because at that meeting you all were looking
18 for --

19 A Yes.

20 Q -- or were thinking about alternative ways to
21 proceed?

22 A Correct. That's why we think about alternate
23 the first element --

24 THE COURT REPORTER: That's why we what?

25 A We think about replace the first element.

1 Previously we substituted or replaced a second element.

2 Q (By Mr. Beverly) The second element was barium,
3 right?

4 A Yes.

5 Q The first element was lanthanum?

6 A Yes.

7 Q So, you had done what you could do or what you
8 thought you could do on --

9 A Yes.

10 Q -- barium substitution?

11 A Yes.

12 Q And so y'all wanted to -- started thinking
13 about lanthanum substitution?

14 A Yes.

15 Q Up to that point, the focus had been on
16 substituting for barium?

17 A Yes -- no, lanthanum. Oh, after that -- before
18 that, yes.

19 Q Yeah. Up to January of '87, the focus had been
20 substituting the second element barium -- barium?

21 A Yes.

22 Q Nobody at -- at that point, no one had
23 suggested any substitutions for lanthanum in LBCO before
24 that meeting in January?

25 A Even I didn't aware of that.

1 Q You weren't aware of anyone suggesting --

2 A No.

3 Q -- substitutions for lanthanum --

4 A Not yet.

5 Q -- before the meeting in January?

6 A Yeah.

7 Q And I think you testified that you do not
8 remember that Dr. Hor pulled out a periodic table at
9 that meeting?

10 A I do not remember detail, either. I was
11 standing. I didn't sit there. So, if he pulled the
12 table maybe, yes. I don't know. I didn't remember.

13 Q It's possible that he did? You just don't
14 remember?

15 A Yes. Because I was standing. I didn't sit
16 there. He -- only one chair there. I remember Mau Kwen
17 also stand there.

18 Q It's a small office?

19 A Uh-huh.

20 Q Now, at that meeting, you -- you -- you
21 suggested that the group might try substituting lutetium
22 for lanthanum in LBCO?

23 A I mentioned one sentence. I said, "Lutetium
24 also small."

25 Q How did you come up with the idea of lutetium

1 might also work?

2 A Because we want to substitute something with
3 small atom size.

4 THE COURT REPORTER: Small what?

5 A Atom.

6 Q (By Mr. Beverly) Small atom size.

7 A You can --

8 MR. HEWITT: A-t-o-m.

9 THE COURT REPORTER: Oh, atom.

10 A Atom size. And lutetium is the corner here.

11 Q (By Mr. Beverly) So a periodic table would help
12 you --

13 A Oh, we have this all the time.

14 Q Uh-huh. A periodic table helps you
15 determine --

16 A Right, right, correct.

17 Q -- what atomic size is, right?

18 A And then Pei must be look at this column. See?
19 Lanthanum. On the top is yttrium. And then I remember
20 he even mentioned scandium because that's even smaller.
21 Sc --

22 THE COURT REPORTER: You mentioned what?

23 A Sc -- Sc is scandium.

24 Q (By Mr. Beverly) So, it wouldn't have been
25 unusual for Dr. Hor to pull out a periodic table when

1 you're having this kind of discussion?

2 A I don't think it's unusual.

3 Q Do you -- you might -- it's kind of hard to
4 hear you --

5 A I don't think unusual. I think it's quite
6 natural.

7 Q Were you excited by this idea of -- of working
8 on the first element doing substitutions for lanthanum?

9 A I excited all the time.

10 Q Okay.

11 A If there's anything new coming out, I always
12 excited.

13 Q All right.

14 A I like to try different things. So, it's not
15 particularly subject -- yttrium is exciting. I was
16 excited.

17 Q Okay. Did you think that yttrium substitution
18 would have to work and create a -- a high temperature
19 superconductor?

20 A No, I -- I don't know yet. Because so far
21 nobody can predict any one -- any superconductor.
22 They're all based on experiments, principles.

23 Q So it was trial and error, basically?

24 A That's what I think.

25 Q Okay.

1 A I -- that's what I - I think.

2 Q For example --

3 A I don't know.

4 Q Well, for example, stront -- strontium had

5 worked?

6 A Uh-huh.

7 Q And that might lead you to think that

8 calcium --

9 A Calcium.

10 Q -- even smaller would work?

11 A Right.

12 Q But it didn't?

13 A No -- yes.

14 Q So you could not be sure that yttrium would

15 work --

16 A Yes.

17 Q -- at that time? You could not be sure the

18 lutetium would work?

19 A I -- I do not mind to try it. Whenever it is

20 possible I would try it.

21 Q Is yttrium magnetic? Is lutetium -- you have

22 to give me a yes or no.

23 A No.

24 Q Is lutetium magnetic?

25 A No. Maybe -- no, as I know.

1 Q Now, all during this period in -- in '86 and
2 '87, before and after even, the focus of this lab was to
3 look for high temperature superconductors?

4 A Correct. Continue to pursue the high
5 temperature superconductor. That's our goal.

6 Q And that was the focus of Dr. Chu's career
7 pretty much, correct?

8 A Correct. Our group's goals.

9 Q All your work was directed -- most of your work
10 was directed toward looking for new superconductors?

11 A Correct.

12 Q And the specific focus was using high pressure
13 to study superconductivity and look for superconductors?

14 A My group was -- the name is high pressure low
15 temperature lab. So I believe the high pressure is a
16 very important method for them to -- to look for the way
17 to increase transition temperature, number1, for the
18 resistance superconductor.

19 Number 2, use it as a way to look for new
20 superconductor. That's only one of the ways but that's
21 a specialty in Dr. Chu's group.

22 THE VIDEOGRAPHER: We need to change the
23 tape .

24 MR. BEVERLY: Oh, sorry. Take just like a
25 five-minute -- quick five-minute break?

1 THE VIDEOGRAPHER: We're off the record at
2 3:24. This is the end of tape 2.

3 (Recess from 3:24 to 3:40).

4 THE VIDEOGRAPHER: Okay. Going on the
5 record. This is -- back on the record, tape No. 3 in
6 the deposition of Ruling Meng. Back on the record at
7 3:40 p.m.

8 Q (By Mr. Beverly) While Dr. Chu was serving at
9 the NSF in D.C. during '86 and '87, he would call you
10 almost every day, correct?

11 A Yes. After the high temperature superconductor
12 start.

13 Q After the Bednorz and Müller article?

14 A Correct.

15 Q So, sometime in early November or thereabouts
16 through the rest of his service at NSF, he would be in
17 pretty much contact -- constant contact with you as far
18 as telephone calls, correct?

19 A Correct.

20 Q Okay. Did he have a particular time of day
21 when he would call you?

22 A Lunchtime. Always lunchtime. One hour
23 different in Washington, D.C.

24 Q So, when he would go on his lunch, he would
25 call you?

1 A Yes.

2 Q So, it would be around 11:00 o'clock your time?

3 A Yeah.

4 Q Okay. And if he had something that he wanted
5 you to do specifically, he would tell you over the
6 phone?

7 A Yes.

8 Q For example, like doing the strontium
9 substitution? He either told you over the phone or in
10 person, right?

11 A That -- I don't think it was from the phone.
12 Most of the conversation during that time is we report
13 to him the progress.

14 Q Okay.

15 A He asked me --

16 THE COURT REPORTER: The what?

17 A Progress of the -- the lab. Particularly,
18 during the time we apply the pressure, each day increase
19 the pressure, the Tc increasing, so I always report to
20 him, "Today is 37, 39," something like that.

21 And, also, I remember he was a lot
22 responsibility to try to contact the outside group to --
23 because we had limited facilities. Some of the
24 measurement -- physics measurement we may not be
25 carrying on at our lab, so he was -- had a lot of

1 contact with outside.

2 So many times he call me to send out a
3 sample, give me the direction who I supposed to send the
4 sample to. But since the work was going on well at that
5 time he may not think he have to discuss a lot of what
6 to do the next step.

7 Q Okay. If he wanted to -- if he wanted to, he
8 had the opportunity to tell you whatever --

9 A Oh, sure --

10 Q -- he wanted you to do?

11 A -- sure. Sure.

12 Q And you would have done whatever --

13 A Sure.

14 Q -- he wanted you to do?

15 A Sure, sure. Certainly.

16 Q If he wanted to talk to Dr. Hor, was Dr. Hor
17 generally available when he called in?

18 MR. HEWITT: Objection, form.

19 A Sure. Dr. Hor is in the lab, right.

20 Q (By Mr. Beverly) Okay.

21 MR. BEVERLY: Can we go off the record one
22 second?

23 THE VIDEOGRAPHER: Off the record at 3:43.

24 (Recess from 3:43 to 3:44).

25 THE VIDEOGRAPHER: Back on the record at

1 3:44.

2 Q (By Mr. Beverly) Would you take a look at what
3 has previously been marked as Exhibit No. 6? It should
4 be in your stack there.

5 A That's on this form I know.

6 Q I want that one, too, so go ahead and pull that
7 out. And then there's -- this -- this is No. 6 here.

8 A Uh-huh. What's your question?

9 Q Just go ahead and get the document and I can
10 then ask you the questions. Okay?

11 THE WITNESS: Can you check that?

12 MR. PERRY: Six or 17?

13 MR. BEVERLY: Both of them, please.

14 A Yes.

15 Q (By Mr. Beverly) All right. You're looking at
16 Exhibit No. 6?

17 A Okay.

18 Q Let's actually -- let's take a look at
19 Exhibit No. 17 first. I'm sorry. And it's entitled
20 "Standing Account Requisition Form," correct?

21 A Uh-huh.

22 Q Is this the document that the lab would use to
23 order materials from the chemistry department?

24 A I don't remember. Sometime we just go to the
25 chemistry department. This one I saw quite often. This

1 one I don't know. May be different form.

2 Q Okay. So, do you recall what the procedure was
3 if you wanted to get --

4 A Yes.

5 Q -- chemicals from the chemistry --

6 A Yes.

7 Q -- department?

8 A Dr. Chu set up account in chemistry department
9 to purchase the -- storage room -- they call chemistry
10 storage room. We can either order that directly go to
11 the company, buy -- but very often we go to chemistry
12 storeroom to order.

13 Dr. Chu set up account over there, and he
14 authorize only -- as long as I my name -- can use my
15 name so they can use the money from the account. And
16 then we ask the student "go over there" -- I don't know
17 how they fill out the form; but mostly they go over
18 there to tell them, "We want to order this one, this
19 one, charge in Dr. Chu's account" --

20 Q All right.

21 A -- "and approved by Ruling Meng." And that's
22 the procedure.

23 Q Okay. So, if you wanted to get chemicals for
24 the lab, there were two things you could do. You could
25 either get them from the chemistry store room --

1 A Correct.

2 Q -- or you could order them yourself from --

3 A From a company.

4 Q -- from a chemical company -- chemical
5 supplier?

6 A Right.

7 Q Okay. So, for example, if you wanted to order
8 some yttrium oxide, you could have ordered that from the
9 chemical stock room if they had it, right?

10 A In fact, they -- sometimes they don't have it.

11 Q But if they --

12 A They have to order it for us.

13 Q Right. If they didn't have it, you could
14 have -- you could have ordered it from a chemical
15 supplier?

16 A Yes.

17 Q Because if we look here, the cost of the
18 yttrium oxide that you were ordering here on -- or that
19 Mr. Campbell at least was ordering here on January the
20 12th --

21 A Uh-huh.

22 Q -- it says '86. Do you think that was actually
23 supposed to be '87?

24 A Oh, yeah. No, no, no. Hold on just -- oh, it
25 should be '87.

1 Q You think that is probably from 1987?

2 A Yes.

3 Q Okay.

4 A Yes, 1987.

5 Q All right.

6 A '86 January -- no, nothing happened at that
7 time.

8 Q Okay. You wouldn't have been ordering yttrium
9 in January of '86?

10 A No. I don't think so.

11 Q Okay. Or lutetium?

12 A No.

13 Q Okay. So, for example, if you wanted to order
14 yttrium oxide and the chemistry storeroom didn't have
15 it, you could have ordered it from an outside chemical
16 supplier?

17 A Yes.

18 Q For example --

19 A It happened later on.

20 Q Yeah. For example, here the cost of the
21 yttrium oxides is about -- not a whole lot. It's about
22 \$80, right?

23 A Uh-huh.

24 Q So, it wasn't a large expenditure for the lab
25 to buy some yttrium oxide?

1 A During that time it was quite a lot.

2 Q It was quite a lot?

3 A We don't have a lot of money.

4 Q Okay. All right. So, if you look at Exhibit

5 No. 6 --

6 A Yes.

7 Q -- it also has Mr. Campbell's name on it?

8 A Uh-huh.

9 Q And it's dated January the 14th of '87,

10 correct?

11 A Uh-huh.

12 Q It says "For Ruling," right?

13 A Uh-huh.

14 Q Does this appear to be the same order that is

15 Exhibit No. 17, the same chemicals?

16 A Yes.

17 Q You're ordering one cerium oxide, three

18 gadoliniums, two lutetiums and one yttrium on each

19 sheet, correct?

20 A Well, I think probably that's a duplicate.

21 Q Okay.

22 A I -- I'm not quite sure. Look at the total

23 cerium oxide, \$21.70. And second one gadolinium -- hold

24 on -- no, they're different. Okay.

25 Q It shows a -- it shows a unit -- it shows a

1 unit price --

2 A Uh-huh.

3 Q -- of \$63, correct?

4 A Uh-huh.

5 Q And then over here on Exhibit No. 17 it also
6 has a unit cost of \$63, right?

7 A Uh-huh.

8 Q And three times 63 would be 189, right?

9 A Right.

10 Q Okay. And then the lutetium shows a unit cost
11 of \$112 on each one, right? And yttrium has a cost of
12 \$79.50 --

13 A Yes.

14 Q -- on each one, correct?

15 And then the only difference is there is a
16 stock room charge added on to this one --

17 A Oh, okay.

18 Q -- on Exhibit No. 6. Do you see that?

19 A Yeah.

20 Q Okay. Do you know who signed -- where it says
21 "received by," do you know whose signature that is?

22 A Daniel.

23 Q That's Daniel Campbell's signature?

24 A No. This one --

25 Q On -- I'm looking on Exhibit No. 6 down at the

1 bottom where it says "received by."

2 A That is not Daniel.

3 Q That's not Daniel?

4 A No.

5 Q Okay.

6 A Daniel write very clear, his handwriting. This
7 one is Andy -- it's not Andy. I don't remember which
8 one.

9 Q So you don't know whose signature that is?

10 A I don't even recall this name. Can you read
11 the name --

12 Q No, I cannot.

13 A -- so I can remind me.

14 Q I cannot read it. I -- but you do not
15 recognize that signature?

16 A No.

17 Q Okay. That's fine.

18 A Who is these people? See, look at No. 7. The
19 signature is also one -- the same name. But it is
20 ordered by Andy. I know Andy. But I do not remember
21 this name.

22 Q All right. Does it just have Andy?

23 A Ordered by Andy.

24 Q Okay. No last name?

25 A No.

1 Q All right.

2 A But I didn't -- I do not remember this person.

3 Q May I see that Exhibit No. 7, please? Hand it
4 to me. Thanks.

5 A What is this name? Rem -- Rem -- Rem -- we do
6 have other student but I just cannot recall.

7 Yeah, we have another student, but I do
8 not recall his name. Yeah, he's a tall guy, short time
9 in our group.

10 Q All right. At the time you were making these
11 orders, of these -- these are all rare earths, correct?

12 A Uh-huh.

13 Q Did you know which of these rare earths were
14 magnetic and which ones were non-magnetic back in '87?

15 A These four of them?

16 Q Yeah, just these four on Exhibit No. 6. Did
17 you know which of those rare earths were magnetic and
18 which ones were not?

19 A I know gadolinium is magnetic.

20 Q You knew gadolinium was magnetic?

21 A Because Pei was -- mentioned about that. The
22 other, I cannot pay a lot of attention about that.

23 Q Okay. On Exhibit No. 7 --

24 A Uh-huh.

25 Q -- there are some additional rare earths that

1 are ordered, correct?

2 A Which one? Is it barium -- tellurium --

3 Q Several of those --

4 A Europium.

5 Q Those are all --

6 A Neodymium, yeah.

7 Q Those are all rare earths, correct?

8 A Right, correct.

9 Q In 1987, did you know whether the rare earths
10 that are listed on Exhibit No. 7 were magnetic or
11 non-magnetic?

12 A No, I didn't -- I didn't really look at it.

13 Q Okay. At that time. You know now -- you know
14 now that some of them are magnetic and some of them are
15 non-magnetic?

16 A Yeah.

17 Q But back in 1987, you didn't necessarily know
18 that?

19 A Huh-uh.

20 Q Okay. As a material scientist before then, you
21 had not done a lot of -- had you done much work with
22 rare earth compounds before '86 and '87?

23 A A little bit.

24 Q Just a little bit?

25 A Uh-huh. We did. But the metal alloy --

1 THE COURT REPORTER: The what?

2 A Metal alloy, not oxide. So, I know some of
3 them are magnetic moment. Some of this, I never contact
4 so many rare earth.

5 Q (By Mr. Beverly) Do you know when -- you said
6 Dr. Hor had mentioned that gadolinium was magnetic. Do
7 you recall when you had a discussion with him regarding
8 gadolinium being magnetic?

9 A Well, I think in the lab -- low temperature lab
10 and we did -- low temperature lab. And we talk almost
11 every day because exchange information. I tell him what
12 we have from the materials synthesize and he would refer
13 to let me know -- I asked him to assign the student take
14 some measurement, some kind of stuff, and they would
15 report -- they would refer that and talk to me about the
16 result of the low temperature measurement result.

17 And then after yttrium, the
18 superconducting is very good, then we talk about what
19 shall we do the next. Just in the lab we talk about it.
20 We didn't sit down and have any serious discussion.

21 Q So after yttrium, you discovered that yttrium
22 worked --

23 A Yes.

24 Q -- which was around the end of January --

25 A Yes.

1 Q -- of '87?

2 A Yes.

3 Q At some point after that --

4 A Uh-huh.

5 Q -- you had a discussion with Dr. Hor about

6 rare earths and -- and at that point he -- he mentioned

7 to you that gadolinium was magnetic?

8 A Yes.

9 Q You don't recall exactly when that was?

10 A What -- which day I can't.

11 Q Okay. But you know it was after the yttrium

12 discovery --

13 A Correct.

14 Q -- was confirmed?

15 A Correct.

16 Q Did Dr. Chu direct you to order the rare earth

17 elements that are shown on Exhibit 6 and Exhibit 7?

18 A As I say before, I in the lab responsible for

19 the material synthesis and I'm the one who is

20 responsible to all the order supply -- chemical supply

21 we needed.

22 So, Dr. Chu do not have direct me to order

23 anything, unless a special thing he requires it.

24 Dr. Chu, "Ruling had ordered something else." But

25 mostly he know it. I always keep the supply -- all

1 supply enough for us to work for. Also look at the --

2 THE COURT REPORTER: The what?

3 A The money we have, I would not order large
4 quantity of the material.

5 Q (By Mr. Beverly) So with respect to Exhibit 6
6 and Exhibit 7, it's your testimony that Dr. Chu did not
7 specifically direct you to order these rare earths?

8 A I don't think so.

9 Q Okay.

10 A Sometime he may not know what kind of chemical
11 supply I keep there, because I'm the one to buy the
12 thing and keep the lab.

13 Q And as -- as the person responsible for
14 material synthesis, that --

15 A Yeah.

16 Q -- that made sense that you would be --

17 A Yeah.

18 Q -- in charge of what material --

19 A Yeah.

20 Q -- you kept?

21 A Yeah. He's -- it's not necessary for him to
22 know what we have. I mean, that's not his
23 responsibility.

24 Q Did Dr. Chu ever synthesize compounds?

25 A I believe before. Before I know him. But

1 since --

2 Q Well --

3 A Since I come to the lab, I don't think so.

4 Q Okay. So, after you came to the lab to do
5 material synthesis, Dr. Chu did not work on synthesis --

6 A No.

7 Q -- of compounds?

8 A No. But he did before, I know it. He did
9 before.

10 Q And you said you knew that Dr. Hor had --
11 pardon me -- Dr. Hor had synthesized at least one LBCO
12 sample --

13 A Yes.

14 Q -- correct?

15 A Yes.

16 Q That was one that displayed very high
17 temperature superconductivity for a very brief period of
18 time, correct?

19 A Yes.

20 Q And then the signal -- the -- the signal
21 disappeared, as it were?

22 A Second measurement it disappeared, not stable.

23 Q And Dr. Hor may have prepared other samples?
24 You just don't recall at this time?

25 A I don't recall.

1 Q You remember that particular sample because it
2 was -- it had a transition temperature of around 70 when
3 it was first --

4 A Correct.

5 Q That was -- that was very unusual when that
6 happened, correct?

7 A Correct.

8 Q Going back to the Exhibit 17 and 6 here. Were
9 you ordering lutetium and yttrium because of the
10 discussion that had taken place in Dr. Hor's office in
11 early January?

12 A Yes. After that, we decide to have that
13 because I know I do not have this oxide, rare earth
14 oxide.

15 THE COURT REPORTER: The what?

16 A I do not have this rare earth oxide in my lab.

17 Q (By Mr. Beverly) And that conversation you
18 think took place the first few days of January of '87,
19 January 2nd, January 3rd, somewhere around there?

20 A Somewhere around there.

21 Q Okay. And then it's eight, nine, ten possibly
22 days later that the request for lutetium and yttrium
23 is --

24 A Uh-huh.

25 Q -- is placed, correct?

1 A Yes, correct.

2 Q Why was there a delay of -- of eight, nine, ten
3 days in making this order?

4 A Mostly -- that's a very regular order. It's
5 normal. It take ten days to -- you mean why it take so
6 long to order.

7 Q Right.

8 A I believe the school was closed, chemistry
9 department. The storage room was not open.

10 Q Okay. So, the first week or so of January --

11 A Yeah.

12 Q -- the chemistry department stock room --

13 A Yeah.

14 Q -- was typically closed --

15 A Yeah.

16 Q -- for the Christmas holidays?

17 A Yes.

18 Q Okay. And then opens up again --

19 A Yes.

20 Q -- second week of the year --

21 A Yes --

22 Q -- generally?

23 A Yes.

24 Q Okay.

25 A Otherwise, I would not advise Mau Kwen to do

1 first.

2 Q Okay. Let's -- let me ask you a few things
3 about that.

4 You -- at the -- was it at the meeting?

5 A After the meeting.

6 Q It was after the meeting --

7 A We walk out from Pei's lab.

8 Q Let me -- let me ask the question. Okay? It
9 will go a little smoother if I do it that way. Okay?
10 I'm not fussing with you or anything. It's just helpful
11 for the court reporter and for us.

12 A All right.

13 Q Okay. So, after the meeting in Dr. Hor's
14 office in early January of '87 --

15 A Uh-huh --

16 Q -- you talked to Dr. Wu?

17 A Wu.

18 Q Right, Dr. Wu?

19 A Uh-huh.

20 Q And you made the suggestion to him --

21 A Uh-huh.

22 Q -- that he work on yttrium?

23 A I -- yes, of course, I already -- I asked him
24 to go back to NASA in Alabama to ask them for yttrium
25 oxide so we can start the work soon. Because it take me

1 for half -- half month order and receive the yttrium
2 oxide.

3 Q And that was because the school was kind of
4 shut down at that point?

5 A Not only that. Also, the processing require at
6 least some time -- later on we have money. We always
7 order the next-day delivery.

8 Q Uh-huh.

9 A But at that time we don't dare to do that. So
10 the regular times after order, you have at least one
11 week to ten days to receive the material.

12 Q Okay. And Dr. Wu -- you thought that Dr. Wu
13 would have quicker access to yttrium?

14 A Yeah, of course. There-- I know there's NASA
15 nearby.

16 Q Dr. Wu agreed to do that?

17 A Yeah. Nothing objection. He said yes, yes.

18 Q Did you give Dr. Wu any formulas for the
19 yttrium substitution?

20 A No.

21 Q Okay.

22 A Also, he know what we are doing before,
23 basically 214. At that time we don't know anything
24 about other.

25 Q Dr. Wu knew the 214 formula --

1 A Yes.

2 Q -- at that time?

3 A Yes.

4 Q And all your nominal formulas -- or pretty much
5 all of your nominal formulas at that time were based on
6 214?

7 A Right.

8 Q Did you ask Wu -- Dr. Wu to get lutetium from
9 NASA also?

10 A No.

11 Q Why not?

12 A Well, because mainly I don't know it work or
13 not. And Pei was suggesting use yttrium. That's why I
14 said go ahead and do yttrium first. Lutetium is my
15 suggestion. I don't know whether my idea is correct or
16 not. I can do it myself. I don't bother to ask him to
17 do it.

18 Q So because Dr. Hor had asked to do the yttrium
19 substitution --

20 A He suggest do it.

21 Q -- you gave -- you gave that first priority?

22 A Right. Compare for that. I always respect the
23 physicist's suggestion.

24 Q So you respect Dr. Chu's decision --

25 A First priority.

1 Q First priority. And while Dr. Hor was there,
2 you would respect his decisions?

3 A Correct.

4 Q In this time frame in 86 and '87, did you know
5 whether ytterbium was a magnetic rare earth?

6 A I did not concern about that at that time. I
7 did not think about ytterbium at that time. Ytterbium
8 take a long, long time to make it in superconductor.
9 It's not --

10 Q Now, you testified that Li Gao was also present
11 at that meeting in January of '87. Or do you remember?

12 A It's hard for me to say. I seem to remember he
13 stand on the door -- lean on the door. But after that,
14 I remember once we asked him he said he didn't remember,
15 he's not very sure. I'm not quite sure. I rather say
16 possible.

17 Q All right. And other than asking him whether
18 he remembered that meeting, have you ever talked to Li
19 Gao about the meeting?

20 A About what?

21 Q About the meeting in January.

22 A No.

23 Q He told you he didn't remember it?

24 A Yes.

25 Q Okay.

1 A It's possible. He's a student at that time.
2 He -- it's difficult for him to catch up what we are
3 discussing. That's why he do not have my impression
4 what you're talking about.

5 Q Is he from China also?

6 A From China.

7 Q Okay.

8 A But he's a student.

9 Q At that time?

10 A Yes. So he just stand there. It's possible so
11 he don't remember. I don't know.

12 Q At the meeting were y'all speaking in Mandarin?

13 A Yes.

14 Q And does Li Gao speak Mandarin?

15 A Yes. Because Jim Ashburn was not there.

16 Q If Mr. Ashburn had been there, you all would
17 have spoken in English?

18 A Yes.

19 Q Did Dr. Chu ever suggest to you that you should
20 replace lanthanum and LBCO with ytterbium?

21 A Not before the meeting.

22 Q After the meeting, did Dr. Chu suggest to you
23 at some point that you should replace lanthanum and LBCO
24 with ytterbium?

25 A Ytterbium?

1 Q Ytterbium.

2 A I don't recall that.

3 Q Okay. You may have misunderstood me. Did you
4 ever -- do you recall Dr. Chu ever tell you to replace
5 lanthanum with ytterbium?

6 A I do not recall that. That's number 1.
7 Number 2, during this time, we -- our results come out
8 too quick. Each day we had new results. I don't think
9 Dr. Chu have time to think which one we should do. He
10 know we go through all the rare element within one week
11 so definitely he know we would do all of them. I don't
12 think he would point out which one to do. It's not
13 necessary for him to do that.

14 He had a lot of thing to do outside. He
15 wanted to have special meeting in MIS, APS meeting and
16 set up all connections so -- he trust how we can do it.
17 I don't think he have to -- to tell us which one should
18 do it.

19 Q Did Dr. Chu ever tell you that, in his opinion,
20 a particular substitution in LBCO would have to work,
21 that is, would have to create a high temperature
22 superconductor?

23 A I don't recall. He might talk to me something
24 like that. He always have a lot of full confidence.
25 Most of time of he would say it should work, definitely

1 work.

2 Q He also would tell you, though --

3 A Maybe. I don't recall which exactly.

4 Definitely we have talked some about -- because we all
5 want to research high Tc temperature --

6 THE COURT REPORTER: What to what?

7 A We always look for -- search for new material
8 or higher temperature. So that's possibility he talked
9 to me a variety of subjects and substitution. But I
10 cannot remember which one.

11 Q (By Mr. Beverly) He also told that you if you
12 failed a thousand times, it didn't matter?

13 A This is not he told me. That's my philosophy.

14 Q That's your philosophy?

15 A I told him, "Dr. Chu, I'm not afraid about
16 fail." But we cannot miss the chance. He -- we have
17 the same point.

18 And I tell you something very funny. Many
19 times in the early morning he walk in my office, "Give
20 me a formula. So, "Ruling, do this one. That's my
21 dream formula." He was dreaming in the night, and he
22 believed this one is high temperature superconductor.
23 And I look at that. Some of them I believed wouldn't
24 work. He said, "Go ahead and try it." I do it.
25 Because so far no one can predict which one can be high

1 Tc -- no one -- so you got to try it by experiments
2 to -- to -- to practice to see which ones could. So he
3 do have --

4 Q So -- okay. So on some occasions, at least,
5 Dr. Chu gave you a formula that had come to him in a
6 dream?

7 A After that -- March, after this YBCO, later on,
8 before that, he's too busy. Everybody is busy with our
9 group. We even do not have time to finish paper, I
10 believe.

11 Dr. Chu did not have time to finish paper
12 about lanthanum-strontium even -- even though we have
13 result. In fact, it's later Bell Lab publish paper.
14 So, I believe he's very busy at that time for all the
15 rare -- he never think about something else.

16 Later on -- later on after this high Tc,
17 and he always have all the idea. And then I even
18 require him to write it down in the paper. I will stick
19 there. So -- because sometime we get argument. So --

20 Q Okay. So, it was after March of '87 that he
21 came to you a couple of times at least --

22 A No, no, that's -- that's very late. And that
23 time -- that year we were so busy. He do not have --
24 create any new formula, any new element, no, he did not
25 during that period.

1 Q I'm asking about the dreams that --

2 A That was later. Very late.

3 Q That -- that was years later?

4 A Oh, a few years later.

5 Q A few years later?

6 A Yeah.

7 Q All right.

8 A Well, I mean, he always have many thinking
9 sometime. But, of course, I know what you're thinking
10 may not be successful. I understand that truly.

11 THE COURT REPORTER: I'm sorry?

12 A I understand not you think that it would be
13 true, no. So --

14 Q (By Mr. Beverly) All right. After the meeting
15 in January of 1987 in Dr. Hor's office, did you tell
16 Dr. Chu about what you all had discussed at that
17 meeting?

18 A Yttrium?

19 Q The yttrium substitution and the lutetium
20 substitution?

21 A I remember when he came back, I asked, "Pei,
22 have you talked to Dr. Chu about yttrium?" I remember
23 very likely Pei talked to him first. I -- I'm not quite
24 sure that's -- why I think this way? Because I consider
25 all the physic measurement, other thing, Pei was asked

1 to do that so I be -- asked Pei, "Have you talked with
2 Dr. Chu?"

3 Q Did he tell you he had?

4 A I didn't remember he said yes or no. I didn't
5 remember. But anyway --

6 Q If he said no, you would have talked to
7 Dr. Chu, right?

8 A No, he didn't say that.

9 Q Okay.

10 A No, he didn't say, "You would talk to." I told
11 him -- I said, "Have you talked to Dr. Chu about
12 yttrium?" But what he say I -- if he say yes or no, I
13 don't know -- I don't remember.

14 Q Was Dr. Chu -- the day of this meeting in
15 January of 1987, do you recall whether Dr. Chu was
16 present in the lab that day?

17 A Which day?

18 Q The day of the meeting with -- in Dr. Hor's
19 office in early January of 1987, do you recall what --

20 A If it not weekend, he's not there. If he was
21 Houston, he would join the discussion. I believe it was
22 not a weekend.

23 Q So, if -- he would have been included in the
24 discussion --

25 A Sure.

1 Q -- if he had been in the lab that day?

2 A Sure. That's what I think. He should, right?

3 And he will. That's what I think.

4 Q Did Dr. Chu ever tell you that based on his
5 analysis of the lab data that you all had been working
6 on, that yttrium and lutetium had to work?

7 A When?

8 Q In late December --

9 A Before?

10 Q -- before this meeting in January.

11 A No, no.

12 Q No? Did he ever tell you that after the
13 meeting in January?

14 A After the meeting, no, he didn't told me it
15 would -- it would work. If Dr. Chu told me that, I
16 support in January to get the sample of yttrium oxide.
17 But I received the yttrium oxide and do the calculation.
18 I not start to work the yttrium sample after -- after
19 the end of the -- the 29th that month. Otherwise, if
20 Dr. Chu emphasis that, he say, "Ruling, this must be
21 work," I believe I would do it right away. That's what
22 I'm thinking.

23 Q Okay. So, if Dr. Chu had told you this has to
24 work -- yttrium and lutetium have to work --

25 A I would do it right away. I would have done

1 all the -- even though I under a lot of pressure, I know
2 it.

3 Q Would you have found a way to get yttrium and
4 lutetium?

5 A Well, I received the material in -- in the mid
6 January 20 or some time but I did not start to make the
7 yttrium sample yet.

8 Q Would you have found -- if Dr. Chu had told
9 that you that earlier, would you have found a way --
10 would you have tried to find a way to get --

11 A I will.

12 Q -- yttrium and lutetium quicker?

13 MR. HEWITT: Objection, form.

14 A I will. I would do that.

15 Q (By Mr. Beverly) All right.

16 MR. HEWITT: I apologize -- excuse me. I
17 apologize for the interruption, but if she's going to
18 start answering in the middle of your question, I don't
19 have any choice.

20 MR. BEVERLY: I understand.

21 Q (By Mr. Beverly) If you could -- if you could
22 wait until I finish my question before you start
23 answering, it will help and it will help the court
24 reporter quite a bit. Okay.

25 A Yes.

1 Q It's very hard for her to take down two people
2 talking at the same time. Okay?

3 Did Dr. Chu ever tell you that any other
4 particular composition that he had thought of would have
5 to create a high temperature superconductor based on his
6 analysis of the lab data?

7 A When?

8 Q At any time.

9 A Yes. Later on, yes.

10 Q Later on. After March of '87?

11 A Yes.

12 Q Okay. And do you recall what he told you he
13 thought would have to work?

14 A I don't recall. There are so many times he
15 talk to me. "This one must be work. This one must be
16 work." So many times.

17 Q And did you take that as a scientific analysis
18 by Dr. Chu or more of a statement -- a hopeful statement
19 that this was going to work?

20 A Well, I take it as a scientific analyze because
21 he's a physicist. And basically, as I told you, compare
22 with many other physicist professor, he know material
23 much better than many professors. So, that's why I have
24 great respect for him.

25 Q Before the end of January 1987, when -- well,

1 let me step back. You understand that it was
2 January 29th, 1987, Dr. Chu got a phone call from M. K.
3 Wu, right?

4 A Correct.

5 Q And the phone call was about the success of
6 YBCO?

7 A Correct.

8 Q Before that phone call, did you ever talk with
9 Dr. Chu about yttrium substitution?

10 A Not as I remember.

11 Q Did you ever talk to him -- before that phone
12 call, did you ever talk to him about lutetium
13 substitution?

14 A No, not as I remember. I was thinking that
15 should be Pei's responsibility to talk to him, so I -- I
16 didn't talk to Dr. Chu yet.

17 Q And in that regard you asked Pei -- Dr. Hor --

18 A "Have you talked to Dr. Chu?"

19 Q I'm going to ask you some about the -- about
20 January 30th, 1987. Do you remember that day?

21 A Uh-huh.

22 Q Do you recall that M. K. Wu and Jim Ashburn
23 came to the University of Houston on that day?

24 A Uh-huh.

25 Q You have to give me a yes or no.

1 A Yes.

2 Q Okay. They came from the University of Alabama
3 in Huntsville?

4 A Correct.

5 Q Why did they come to U of H that day?

6 A They want to confirm the YBCO
7 superconducting -- superconductivity and high Tc metal
8 because they only able to measure the re -- resistivity
9 but that's not enough.

10 Q They thought it was a superconductor?

11 A Yes.

12 Q But no one was sure until they had done the
13 Meissner test?

14 A I believe they sure but you need to have
15 Meissner measurement.

16 Q In order to have a publishable result?

17 A Confirm, that's right. I believe he's sure
18 that's superconducting transition temperature, but, it's
19 not enough. Meissner is basic result you have to have.

20 Q In order for it to be a superconductor, it has
21 to be confirmed by the Meissner test?

22 A Correct.

23 Q Okay. What was the -- do you recall what the
24 quality of the sample was that Wu and Ashburn brought?

25 A I remember the quality sample is not good

1 because the transition is too wide.

2 THE COURT REPORTER: Too -- too what?

3 A Too wide.

4 MR. HEWITT: Wide.

5 A What it means is from onset to zero transition,
6 we have divide transition by three. Onset, the
7 beginning, it drop. And then the middle go in the mid
8 transition temperature and to zero. That's it. That's
9 zero transition temperature. It's a very broad.

10 Q (By Mr. Beverly) Do you recall what those
11 temperatures were, approximately, what the onset was?

12 A '92. I -- I didn't remember. He -- he brought
13 more than one sample I remember.

14 Q He brought more than one sample?

15 A I remember.

16 Q Okay. And then zero resistance was around 70?

17 A I cannot recall exactly.

18 Q All right. All right. Were all the samples of
19 relatively poor quality?

20 A What I think.

21 Q Was -- the samples that they brought -- were
22 the samples that they brought stable and that you -- you
23 could repeat the measurements on them?

24 A Yes, stable.

25 Q Did you do any of the testing on the Wu and

1 Ashburn samples?

2 A No, I do not --

3 Q Okay.

4 A -- because they do the low temperature
5 measurement. That's not my -- not my expertise.

6 Q Did you have any discussions with Wu at that
7 time -- on that January 30th time?

8 A Oh, I maybe have January talk, but I don't
9 think I had time to talk because Dr. Chu asked me to
10 make the sample back to quality. So I was very busy
11 started working. So I was able to obtain the sample,
12 have onset 94 and very sharp transition.

13 Q So immediately --

14 THE COURT REPORTER: Very sharp --

15 A Very sharp transition. So that -- later on, I
16 believe the publication for the paper, the data used was
17 from my sample.

18 Q (By Mr. Beverly) Excuse me. So, immediately
19 after Dr. Chu knew about Wu's results --

20 A Correct.

21 Q -- he started -- he asked you to start making
22 better samples?

23 A Correct.

24 Q Before January 29th --

25 A Okay.

1 Q -- when Dr. Chu got the call from M. K. Wu,
2 had you made any YBCO samples?

3 A Not as I remember. I do the calculation and
4 try to do it but I have not had time to start it.

5 Q So you had written down --

6 A Yes, formula.

7 Q -- and done the measure -- done the
8 calculations --

9 A Yes.

10 Q -- for the amounts of the chemicals --

11 A Correct.

12 Q -- you would need?

13 A Correct. If I make it -- I think we have mixed
14 high Tc before M. K. Wu. We missing the chance.

15 Q Excuse me just a second.

16 When you started to prepare YBCO
17 compositions after Wu's telephone call to Dr. Chu,
18 whose -- what composition -- what formula were you
19 using?

20 A After conversation, I believe Dr. Chu asked Pei
21 write the formula to see what we talk on the phone --

22 THE COURT REPORTER: What --

23 A -- what did you talk to Mau Kwen on the phone,
24 why don't you write down the formula.

25 Q (By Mr. Beverly) Were you present in the room

1 when Dr. Chu and Dr. Hor were talking to M. K. Wu --

2 A No.

3 Q -- on the phone?

4 A No.

5 Q Okay. And your understanding is Dr. Chu asked

6 Dr. Hor to write down the formulas that Dr. Hor had

7 talked about with M. K. Wu?

8 MR. HEWITT: Objection, form.

9 Q (By Mr. Beverly) Okay.

10 A Yes -- no. I was told because I was not there.

11 I was told -- Pei told me or Dr. Chu told me, or

12 whatever. Dr. Chu asked him to write down whatever

13 in -- in telephone conversation. I was not there.

14 Q Okay.

15 A Okay? That's -- I find out later on maybe --

16 Pei -- Pei or Dr. Chu told me. So, I did not directly

17 hear Dr. Chu say so.

18 Q All right. And those formulas were reflected

19 on page H 50 --

20 A Yes.

21 Q -- of the lab notes, I believe?

22 A Yes. Yes.

23 Q Okay.

24 A Fifty? No.

25 Q Forty-nine?

1 A Yes. Fifty is not right. Fifty has some
2 little "b" at the --

3 Q Let's -- let's just take a look at it.

4 Well, in the interest of making sure we
5 have a complete record --

6 A I think it's not 50. Because 50 I remember
7 used to have -- yttrium had little "b" over there.

8 Q Hang on.

9 A Maybe 49.

10 MR. BEVERLY: Go off the record real
11 briefly.

12 THE VIDEOGRAPHER: We're off the record at
13 4:27.

14 (Recess from 4:27 to 4:28).

15 THE VIDEOGRAPHER: Back on the record at
16 4:28.

17 (Exhibit.37 marked.)

18 Q (By Mr. Beverly) I've handed you what's been
19 marked as Exhibit No. 37. And it is -- it's got
20 "Calculation" written on the first page, correct?

21 A Yes.

22 Q And was this a lab notebook that you kept
23 during the 1986-1987 time frame?

24 A It's my personal lab book.

25 Q It's your personal lab book. Okay. Can you

1 tell me what the original of this document looked like,
2 as far as, was it a spiral bound, was it loose pages?
3 What kind of notebook was it?

4 A Loose pages. We did not bind it together.
5 Page by page.

6 Q All right. And what kind of paper was it
7 written on? Just blank -- white blank sheets?

8 A No, no, no. It have the lines. See?

9 Q All right. So it was ruled paper?

10 A Yeah. Yeah.

11 Q Like off of a --

12 A You see. That's all the lines over there.

13 Q Like, for example, off of a note pad like --
14 like a yellow note or white note pad?

15 A Yeah.

16 Q Okay. And -- so, you would write on a piece of
17 paper in a -- was it in a note pad form when you would
18 write on them?

19 A In this paper.

20 Q Well -- I mean, was it a -- a bound note pad
21 like we would see --

22 A No.

23 Q No? It was just loose pages?

24 A Correct.

25 Q Kind of like the ruled paper we would use while

1 we're in school?

2 A Just like what you have there. Page by page --
3 no, the other book -- you have the folder -- the folder
4 in front of you.

5 MR. PERRY: You had a spiral notebook.

6 Q (By Mr. Beverly) Somewhere. What did I do with
7 it?

8 A No, you have the folder -- just like your
9 folder so we can put page by page inside.

10 Q Like this?

11 MR. HEWITT: Looseleaf notebook.

12 A Yes, loose -- they call --

13 MR. HEWITT: Looseleaf notebook?

14 A Looseleaf notebook.

15 Q (By Mr. Beverly) It was a looseleaf notebook
16 and it had paper that you just put in it?

17 A Yes, correct.

18 Q Okay. So, papers could be moved around in a
19 looseleaf notebook, right?

20 A Could be.

21 Q All right. These pages have been stamped with
22 an "H" number. Do you see that?

23 A I see it.

24 Q And Exhibit No. 37 goes from H 1 to H 204,
25 correct?

1 A Yes.

2 Q Okay. And on H 204 it has your name written
3 in?

4 A H 20 -- 204.

5 Q 204. It's the last page. Go to the very last
6 page.

7 A Yes.

8 Q Okay. And this page is kind of darker. Do you
9 know why that is, why it's darker?

10 A Copy machine copied it.

11 Q Okay.

12 A This is only created from copy.

13 Q All right. That's -- H 204, is that your
14 handwriting, Ruling Meng?

15 A Correct.

16 Q Okay. Do you know why your handwriting is on
17 that page -- why your name is there?

18 A I don't know why.

19 Q And you had the original of -- was this one
20 notebook, H -- H 1 through 204, was that in one notebook
21 or was that in more than one notebook?

22 A No, in one -- it's a looseleaf notebook.

23 Q It was -- so, H 1 through H 204 was in one
24 looseleaf notebook?

25 A Yes.

1 Q All right. And did you keep that in your
2 office?

3 A Yes.

4 Q And you kept that in your office during this
5 time period of '86 to '87?

6 A Correct.

7 Q Did there come an occasion where you gave that
8 notebook to someone else?

9 A Occasion?

10 Q Did -- did there come a time when you gave the
11 notebook, which is Exhibit 37, the original of it, to
12 somebody else?

13 A Only on the time --

14 Q If you would --

15 A Only by the time I asked Y. Q. Wang to do the
16 calculation. So, I asked him to do the -- write in my
17 notebook.

18 Q Okay. So, Mr. Wang might take your notebook
19 and write in it?

20 A Yes.

21 Q Okay. After this was complete --

22 A Yes.

23 Q -- after you had finished this particular
24 notebook --

25 A Yes.

1 Q -- did you start on a second notebook or did --

2 A Yes.

3 Q Okay. After you had finished this notebook and
4 it was complete, did there come a time when somebody
5 asked you for this notebook?

6 A No. Nobody asked. Dr. Chu sometime.

7 Q Okay. Did Mr. Cox ever ask you to see this
8 notebook?

9 A Oh, yeah, many times.

10 Q Okay. And when Mr. Cox asked you to see the
11 notebook, how would -- would he come to your office to
12 look at it?

13 A In fact, sometime he come to -- with a paper to
14 ask me to fill out the blank space for data --

15 THE COURT REPORTER: The what space?

16 A Em -- empty space, blank space. And he say,
17 "Ruling, what" -- "what the temperature? What's the
18 time? How many gram of lanthanum oxide?"

19 THE COURT REPORTER: How many what?

20 A "How many gram of the lanthanum oxide? How
21 many gram of oxide?" I look in my book. I tell him.
22 Very often do it this way. Only later on one time he
23 want to take my notebook.

24 Q (By Mr. Beverly) Let me stop you right there
25 for -- for a moment. Okay?

1 Q (By Mr. Beverly) Okay.

2 A -- and then he write that.

3 Q All right.

4 A I even didn't see the whole thing. What he
5 write, I even didn't see it.

6 Q Do you know -- well, at the time you were
7 making the notes in this notebook, did it have these "H"
8 numbers stamped on it?

9 A No.

10 Q Okay.

11 A In the beginning I didn't ever realize it's so
12 important for this notebook. So, I do not keep the
13 extra one until I don't know when. Maybe after they say
14 they are -- they are going to patent the book and then
15 the patent lawyer come to make all the stamp in the
16 book.

17 Q Okay. And was that Mr. Cox or someone else?

18 A I don't recall that.

19 Q Okay. But someone -- someone from the patent
20 lawyer's office --

21 A Yeah.

22 Q -- came and -- and stamped these "H" numbers --

23 A Right.

24 Q -- on the book?

25 A Since that, I realize that I cannot miss --

1 miss any page because they have "H" number sequence all
2 the things. But before, I did not realize that is so
3 important for this book.

4 Q All right. We got a little sidetracked there
5 about the -- if you would turn to page H 50.

6 A Yes.

7 Q Excuse me. And we were discussing the formulas
8 that Dr. Chu asked Dr. Hor to write down, correct?

9 A Yes.

10 Q And Dr. Hor gave you some of the formulas --

11 A Yes.

12 Q -- that were on -- on page H 50?

13 A Yttrium, scandium, I believe.

14 Q Okay. So, he -- so, he gave you 1, 2, 3 and 4?

15 A Yes.

16 Q And he gave you the 9 -- looks like we skip
17 10 -- 11, 12 and 13?

18 A Yes.

19 Q Did he give you the yttrium-lead ones that are
20 14, 15 --

21 A No.

22 Q -- 16 and 17?

23 A No.

24 Q Those -- those were yours? You thought of
25 those?

1 A Yes.

2 Q Okay. And the lutetium ones, those were yours?

3 A Yes.

4 Q 5, 6, 7 and 8?

5 A Yes.

6 Q Okay. Along with 18, 19, 20 and 21?

7 A Correct.

8 Q All right. And then the scandium -- the other
9 scandium-lead ones, where did those come from, 22, 23,
10 24 and 25?

11 A Maybe also from myself.

12 Q Okay. Now, I notice that some of them have
13 yttrium barium copper and oxygen for the first two
14 elements and then copper and oxygen. And there are some
15 that don't have the copper and oxygen --

16 A They should have -- I just simplify. I did not
17 finish that formula.

18 Q So, it's implied that they're all --

19 A Copper oxide.

20 Q Okay. All of these were intended to be copper
21 oxides?

22 A Correct.

23 Q Okay. And then number 26 you believe is in
24 Mr. Wang's handwriting?

25 A Correct.

1 Q Do you know why he -- did he write this at the
2 same time you wrote these down?

3 A I cannot recall.

4 Q Okay. Do you know why he wrote that additional
5 formula on here?

6 A I didn't remember.

7 Q Okay. The date of this is 29 January and it
8 looks like '86 to me. But you believe that should be
9 '87?

10 A Correct.

11 Q And you specifically remember writing down
12 these formulas in your lab notebook on January the 29th
13 of '87?

14 A Correct. '97 -- '87.

15 Q 1987. I'm sorry.

16 A Yes.

17 Q And at the time you wrote down these formulas,
18 January 29th of '87, you don't believe that you had
19 synthesized a YBCO compound?

20 A I -- we did synthesize at that night.

21 Q That -- on the 29th, though, right?

22 A Yeah, overnight we did.

23 Q But before you -- shortly before you wrote
24 these down --

25 A We -- we did. That's why I had Mr. Wang help

1 me with the calculation.

2 Q Okay.

3 A We wanted to speed up the process.

4 Q Before the 29th, you had not synthesized any
5 YBCO compound?

6 A Not as my recall -- my remember, not as I --
7 even late January, I don't recall I make that.

8 Q Okay. Do you recall anyone else making YBCO
9 compounds?

10 A I don't think so. Besides me, nobody are going
11 to make that.

12 Q Mr. Wang would not make it without you knowing
13 about it?

14 A That I cannot guarantee. But Dr. Chu never
15 directly assigned Mr. Wang to do any sample. Dr. Chu
16 would ask me first and then I would talk to Mr. Wang. I
17 thought he would do it by himself.

18 Q So if you needed Mr. Wang's help, you would
19 ask?

20 A Yes. At least Dr. Chu directly talk to him, I
21 don't know. I cannot say yes or no.

22 Q All right. Did you have any role in preparing
23 any of the patent applications for the patent that's at
24 issue in this lawsuit?

25 A You asked contribution for the claim, right?

1 Q No, just with respect to actually preparing the
2 applications themselves, the patent applications. Do
3 you know what a patent application is?

4 A Yes. That's the patent, right?

5 Q Well -- I mean, do you know that in order to
6 get a patent, you have to make an application for one
7 with the U.S. Government?

8 A Yes.

9 Q Okay. And that's a document that's submitted
10 with -- to the U.S. Patent and Trademark Office?

11 A Yes.

12 Q Did you have any role in preparing any
13 documents that were patent applications for the patent
14 at issue in this lawsuit?

15 A No, I never write anything.

16 Q Did you have any role in preparing any
17 continuation -- what's known as a continuation-in-part
18 for a -- for the patent at issue in this lawsuit?

19 A I never write anything, never see anything,
20 application.

21 Q Okay. So, you never reviewed any patent
22 applications?

23 A Never.

24 Q Okay. And other than your declarations, did
25 you ever look at any documents that you understood were

1 to be filed with the U.S. Patent and Trademark Office?

2 A I never see any.

3 Q Okay. Other than your declarations, you never
4 saw any documents that were submitted for the patent
5 process?

6 A Correct.

7 Q Or at least that you knew were being submitted
8 for the patent process?

9 A If I knew, it was Dr. Chu say so. I see him.
10 He sit there write every day, every day and then I know
11 he's writing the patent.

12 Q All right. Setting aside for the moment
13 meetings that you had with Charles Cox --

14 A Uh-huh.

15 Q -- or any other attorneys, what discussions do
16 you recall having with Dr. Chu about the patent
17 application?

18 A None. He never talked to me anything more than
19 to say he was writing a patent application. And I never
20 asked.

21 Q Why did you never ask him about it?

22 A Number 1, I trust him. He always say he
23 represent us.

24 Number 2, it's a kind of culture. I am
25 Chinese. We are -- we not very aggressive. I think how

1 dare you ask Dr. Chu about this thing? And -- I don't
2 know. I just don't want to ask. And I don't
3 say nothing -- no need for me to ask. He always cover
4 us. He always said "our patent." I trust him. So,
5 what reason I ask him?

6 Q Setting -- also, again, setting aside any
7 meetings that -- where Mr. Cox or another attorney may
8 have been present, what discussions did you have with
9 Dr. Hor regarding the patent applications?

10 A None. I think I had to order interference with
11 Alabama for deposition --

12 THE COURT REPORTER: You had --

13 A I think I have point to represent the UH to do
14 the deposition with -- about the interference with
15 Alabama. Of course, I -- I must be the co-inventor. I
16 must be the people -- person who have contribution
17 qualified to do that. That's what I'm thinking. You
18 would not ask somebody -- nobody to do that, right?
19 That's what I'm thinking.

20 Q (By Mr. Beverly) Did you ever discuss the
21 patent inter -- the interference -- the Alabama
22 interference with Dr. Hor?

23 A No.

24 Q You did testify that you discussed some of the
25 patent issues with John Warren and Allan Jacobson,

1 right?

2 A Which was after 2006.

3 Q Right. In 2006 you and Dr. Hor went to -- to
4 Mr. Warren, correct?

5 A Yes.

6 Q And do you know what Mr. Warren's position was
7 at the UH?

8 A I think he's vice president. His specialty is
9 intellectual property.

10 Q Vice president specializing in intellectual
11 property?

12 A Uh-huh. Because he have to contact me -- he
13 talked to me many, many times concerning about the
14 patent. Because the people want to make sure basically
15 how to process it and the -- and the YBCO, how to do it,
16 so he had to ask me. So, I provide the information to
17 him.

18 Q So, Mr. Warren -- prior to 2006 --

19 A Yes.

20 Q -- he had asked to you provide information
21 regarding the processing of --

22 A For --

23 Q -- YBCO?

24 A Not only YBCO. Also bisco -- bis -- bismuth.

25 Q Bismuth. A different patent, correct?

1 A Right.

2 Q Okay. And is -- Mr. Warren was just asking
3 you, "I need this information regarding processing; can
4 you provide that to me?"

5 A Sometime I believe someone come over -- we --
6 we one time even had a visitor. I went in his office
7 and he asked me this processing parameter and all kind
8 of thing. I do remember -- at least he had come to see
9 me more than twice. So, I was -- know him quite well.
10 So, of course, I didn't -- only the co-inventor you can
11 do things like that.

12 Q Okay. And then you had a discussion with Allan
13 Jacobson also in 2006?

14 A Basically, not discussion. We reporting. He's
15 the director of the center.

16 Q Of TcSUH, right?

17 A Yes.

18 THE COURT REPORTER: TcSUH?

19 MR. BEVERLY: That's the Texas Center for
20 Superconducting --

21 A Superconducting center.

22 MR. HEWITT: T-C-S-U-H, all caps. No?

23 MR. BEVERLY: Not exactly.

24 MR. HEWITT: No.

25 MR. BEVERLY: T subscript C.

1 MR. HEWITT: Okay. SUH and all caps other
2 than C.

3 Q (By Mr. Beverly) So--

4 A We reporting --

5 Q So, Dr. Jacobson was the director of the
6 center?

7 A Correct.

8 Q Okay. But Dr. Jacobson wanted to talk to you
9 after -- after this issue of inventorship had arisen,
10 Dr. Jacobson indicated he wanted to talk to you?

11 A We asked him to talk with Dr. Chu.

12 Q You and -- you and Pei asked him --

13 A Yes.

14 Q -- to talk to Dr. Chu?

15 A Yes. The reason we talk to him because he's
16 the director of center. We wanted him to talk with
17 Dr. Chu and correct the mistake. And after that, he
18 called me and said he want to talk to me.

19 Q Just you alone?

20 A Correct.

21 Q When was that?

22 A I can find out the date, but now I just cannot
23 remember exact date. I have the e-mail for -- to
24 Dr. Chu. If you need to, I can find it out. Believe
25 me, I have that information.

1 Q Okay.

2 A But I do not remember exactly day. Oh, yeah,
3 in the affidavit I probably still have that.

4 THE COURT REPORTER: In the what?

5 A My affidavit.

6 MR. BEVERLY: Can we go off the record for
7 just a short period?

8 MR. HEWITT: Sure.

9 THE VIDEOGRAPHER: Off the record at
10 4:50 p.m.

11 (Recess from 4:50 to 5:15).

12 MR. BEVERLY: We're breaking for the day
13 and we're working on finishing up the deposition.

14 (Proceedings concluded at 4:50 p.m.)

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I declare under penalty of perjury that the foregoing is true and correct.

RULING MENG

SUBSCRIBED AND SWORN TO BEFORE ME, the undersigned authority, by the witness, RULING MENG, on this the ____ day of _____, _____.

NOTARY PUBLIC IN AND FOR

THE STATE OF _____

My Commission Expires: _____

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STATE OF TEXAS
COUNTY OF HARRIS

VOLUME 2

REPORTER'S CERTIFICATE

ORAL VIDEOTAPED DEPOSITION OF RULING MENG

May 13, 2010

I, the undersigned Certified Shorthand Reporter in and for the State of Texas, certify that the facts stated in the foregoing pages are true and correct.

I further certify that I am neither attorney or counsel for, related to, nor employed by any parties to the action in which this testimony is taken and, further, that I am not a relative or employee of any counsel employed by the parties hereto or financially interested in the action.

SUBSCRIBED AND SWORN TO under my hand and seal of office on this the _____ day of _____, _____.

Shirlee (Sasi) Romney, CSR
Texas CSR 975
Expiration: 12/31/2011
MERRILL LEGAL SOLUTIONS
315 Capitol Street, Suite 210
Houston, Texas 77002
Firm No. 210
713.426.0400

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS

HOUSTON DIVISION

1			
2			
3	PEI-HRENG HOR)	
	Plaintiff,)	
4)	
	vs.)	CASE NO. 4:08-cv-03584
5)	
	CHING-WU "PAUL" CHU,)	
6	Defendant)	
7			

VOLUME 3

ORAL VIDEOTAPED DEPOSITION

RULING MENG

May 26, 2010

13 ORAL VIDEOTAPED DEPOSITION OF RULING MENG, produced
14 as a witness at the instance of the Defendant and duly
15 sworn, was taken in the above-styled and numbered cause
16 on the 26th day of May, 2010, from 9:48 a.m. to
17 4:55 p.m., before Shirlee (Sasi) Romney , Certified
18 Shorthand Reporter in and for the State of Texas,
19 reported by computerized stenotype machine at the
20 offices of Akin, Gump, Strauss, Hauer & Feld, 1111
21 Louisiana Street, Suite 4400, Houston, Texas, pursuant
22 to the Federal Rules of Civil Procedure and the
23 provisions stated on the record or attached hereto.

24
25

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ALSO PRESENT:

Mr. Pei-Hreng Hor
Ms. Ashley Edison
Mr. Bill Marsh, Videographer

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EXHIBITS

EXHIBIT	DESCRIPTION	PAGE
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Exhibit 40	String of E-mails	531
Exhibit 41	Inventory of Materials Regarding YBCO and its Discovery	538
Exhibit 42	Declaration of Ruling Meng; Wu et al., v. Chu	540
Exhibit 43	Document entitled Y1Ba2Cu3O	570
Exhibit 44	Document entitled R1Ba2Cu3O3 - 123	576
Exhibit 45	Document entitled La-Ba-Cu-O 214	578

1 THE VIDEOGRAPHER: Going on the record.
2 Today's date is May 26, 2010. The time on the monitor
3 is 9:48 a.m. This marks the beginning of videotape
4 No. 1, Volume 3, in the deposition of Ruling Meng in the
5 matter of Pei-Hreng Hor versus Ching Wu Chu, Case
6 No. 4:08-CV-03584 in the United States District Court,
7 Southern District of Texas, Houston Division. This
8 deposition is taking place at 1111 Louisiana here in
9 Houston. The videographer today is Bill Marsh of
10 Merrill Legal Solutions located at 315 Capitol Street.
11 The court reporter today is Sasi Romney of Merrill Legal
12 Solutions. Counsel, would you please voice identify
13 yourself and state whom you represent.

14 MR. PERRY: Brent -- oh, go ahead.

15 MR. BEVERLY: J. Beverly for plaintiff,
16 Pei-Hreng Hor.

17 MR. PERRY: Brent Perry here for
18 intervenor, Ruling Meng.

19 MR. HEWITT: Les Hewitt and Ashley Edison
20 here for Dr Chu.

21 EXAMINATION

22 BY MR. BEVERLY:

23 Q All right. Good morning, Ms. Meng.

24 A Good morning.

25 Q You understand that you are still under oath

1 here today?

2 A Yes.

3 Q And that this is a continuation of your
4 deposition from a couple of weeks ago?

5 A I understand, yes.

6 Q And I will try and move as quickly as I can
7 today. I may ask you a few questions I've already asked
8 you just because of the passage of time. If I -- if I
9 waste any of your time on that, I apologize. But I will
10 try and keep it moving. Okay?

11 A That's okay.

12 Q All right. Going back to the time frame in
13 late 1986 and early 1987. I think you testified that
14 there were two samples of LBCO which displayed a
15 transition temperature around 70 kelvin; is that
16 correct?

17 A Yes.

18 Q And that prior -- so, prior to M. K. Wu's phone
19 call in late January of 1987, y'all -- your lab had only
20 observed transition temperature of 70k twice --

21 A Yes.

22 Q -- for those two samples?

23 A Yes, about 70.

24 Q Just approximately?

25 A Right.

1 Q And one was a sample that Dr. Hor had prepared,
2 correct?

3 A Correct.

4 Q But that was unstable?

5 A Correct.

6 Q And then there was another sample that you had
7 prepared?

8 A Correct.

9 Q And if you look at page -- we're going to
10 Exhibit No. 37.

11 A Uh-huh.

12 Q And I believe that one of it may be around page
13 H 17 or 18. Could you identify, if possible, which --
14 which one of these -- of your samples that you prepared
15 was the one that had a transition temperature around 70
16 kelvin? I may not have the pages correct.

17 A No, not in these two pages.

18 Q Not in these two pages?

19 A No.

20 Q Do you know where, approximately, that would
21 be, which -- which sample that was?

22 A I cannot recall which one. But you would look
23 at the X-ray data and the measurement data probably to
24 figure out. There's a -- I think there's a curve about
25 resistivity measurement. If you look at that data dated

1 just around that time.

2 Q And was it in the beginning of -- was it in the
3 early part of January 1987 that you prepared that
4 sample?

5 A Yes. The 214 sample.

6 Q It was prepared to a nominal 214 sample?

7 A Nominal.

8 Q Did you ever observe that -- that those two
9 samples, the one that Dr. Hor prepared and the one that
10 you prepared which displayed a transition temperature
11 around 70 kelvin, did you ever observe that those
12 samples were more 21 -- 214 purer?

13 A I did not test Dr. Hor's sample from X-ray.
14 But I did do my -- my sample on X-ray. I believe in
15 the -- exhibition have the data --

16 THE COURT REPORTER: In the what?

17 A The exhibition somewhere have the data for
18 X-ray pattern for my sample.

19 Q (By Mr. Beverly) So, there was an X-ray
20 diffraction?

21 A For the sample I make.

22 Q There was an X-ray diffraction pattern done for
23 your sample?

24 A Right.

25 Q But you don't know whether one was done for Dr.

1 Hor's or not?

2 A I have not do any X-ray for his sample.

3 Q Okay. Other than you, who -- during this
4 period, who in the lab would do X-ray diffraction
5 analysis?

6 A In my lab, I'm the only person do the X-ray.

7 Q And did that continue -- was that true during
8 this entire period from, say, No -- November of '86
9 through June of '87, you were the only person doing the
10 X-ray diffraction?

11 A At early stage some of the X-ray was done by
12 Dr. Simon Moss' lab. They had a graduate student
13 helping us.

14 Q Kim Foster, correct?

15 A Yeah, yeah, yeah. Because we do not have the
16 facility to run the X-ray. Later on, because we have
17 too many samples, we cannot ask them to do it. So, I
18 had to run to Rice University in -- in engineer
19 department -- mechanical engineer department to use
20 their X-ray. And even sometime I have to go to the
21 geology department to use their X-ray machine.

22 Q Okay. Which -- I was going to ask you some
23 questions about that, so --

24 At some point you had -- y'all had access
25 to Dr. Moss's X-ray diffraction equipment?

1 A No. We can -- we cannot use their equipment.
2 We can only -- only ask them to help to do that.

3 Q All right. So I -- I understand what you're
4 saying.

5 At some point Dr. Moss's lab was willing
6 to help y'all do the -- help do the X-ray diffraction
7 analysis for your samples?

8 A Yes. Early stage.

9 Q Early stage. They did it themselves? You all
10 did not use the equipment?

11 A No.

12 Q Okay. And that did not last very long, did it?

13 A No, not very long.

14 Q Okay. Do you know when y'all lost access to
15 Dr. Moss's facilities and his -- and his staff?

16 A We never have possible to use his X-ray machine
17 whenever. That's why I have to run to --

18 Q Let me rephrase my question there. Do you know
19 when Dr. Moss stopped doing X-ray diffraction analysis
20 for -- for the lab?

21 A I cannot recall that. I can look at the book.
22 I think that we -- I even have some of his data, but I
23 cannot remember exactly the time.

24 Q What would you look at to help refresh your
25 memory in that regard?

1 A I think there's a novel I read through --

2 THE COURT REPORTER: There's another a
3 what?

4 A Novel. Hazen have to write a book.

5 Q (By Mr. Beverly) Oh, Dr. Hazen's book?

6 A I think he remember -- he remind -- he writing
7 something. That's -- Dr. Simon do the X-ray for us.
8 But, in fact, I can easily find -- from all the data
9 I -- I send to you, they had a lot of X-ray data. I can
10 tell which one from -- from their lab, which one is I do
11 it.

12 Q So, from the data that you sent to
13 Mr. Hewitt --

14 A Yes.

15 Q -- you could tell where you began to do the
16 X-ray diffraction analysis?

17 A Yes. Yes.

18 Q And what data are you talking about there?

19 A X-ray pattern.

20 Q The X-ray patterns. Okay.

21 MR. HEWITT: I don't quite understand what
22 she says what she sent to me.

23 A I believe I have some of the data -- this is
24 just a lab notebook. But some of it just a sheet like
25 X-ray pattern. For different sample, have X-ray

1 pattern. That is the one step of data.

2 MR. HEWITT: Mr. Perry, what I don't
3 understand is whether or not Mrs. Meng made a production
4 to us or she's talking about giving something to us
5 earlier in time.

6 A No, I give them to you people. You have that.

7 Q (By Mr. Beverly) Are you talking about --

8 A I don't keep that.

9 Q Are you talking about documents that you turned
10 over in 2006?

11 A Yes.

12 Q Okay. So, among the documents that you turned
13 over in 2006 were X-ray patterns that you had performed?

14 A Including X-ray patterns, yes.

15 Q Okay.

16 MR. BEVERLY: Let me take a look.

17 MR. PERRY: I -- there are some X-ray
18 patterns in the documents you produced in the case.
19 And -- but I'm not competent to -- to identify there.

20 Q (By Mr. Beverly) And --

21 A That's my -- that's the X-ray I took. The
22 other one, I see it.

23 MR. HEWITT: Mrs. Meng, you might try to
24 slow down just a little bit. I think the court reporter
25 is struggling a little bit this morning.

1 THE WITNESS: All right.

2 MR. HEWITT: Thank you.

3 THE WITNESS: Sorry.

4 Q (By Mr. Beverly) Okay. Well, let me take a
5 look at something here real quick. I'm sorry.

6 A Okay. I remember. One thing is we -- in the
7 very beginning, 1986, we was in the SR, Building 1 --

8 THE COURT REPORTER: You were in the SR
9 Building what?

10 A Science research Building 1 was located at UH.

11 MR. HEWITT: SR.

12 A And Simon Moss running some X-ray for us.
13 Later on we moved to the superconductor center, but
14 everything happened is during the time we still in
15 Science RS 1 building.

16 Q (By Mr. Beverly) I tell you what. Let me --
17 maybe I can --

18 MR. BEVERLY: Go off the record real
19 quick.

20 MR. HEWITT: Sure.

21 THE VIDEOGRAPHER: The time is 9:59 a.m.
22 We're off the record.

23 (Recess from 9:59 to 10:00).

24 THE VIDEOGRAPHER: The time is 10:00 a.m.
25 We're back on the record.

1 Q (By Mr. Beverly) If you would turn to what's
2 been previously marked as Exhibit No. 19. And this is a
3 copy of an affidavit you prepared in 2006, correct?

4 A Correct.

5 Q Okay. And if you look at what is attached as
6 reference number 3 -- no, I'm sorry -- reference
7 number 4, this is an example of X-ray diffraction data;
8 is it not?

9 A Yes.

10 Q Okay.

11 A It's this one?

12 Q Right.

13 A Yes. That's the sample I make. And in order
14 to took the X-ray --

15 Q Which -- let me ask you real quickly. Which --
16 which sample are you talking about when you say that's
17 the sample you make?

18 A For transition above 77.

19 Q Okay. So this is an LB -- LBCO sample --

20 A Right.

21 Q -- that had a transition temperature of above
22 77 --

23 A Correct.

24 Q -- kelvin?

25 A Correct.

1 Q Okay. All right. And at the top it says "LBCO
2 with 123 structure already obtained," correct?

3 A Yes. But that time I did not know the YB --
4 123. I identified this as a 214. You look at the peak.
5 I label 110, 2001 is based on 214.

6 Q So, if you could -- on that exhibit, if you
7 could --

8 MR. BEVERLY: Okay with marking -- this
9 was your exhibit. Is it okay if she marks on it?

10 MR. HEWITT: Sure.

11 Q (By Mr. Beverly) Let me hand you a marker.
12 There you are.

13 If you could show me which peaks there are
14 that you're talking about that you identified as 214
15 originally.

16 A All the peaks I identified as 214.

17 Q So, every -- every one of these peaks?

18 A Right. But, in fact, that's not correct. But
19 you see two peaks has not been identified. The 38
20 angle. Another one is -- and 32 something -- the angle,
21 and I -- I put that as impurity phase.

22 Q Okay. So, if I'm clear, you originally
23 identified all of the peaks as 214?

24 A I base on 214 X-ray pattern.

25 Q So, you had an existing pattern for 214

1 structure?

2 A Correct.

3 Q Okay. What was the -- what was the earliest
4 time that you could identify a 123 structure through the
5 X-ray diffraction data?

6 A I believe up to Dr. Hazen and Mao was
7 identified as 123 --

8 Q So --

9 A -- structure. And also they have the standard
10 pattern for 123 structure.

11 Q And that would have been in March of 18 --
12 1987?

13 A Correct. Correct.

14 Q Around the beginning of March '87?

15 A Yeah.

16 Q All right. So at this time, you -- you could
17 not know that this was a 123 structure?

18 A No.

19 Q All right. But this was an X-ray pattern -- a
20 diffraction data pattern that you produced?

21 A Yes.

22 Q All right. And you believe it was done around
23 January 12th of 1987?

24 A Yes.

25 Q Okay. Did you -- did you put this up at the

1 top, L -- La Ba Cu O with 123 structure as already
2 obtained? Did you do that?

3 A This one?

4 Q Yes.

5 A No.

6 Q Okay. Do you know who --

7 A Because later we have that -- we have the post
8 in our office -- we put the post on the wall and then I
9 think they labeled it.

10 Q Do you know who labeled it that way?

11 A I don't know who make the post. Maybe student.
12 Maybe Dr. Chu.

13 Q Okay. And similar, with the -- with the -- the
14 block of text down at the lower left, X-ray diffraction
15 data obtained on January 12, 1987, indexed in
16 March 1987, do you know who put that on this?

17 A No.

18 Q Okay. That would not be the kind of -- you
19 would not -- on a standard X-ray diffraction pattern,
20 you would not have these kinds of --

21 A No.

22 Q -- labels on them, would you?

23 A No. No.

24 Q Okay. When it says indexed in March 1987, do
25 you know what that means?

1 A I think mostly after the X-ray, I would index
2 right way. Index in March 1987 must be -- indicate we
3 want to show the people. And if they -- during the
4 January 12 we already obtain YBCO 123 pattern. That's
5 why they put that here.

6 Q Okay. When -- when you say "indexed," what --
7 what does indexing mean? What does indexing a pattern
8 mean?

9 A Indexing a pattern is corresponding to some of
10 the standard pattern for yttrium structure. People
11 already done that before. I cannot identify the new
12 structure. I have to refer to the standard -- they call
13 pattern card, card, c-a-r-d, so I look at the pattern
14 and put the -- compare my pattern.

15 They all have different angle sheet but
16 the peak is intensive and the position is corresponding
17 similar. That's index.

18 Q Okay. So, indexing means comparing it against
19 other patterns?

20 A Standard patterns.

21 Q Standard patterns? Standards patterns?

22 A Right. The intense of the peak, the angle of
23 the peak.

24 Q All right. And there's a database which
25 contains standard patterns, correct?

1 A Correct.

2 Q Okay. And you had access to those databases?

3 A We do have the handbook.

4 Q All right. Was it possible for you to use an
5 X-ray diffraction data to identify a 123 structure
6 before March of 1987?

7 A No. I don't know 1 -- 123 structure.

8 Q Okay.

9 A We don't understand what the pattern look like,
10 123 structure.

11 Q All right. Okay. Getting back to the X-ray
12 facilities.

13 Dr. Moss and his student did the X-ray
14 diffraction analysis for a short period of time --

15 A Correct.

16 Q -- beginning in November of '86?

17 A Correct.

18 Q You don't recall exactly when you all were cut
19 off?

20 A No, I don't. But it's easy to find out. If we
21 need to, I can go back check even from the pattern data.
22 Before that --

23 Q And you would look at --

24 A They are different.

25 Q You would look at patterns -- you would look at

1 the X-ray patterns like the one we were just looking at,
2 reference 4, and you could tell --

3 A Yes.

4 Q -- by those patterns where they were done?

5 A Yes.

6 Q Okay. Like, I notice reference 4 has the
7 this -- the TcSUH symbol down at the bottom?

8 A I think that's stamped later on.

9 Q It was added on.

10 A Yes.

11 Q It wouldn't have originally been on --

12 A No.

13 Q -- the --

14 A They're all added later on, the title and here.

15 Q So, TcSUH would not have originally been on the
16 document?

17 A No.

18 Q All right. Okay. So, after Dr. Moss stopped
19 working with the -- the group, you began using other
20 X-ray facilities, correct?

21 A Correct.

22 Q And one of those was in the engineering
23 department?

24 A Mechanical engineering department.

25 Q Okay. And do you recall what kind of machine

1 that was?

2 A I don't remember the model of X-ray machine. I
3 believe it's pretty old. It's from Dr. Simon Moss --
4 oh, no. Sorry. Salama's lab.

5 Q Dr. Salama?

6 A Yeah, Dr. Salama. I didn't recall the model,
7 the increment, but it's a pretty old one.

8 Q Do you know if Dr. Salama is still at the
9 university or not?

10 A I think she -- he's retired.

11 Q Could that machine do a phase separation using
12 a computer database of known diffraction patterns to
13 identify the phase?

14 A Well, X-ray -- X-ray machine you can -- if we
15 have standard --

16 THE COURT REPORTER: Standard what?

17 A Standard pattern, they can identify different
18 phase -- two phase. But it's not completely clear you
19 can do that. So that's why in this page labeled here, I
20 consider this two peak is impurity phase which are known
21 phase. Sometimes you have extra peak, doesn't fit on
22 the standard pattern so I said, simply, oh, that's
23 impurity phase.

24 Q (By Mr. Beverly) Okay. And which peaks did you
25 consider to be the impurity phase?

1 A I think that's 38. You see that? I have
2 something marked in the bottom, the small peak.

3 Q 38-0?

4 A Zero, yeah.

5 Q Yes. Okay.

6 A And another one, 31.1.

7 Q All right. Would you just highlight those two
8 that you thought were the impurity phases?

9 MR. HEWITT: It's not going to copy, J. if
10 she uses --

11 MR. BEVERLY: We'll -- we'll want a color
12 copy.

13 MR. HEWITT: A yellow?

14 MR. BEVERLY: Yeah. On a color copy it
15 will come out.

16 MR. HEWITT: All right.

17 Q (By Mr. Beverly) All right. And so you've
18 identified those two impurity -- impurity phases?

19 A Uh-huh.

20 Q Okay. Thanks. Did you ever determine what
21 those were?

22 A In fact, later on, if we use 123, you can pick
23 up this peak pattern.

24 Q Okay. They -- were those part of the 123
25 pattern?

1 A Yes. Correct. It's not impurity at all.

2 Q Oh, okay.

3 A At that time I don't understand 123.

4 Q So, you thought -- at the time you thought they
5 were impurities?

6 A Correct.

7 Q And later you discovered they're part of the
8 123 pattern?

9 A Yes. That's -- that's why after work we, say,
10 "oh -- in fact, in 1987, June 12, we already found the
11 Y -- 123. That's why we go back to Kim -- we already
12 know it, the 1-- no, we already obtained the 123 phase.
13 The question is, we do not know how to identify this
14 phase.

15 Q And do you know -- which sample was this done
16 for?

17 A That's lanthanum-barium-copper-oxide.

18 Q Okay. But -- I mean, was there a particular
19 sample number this was done for?

20 A I think the number is L 13 -- 1336 -- 36.

21 Q Is it L or J?

22 A Oh, J. J-36.

23 Q J-36. Okay. So, from that, you could -- you
24 could identify what the composition was from your lab
25 book?

1 A Correct. J-36. I think we can find out.
2 Here. Here.

3 MR. HEWITT: Oh, yeah, thanks.

4 Q (By Mr. Beverly) Would you highlight the -- the
5 sample number on there, too?

6 So, only after Hazen and -- Dr. Hazen and
7 Dr. Mao identified the 123 phase, could you identify --
8 could you use the X-ray diffraction patterns to analyze
9 whether a particular sample was the 123 pattern or not,
10 correct?

11 A Correct.

12 Q Do you recall ever doing X-ray diffraction
13 analysis for any of the small fraction rare earth
14 substitutions that were done?

15 A I don't recall it.

16 Q And when I say the small fraction rare earth
17 substitutions, do you understand what I'm talking about?

18 A I understand. I really do not remember. We do
19 a lot of this kind of sample at that time. Even though
20 from the record seems I had a lot of calculation by
21 Wang. I didn't remember I -- we do a lot of this kind
22 of sample in that time. So, therefore, not likely I do
23 a lot of X-ray for that sample.

24 Q Okay. Now, if you had done X-ray diffraction
25 analysis for any of those small fraction rare earth

1 substitution samples --

2 A Yes.

3 Q -- you would have kept that data?

4 A I shouldn't have the data.

5 Q Okay. The university should -- then the
6 university should have kept that data, too, correct?

7 A Yes. All the data have returned to UH.

8 Q Do you know whether Mr. Wang knew how to do
9 X-ray diffraction analysis?

10 A I don't know. But I know he never done any
11 X-ray in -- in our group.

12 Q How do you know that?

13 A I don't know he know to do that or not. I
14 cannot answer this question. But he never done that in
15 our group.

16 Q If you would turn back to Exhibit No. 37.

17 A 37.

18 MR. PERRY: I'll get it for you.

19 THE WITNESS: Thank you.

20 Q (By Mr. Beverly) And this is your lab
21 notebook --

22 A Correct.

23 Q -- from November of '86 through sometime in
24 '87, correct?

25 A Yes. Yes.

1 Q If you would turn to the page that's marked
2 H 8.

3 A 8? No. 8, right?

4 Q Yes, H 8. That has formulas J-1 and J-2,
5 correct?

6 A Correct.

7 Q J-2 is actually listed first and then J-1,
8 right?

9 A Okay.

10 Q Okay?

11 A Uh-huh.

12 Q And those are both LBCO to a nominal 214
13 formula, correct?

14 A Correct.

15 Q Do you know when you wrote these in the lab
16 notebook?

17 A When?

18 Q Uh-huh.

19 A 14 November -- November 14 -- November 19 --

20 Q Let me ask you this.

21 A November 19 and November 16 -- I don't know.

22 The data is a little bit confused here now. H 5 is
23 November is 19 but now later it's November 16.

24 Q Do you know whether these pages that are -- you
25 know, they're stamped H 1 through 205. Do you know

1 whether these are in the same order that you kept them
2 in in your lab notebook?

3 A I assume I did. But I cannot guarantee I had
4 not make mistake. I assume I did.

5 Q Well, you -- you kept them in -- in --

6 A Yeah.

7 Q -- order. But do you know when they were
8 copied and stamped like this, do you know whether they
9 were kept in the same order?

10 A I don't know.

11 Q Okay. And do you know -- we may have covered
12 this, but do you know who copied them and who put these
13 H stamps on them?

14 A I think the lawyer office, law firm.

15 Q Okay. Mr. Cox's firm?

16 A Yes.

17 Q And the originals -- you do not have the
18 originals of pages H 1 through 205, correct?

19 A No. They stamped it.

20 Q Those were given to Mr. Cox?

21 A Yes.

22 Q And you got a copy back after they were
23 stamped?

24 A No. I have the originals back.

25 Q You got the originals back after they were

1 stamped?

2 A Yeah. I only submit to them the 20 -- 2006.

3 Sorry. I call a call. Sorry.

4 Q Not a problem.

5 MR. PERRY: Oh, I'm sorry. I'll get your
6 purse.

7 MR. BEVERLY: Watch your -- watch your --
8 let's go off the record for a minute.

9 THE VIDEOGRAPHER: The time is 10:22 a.m.
10 We're off the record.

11 (Recess from 10:22 to 10:23).

12 THE VIDEOGRAPHER: The time is 10:23 a.m.
13 We're back on the record.

14 Q (By Mr. Beverly) Okay. So the pages were
15 stamped and then returned to you and then at some point
16 the original -- you gave the original to Mr. Cox?

17 A I kept the or -- original.

18 Q You kept the -- you had the original, but at
19 some point the originals were given to Mr. Cox, correct?

20 A Yes.

21 Q Okay. And you kept a copy of it?

22 A No. I kept original after they stamped them.

23 Q After they -- after they stamped it, you had
24 the originals?

25 A Correct.

1 Q At some point you gave those originals to
2 Mr. Cox?

3 A Yes.

4 Q And then did you have -- did you have a copy of
5 the originals --

6 A No.

7 Q -- after that?

8 A No.

9 Q Okay.

10 A I never have copy.

11 Q All right.

12 A I got the copies of 2006 from -- here was --
13 lawyer office. They give me the original to make the
14 copy.

15 Q Okay.

16 A Before that, I don't have any copy.

17 Q All right. So, these were -- these -- this
18 document was out of your possession for a long period of
19 time?

20 A I don't remember how long, but it was out of my
21 office for awhile anyway.

22 Q Okay. All right. The 214 formulation for the
23 LBCO was first -- you first knew about that after you
24 heard about it from Dr. Chu, correct?

25 A Correct.

1 Q And that was after Dr. Chu learned about it
2 from Dr. Kitazawa, correct?

3 A Correct.

4 Q And he learned about it from Dr. Kitazawa at
5 the MRS Society meeting?

6 A I don't think so. At that time I don't think
7 doctor already identified the structure of 214.

8 THE COURT REPORTER: At that time you
9 don't think who --

10 A I remember in the MRS meeting Dr. Chu show the
11 resistivity measurement for our group. And Dr. Kitazawa
12 showed another measurement, do not mention the phase
13 identi -- identification yet.

14 Q (By Mr. Beverly) Oh, so it was after the MRS
15 meeting?

16 A I believe so.

17 Q Pretty shortly after the meeting, though,
18 right?

19 A Right. Right.

20 Q Okay. All right. If you would turn to H 9.
21 And that's -- is this page in your handwriting?

22 A Some of that is my handwriting. Some of it
23 not.

24 Q Could you --

25 A The top is my handwriting, and the bottom, that

1 "sample color is brown" and the number 144, 241 is not
2 my handwriting.

3 Q Okay. So everything above "sample color brown"
4 is your handwriting?

5 A Yes, correct.

6 Q And below that is what? One of the student's
7 handwriting perhaps?

8 A Very likely Mr. Wang. I do not remember.

9 Q Okay.

10 A "Sample color brown" is my handwriting.

11 Q Oh, it is?

12 A Only the number is not my handwriting.

13 Q The numbers below "sample color brown" are not
14 your handwriting?

15 A Correct.

16 Q Okay. All right. And this is dated December 7
17 of 1986, correct?

18 A Correct.

19 Q And it shows work that were done -- that was
20 done on formulas J-4, J-5 and J-6, correct?

21 A Correct.

22 Q And it's basically the -- the cooking time and
23 conditions for these? Or -- well, let me just ask you.
24 What does it show with respect to those formulas?

25 A Heating time, temperature and atmosphere. But

1 the bottom is -- I just can't remem -- remember what it
2 is.

3 Q This -- we'll just ask you about --

4 A No, I don't remember. This bottom 144, 241
5 look like time.

6 Q But you don't -- you don't know what those --
7 that notation means down there?

8 A I just can't remember this one. This is not my
9 handwriting.

10 Q Okay. But your handwriting -- the stuff that
11 you wrote on here --

12 A Yeah.

13 Q -- about basically shows cooking time -- time
14 and temperature and pressure?

15 A Oh, I know that this one maybe is the
16 resistance -- surface resistance. We -- sometime after
17 we got the sample, we always use the ohm meter to
18 measure the resistance of the surface, very -- very
19 simple measurement. So, it's -- the millivolt was 7.4
20 and the 15 is oxygen pressure.

21 Q Okay. If you would turn to H 10 of Exhibit
22 No. 37. That shows formulas J-4 and J-5, correct?

23 A Correct.

24 Q And there's a date on it of 16 -- November 16th
25 of '86. Is that in your handwriting?

1 A Yes.

2 Q And that's a date -- that date is obviously
3 before the December 7th date --

4 A Uh-huh.

5 Q -- of page H 9, correct?

6 A Yes, correct.

7 Q And, again, this shows -- well, J-4 is a
8 formula that's nominal 214, correct?

9 A Correct.

10 Q How did you know to do a 214 formulation prior
11 to learning about the 214 structure from Dr. Chu?

12 A I don't think I know 214 before that.

13 Q So, you don't believe that you knew 214
14 before --

15 A Dr. Chu told me. We base on --

16 Q That -- that would have been -- that would have
17 been in December of '86, correct?

18 A We used that on the 111, 459.

19 Q Originally, from Bednorz and Müller it was a
20 555 formulation, correct?

21 A No, 555 and 11 -- 113.

22 Q So the Bednorz and Muller formulations were 555
23 and 113?

24 A Yes, correct.

25 Q And you didn't know about the 214 until Dr. Chu

1 told you about it?

2 A Correct.

3 Q And that was, you believe, in early December of

4 1986?

5 A MRS meeting mostly is before Thanksgiving.

6 Q But it would have been after the MRS meeting,

7 though, right?

8 A Yes.

9 Q So whatever the date of the MRS meeting --

10 A Yes.

11 Q -- if it was before Thanksgiving or after --

12 A Yeah. Mostly --

13 Q -- if would have been after that?

14 A Mostly before Thanksgiving.

15 Q Okay. But you don't recall when it was --

16 A No.

17 Q -- in 1996 specifically?

18 A No.

19 Q You mentioned Dr. Hazen's book earlier in one

20 of your answers. Have you read his book?

21 A I did read his book.

22 Q When did you read it?

23 A Well, I can't remember. After he published.

24 Q You read it after he published it?

25 A Of course.

1 Q And that was like in 1988, '89, I believe?

2 A Possibly. I didn't remember what time he
3 published.

4 Q Okay.

5 A Before that, we -- I never read it.

6 Q Okay. Have -- have you read it again since
7 then?

8 A No.

9 Q Okay. So, it's been --

10 A Twenty more years.

11 Q -- twenty years since you read it?

12 A Correct.

13 Q Okay. I know it's been a long time, but do you
14 recall -- when you read Dr. Hazen's book, do you recall
15 reading anything that you believed was not correct?

16 A Just one thing I remember. It was the
17 paragraph -- one of the paragraphs Dr. Chu discuss with
18 me about how to make this sample. And in there
19 Dr. Chu -- and the Hazen's book said I want to insist to
20 use -- to following Bednorz method, and Dr. Chu insist
21 to use the solid state reaction method. And after I
22 read that, I said, no, that's totally wrong.

23 Q It was just -- it was just the opposite,
24 correct?

25 A Correct. I'm very clear remember. I even said

1 back, "Dr. Chu" -- "Dr. Chu, let me try it. Let me try
2 it." So, I was surprised. I mean, how can he do the
3 opposite? Possibly Hazen was mixed up. That's what I
4 think.

5 Q Did -- did you ever talk to Dr. Hazen during
6 that time frame?

7 A Yes. He did interview some of the -- us. But
8 he never talked to me particularly about this case. He
9 just asked about some of the experiments and so and so.
10 He did talk to us.

11 Q He talked to you. Did he tell you he was
12 writing a book?

13 A Oh, yeah. We know he's coming -- he wanted to
14 write a book.

15 Q And so you knew he was talking to you about
16 interviewing you for the book, for example?

17 A Yes.

18 Q Okay. Have you talked with Dr. Hazen since
19 then, since the late '80s?

20 A No.

21 Q If you look at H page -- sorry. If you look at
22 Exhibit 37, page H 11 --

23 A 11, yeah.

24 Q -- that shows formulas J-6 and J-3 --

25 A Correct.

1 Q -- is that correct?

2 A Correct.

3 Q Do you know why these -- why the formulas are
4 kind of out of sequence in here, why we go from J-2,
5 J-1, J-4, J-5, J-6, J-3 in that order?

6 A I don't remember. Very likely I just revised
7 it maybe J -- J-3 December already exists before. I
8 don't know. I don't remember.

9 Q So, you don't know why they're not put in
10 your --

11 A No.

12 Q -- notebook in number order?

13 A No, I don't -- I don't remember why. Maybe
14 some other reason, but I didn't remember why -- some
15 other reason but I don't remember why.

16 Q If you would go to page H 12. And this appears
17 to be the first place in your notebook where we have a
18 strontium substitution; is that correct?

19 A Correct.

20 Q And the page is dated December 23rd of 1986,
21 correct?

22 A Correct.

23 Q And this was the strontium for barium
24 substitution, correct?

25 A Correct.

1 Q Was -- wasn't Dr. Wu supposed to be doing the
2 strontium substitution?

3 A Yes.

4 Q Do you know why this shows up in the notebook
5 at this point?

6 A Before he does, I did. We already did in our
7 lab.

8 Q Oh, before Dr. Wu started strontium
9 substitution --

10 A Yes.

11 Q -- you did it in your lab?

12 A That's why Dr. Chu called back and asked me not
13 do it, stop it.

14 Q Okay. And do you recall when that telephone
15 con -- conversation was?

16 A I remember he called me during the MRS meeting.
17 He said, "Don't do it, because I talked to" -- Mau Kwen
18 asked him to do it.

19 Q But that would have been well before
20 December 23rd of 1986, right?

21 A Yeah. MRS meeting before December, yes.

22 Q Okay. Then if you turn to page H 14 also
23 dated -- dated December 23, 1986, correct?

24 A Correct.

25 Q And these are some more LBCO formulas in the

1 214 structure?

2 A Correct.

3 Q Except for J-20. That's just a lanthanum
4 copper one, correct?

5 A Correct.

6 Q Okay. And at this point, December 23rd, you
7 absolutely knew about the 214 structure?

8 A Correct.

9 Q During this period from -- in November and
10 December of 1986, you all were working very hard to find
11 high temperature superconductivity, correct?

12 A Correct.

13 Q Do -- we don't seem to have very much in the
14 lab notebook, though. I mean, basically we get from
15 November 14th of 1986 -- let's go back to that. Let's
16 go back to page H 4. It's November -- dated November 14
17 of 1986, correct?

18 A Uh-huh.

19 Q And you have an LBCO formula, correct?

20 A Yeah.

21 Q And it's the 555 structure, correct?

22 A Correct.

23 Q Was this right around the time that you had
24 read the Bednorz and Müller article and learned about
25 LBCO and the 555 structure?

1 A Correct.

2 Q This appears to be the first entry with -- in
3 the lab notebooks that mentions LBCO at all, correct?

4 A Correct.

5 Q Okay. So -- and then there's another formula
6 down below it that's also a 555 structure, correct?

7 A Correct.

8 Q And then if you go to page H 5, dated, it looks
9 to me like, November 19th --

10 A Yes.

11 Q -- of '86?

12 A Yeah.

13 Q And you're also working on a 555 structure at
14 that time, correct?

15 A Right.

16 Q And then on page H 6, it has a November 19th,
17 1986 date down kind of on the lower left. Do you see
18 that?

19 A Yes.

20 Q And then up at the top you're still working on
21 LBCO in the 555 structure, correct?

22 A Correct. Correct.

23 Q Okay. So, this part of the note -- this
24 notebook kind of starts on November the 14th and then --
25 on page H 4 and then by page H 14, we're already at

1 December 23rd of 1986, correct?

2 A Okay.

3 Q So, a month and a half or so --

4 A Uh-huh.

5 Q A month and a week maybe. But those are the
6 only pages in the notebook for that time period?

7 A Uh-huh.

8 Q Do you know whether there were other pages
9 during this time period that got lost, weren't copied,
10 whatever?

11 A I do not check it and do not know. I don't
12 know -- find out anything missing. I tell you the
13 truth, this notebook, since then, I put in my drawer and
14 never checked it again. I never checked it to see which
15 one is missing. There's no problem for me to look at
16 that. I don't know.

17 Q Do you believe that there's anything missing
18 out of this notebook?

19 A I don't know. I remember I also have another
20 book -- notebook. Remember? Dr. -- my -- my pattern
21 notebook. If you consider do I have anything on there
22 or not, I don't know.

23 Q That was one of the steno pads?

24 A Yeah.

25 Q Okay. We'll get to that. We'll get to that

1 later.

2 But as far as the lab notebook, the
3 formulations that you were doing --

4 A Right.

5 Q -- the different compositions that y'all were
6 trying to make, those are recorded in -- in this lab
7 notebook --

8 A Uh-huh.

9 Q -- which is Exhibit 37 --

10 A Uh-huh.

11 Q -- correct?

12 A Yes.

13 Q Hang on one second.

14 MR. HEWITT: J, could we take a short
15 break?

16 MR. BEVERLY: Sure, no problem.

17 THE VIDEOGRAPHER: The time is 10:44.

18 We're off the record.

19 (Recess from 10:44 to 11:00).

20 THE VIDEOGRAPHER: The time is 11:00 a.m.

21 We're back on the record.

22 Q (By Mr. Beverly) I want to ask you a few
23 questions about pair breaking. I know we discussed that
24 last time. I want to ask you some questions about pair
25 breaking experiments.

1 In January or February of 1987, did
2 Dr. Chu ever ask you to prepare any samples as part of a
3 pair breaking experiment?

4 A I don't think Dr. Chu ever discussed to me
5 about pair breaking. He never discussed something about
6 pair breaking for me. But --

7 Q Okay.

8 A -- if he assigned me to do some sample, that's
9 possible. But he did not mention about pair breaking.

10 Q Did Dr. Hor ever talk to you about doing pair
11 breaking experiments?

12 A I don't recall that. Mostly they do not
13 discuss with me a lot about physics pair breaking and
14 cohesions -- coherence lab, this kind of thing.

15 MR. HEWITT: What's the word? I'm sorry?

16 A No, some kind of property -- of the physical
17 property the so called coherence lab.

18 THE COURT REPORTER: Coherence?

19 A Yeah. There's something of the -- the natural
20 of the material inside they call penetration depth, all
21 kinds of thing, which great affect the physical property
22 of the material. That's the character for the -- for
23 the material but they didn't talk to me very much.

24 Q (By Mr. Beverly) All right. We talked some
25 about what Dr. Hor's role in the lab was after Dr. Chu

1 had gone to work at the National Science Foundation. I
2 want to ask you a few more specific questions about
3 that.

4 Did Dr. Hor have the authority to decide
5 what compositions of samples would be synthesized?

6 A Authority?

7 Q I mean, could he ask you to synthesize a sample
8 for him?

9 A As I mentioned before, I always respect his
10 suggestion and I always support what he want to do.

11 Q Okay. So, if he asked to you make a sample,
12 you -- you would have done it?

13 A Yes.

14 Q Okay. Did he have -- he could have made
15 samples on his own, too, correct?

16 MR. HEWITT: Objection, form.

17 A If he want to, of course, he can. If he want
18 to.

19 Q (By Mr. Beverly) And, in fact, we know of one
20 sample that he did make, correct --

21 A Yes.

22 Q -- the LBCO one, right?

23 A Yes.

24 Q Do you know whether he could decide which
25 experiments the lab was going to do?

1 MR. HEWITT: Objection to form.

2 A I think for the -- yeah, he should -- can
3 decide to do some kind of measurement or -- or that kind
4 of thing. And I think he should have been able to do
5 that because Dr. Chu assigned him to take care of the
6 group at that time.

7 Q (By Mr. Beverly) Did Dr. Hor have to -- did he
8 approve the purchases and expenditures that the lab
9 made?

10 A I don't think he need to because Dr. Chu give
11 me the authority to purchase anything and place it. Or
12 maybe for the large amount of the money, that I don't
13 remember. But as I remember, I mostly -- I just in
14 charge of the purchase of the chemical element and
15 that's -- I have the authority to do that.

16 Q But you think larger expenditures might have
17 needed -- might need to be approved by Dr. Hor?

18 MR. HEWITT: Objection to form.

19 A It might be a lot -- a lot of equipment and so
20 and so. I don't know. Because sometimes I would
21 require Dr. Chu to sign it, to permission. Only in this
22 case Dr. Chu have to go for it.

23 Q (By Mr. Beverly) I'm just talking about, you
24 know, the period where Dr. Chu --

25 A I don't recall --

1 Q -- was at the NSF.

2 A I don't recall anything doing that. But I
3 never did it. I never buy anything need to be approved.

4 Q Okay. Your purchases were essentially lab
5 supplies and chemicals?

6 A Correct.

7 Q Okay.

8 A But I can do it for equipment but that
9 equipment have to be a discussion and get approved.

10 Q During this time frame, fall of '86, spring of
11 '87 and on, did you discuss with Dr. Hor what compounds
12 to make to look for high temperature superconductivity?

13 A I think we have routinely talked, discussed,
14 but I don't remember exactly the details discussed
15 because we're in the lab. So we exchange information
16 daily, like, what kind of sample I'm making and what the
17 measurement result they have from the physical lab.

18 Q And you did this because y'all were both
19 committed to looking for high temperature
20 superconductivity?

21 A Yeah. I think that's our group's purpose.

22 Q During this, you know, September '86 to
23 August 19 -- 1987 time frame, did you ever take your
24 data to show and discuss with Dr. Hor during that time
25 period?

1 A We do discussion from day -- day by day very
2 often. I don't know what you mean show him the data.

3 Q I mean, say, for example, if you were doing
4 your X-ray diffraction patterns, would you show those to
5 him?

6 A I don't show him exactly the pattern, but I
7 would tell him sometime which sample have better X-ray
8 results, and which sample --

9 THE COURT REPORTER: Better what result?

10 A X-ray analyze results, because some of the
11 samples doesn't form the compound, so it doesn't make
12 sense to take the X-ray. So, I don't have to talk to
13 him every experiment. Only if he needs it.

14 Q (By Mr. Beverly) All right. When you thought
15 there was something important to talk to him about, you
16 would discuss it with him?

17 A Yes. We exchanged information very often.

18 Q Okay. During this time frame, September '86,
19 spring of '87, did Dr. Chu ever give you a specific
20 formula to make a sample?

21 A During what period?

22 Q During the time period when Dr. Chu was working
23 at the NSF.

24 A It was one year long.

25 Q One-year period there. And I believe the

1 evidence will show it was from September -- beginning of
2 September of '86 through August of 1987. You don't have
3 any reason to doubt that that was the time frame he was
4 there, do you?

5 A I believe one year is long. Dr. Chu have
6 talked to me about a variety of things, including
7 different compositions. But before the 1987, he did not
8 talk about anything in detail. But the whole year he
9 was away from UH. Of course we have talked to something
10 like that.

11 Q So, during that time period, he didn't give you
12 specific formulas to work on?

13 A I cannot recall that.

14 Q Do you not recall it or did he not give them to
15 you?

16 A Well, I -- I have to say within one year he
17 might give it. I cannot say he did not give me in one
18 year long.

19 Q But you don't recall any specific formulas
20 during that year -- time frame that Dr. Chu gave you to
21 work on?

22 A No. Because mostly this formula, composition
23 variation is my responsibility and my spec -- specialty.
24 So, he doesn't have to tell me 0.5 and 0.27. It's not
25 necessary to do that.

1 Q Okay. How about just if we narrow it down to
2 the January -- beginning of January 1987 through March
3 of 1987. Do you recall during that time frame whether
4 Dr. Chu ever gave you specific formulas to work on?

5 A Not in that period.

6 Q You don't recall or did he -- did he not
7 give --

8 A He did not give me any -- any particular
9 formula at that time.

10 Q I'd like you to turn to what's previously been
11 marked as Exhibit No. 19. And this is an affidavit that
12 you -- dated March 6 of 2006, correct?

13 A Uh-huh.

14 Q Did you, yourself, write this affidavit?

15 A Yes.

16 Q Okay. It was not written by anyone else?

17 A No.

18 Q Was it edited by anyone else?

19 A Supposed to be by Jim Carmady, but he didn't do
20 anything.

21 Q Okay. Mr. Carmady did not actually edit the --

22 A I don't think so.

23 Q Okay. I want to discuss some of the specific
24 statements that are in this affidavit. You -- at the --
25 at the bottom you talk about Dr. Chu being on leave and

1 serving at the National Science Foundation in 1986,
2 correct?

3 A Correct.

4 Q Okay. And you say he only came back on the
5 weekends to discuss research activity in the lab?

6 A Correct.

7 Q Did he come back every weekend?

8 A Yes.

9 Q There was never any weekends where he was at a
10 conference or anything like that?

11 A Oh, I cannot guarantee if he have conference,
12 he may not come back. Beside that, I think he come back
13 every weekend, as I remember.

14 Q Okay. Okay. You also discuss finding the --
15 discovering or finding the Bednorz and Müller article
16 from your friend Professor Zhao?

17 A Correct.

18 Q Okay. And then you say that -- in the first
19 bullet point there on page 2 of Exhibit No. 19, you say,
20 "After this discussion on the 14th of November, I began
21 to synthesize the first LBCO compound," correct?

22 A Yes.

23 Q And it's with the 555 -- actually, it looks
24 like 553 formula is what you have in your affidavit.

25 A Which -- which -- page 2?

1 Q Page 2. It says, "After this discussion on the
2 14th of November, I began to synthesize" --

3 A Oh, I think that's -- I think that's a
4 mis-writing, 555.

5 Q Okay. So, the LBCO compound that you refer to
6 in -- on page 2 of your affidavit should actually be a
7 555 compound?

8 A Yes.

9 Q Because if we go back and look at Exhibit
10 No. 37 on page H 4, that's dated November the 14th of
11 '86, correct?

12 A Uh-huh.

13 Q And it's a 555 compound --

14 A Uh-huh.

15 Q -- right?

16 A Yes.

17 Q Okay. And you also talk in here about the
18 decision whether to use the wet chemistry or the solid
19 state method --

20 A Correct.

21 Q -- for synthesis, correct?

22 A Correct.

23 Q And it was your decision to use the solid state
24 method?

25 A Correct.

1 Q Okay.

2 A You have -- you have to say my suggestion.
3 It's not my decision. Dr. Chu make the decision. But
4 have suggestion. He accept it.

5 Q Okay. Fair enough. All right. Then also on
6 page 2 you -- you say, "In late November we began to
7 apply pressure to the LBCO compounds." And you were
8 looking for -- to see whether the pressure effect would
9 enhance Tc, correct?

10 A Which one?

11 Q The second bullet point there where it starts,
12 "In late November" --

13 A November apply pressure --

14 Q Uh-huh.

15 A -- yeah.

16 Q And the reason was to see if -- if pressure
17 would increase Tc, correct --

18 A Correct.

19 Q -- the transition temperature?

20 A Correct.

21 Q Okay. And it increased -- the pressure
22 increased the transition temperature rather
23 significantly, didn't it?

24 A Correct.

25 Q All right. In the next sentence you say, "We

1 realized that simulating the pressure effect we would
2 have to substitute a small size element for barium"?

3 A Yes.

4 Q When you say "we" in that -- in that sentence,
5 who are you referring to?

6 A I think I refer to the team in our group.
7 During that period, we always consider our efforts as a
8 group effort.

9 Q And that would have been Dr. Chu --

10 A Pei and me.

11 Q Okay. You all --

12 A This core member in the group. Because at that
13 time besides us, the others are two graduate students.
14 Even Dr. Chu always refer to our team effort. So we
15 always consider we think together.

16 Q So other than -- so, the core group was
17 Dr. Chu, Dr. Hor and you?

18 A Yeah, that's what I think. But, of course,
19 apply the pressure is Dr. Chu's expertise in this field.

20 Q Right.

21 A Our lab they call high pressure, low
22 temperature lab.

23 Q Right. Do you recall a -- another member of
24 the group named John Vasilu -- Vasiliu?

25 A Who? Vasily?

1 Q Vasily.

2 A Yeah, I remember him.

3 Q Do you know -- do you recall when he came to
4 the group?

5 A I just -- right before this thing happened.
6 Yeah, he was there when we deciding to start this work.
7 And I believe Dr. Chu was really trying to attract him
8 to -- to join this effort. I remember he was very
9 negative.

10 THE COURT REPORTER: He was what?

11 A Negative attitude.

12 Q (By Mr. Beverly) Mr. Vasily was very negative?

13 A He said, "Oh, that's too good to be true."
14 When Dr. Chu talk to him about the result, I remember he
15 say that, "Uhm, that's too good to be true." So, he
16 obviously is not very interested -- never -- never --
17 ever trust what we have when we see it.

18 Q He was a -- he was a Ph.D. already at the time
19 he joined the group?

20 A Yeah, he was post-doc.

21 Q Okay. Dr. Hor was not a Ph.D. at that time,
22 correct?

23 A He was a graduate student, P -- Ph.D. graduate
24 student.

25 Q Okay. But instead of making Dr. Va -- Dr.

1 Vasily --

2 A Vasily.

3 Q -- Vasily the alternate PI of the group,
4 Dr. Chu made Dr. Hor the alternate PI, correct?

5 A Yes. As I told you before, at that time I
6 didn't know of PI. I don't think Dr. Chu ever told me
7 something like that. But he did tell me we should
8 cooperate together --

9 Q Right.

10 A -- to get the thing work.

11 Q You later learned that --

12 A Yeah.

13 Q -- Dr. Hor was the alternative PI of the group,
14 right?

15 A Later, yeah. I don't know --

16 MR. HEWITT: Objection, form.

17 A -- anything PI at that time.

18 Q (By Mr. Beverly) Okay. And -- based on the
19 results from the pressure experiments that y'all were
20 doing, you state in your -- in your affidavit that "we
21 began to substitute strontium for barium in early
22 December."

23 A Uh-huh.

24 Q Correct?

25 A Uh-huh. Yes.

1 Q You have to give me a "yes" or "no."

2 A Yes.

3 Q Okay. And that was because the strontium had a
4 smaller atomic size than barium?

5 A Correct.

6 Q Did you have -- do you recall whether you had
7 strontium in stock?

8 A Yes.

9 Q Would it have been a strontium oxide?

10 A Oxide.

11 Q Okay. So you had the strontium oxide in -- in
12 stock?

13 A Right.

14 Q You did not have to order that.

15 A No.

16 Q Okay. And at some point Dr. Wu told you to
17 stop doing strontium substitution because -- I'm sorry.
18 Dr. Chu -- at some point Dr. -- let me just start all
19 over on that. Sometimes I guess the names confused.

20 At some point Dr. Chu told you to stop
21 doing the strontium substitution because Dr. Wu was
22 going to do it, correct?

23 A Correct.

24 Q And you were supposed to do the calcium
25 substitution?

1 A Yes.

2 Q But you found out that calcium and -- and
3 calcium is a smaller atomic size than strontium, right?

4 A Correct.

5 Q But calcium didn't work?

6 A Correct.

7 Q When did you discover that calcium did not
8 work?

9 A I -- I thought I should make the sample but
10 later on I see the calculation. I did not see the
11 measurement result. But I remember clearly it was Bell
12 Lab -- Bell -- Bell Lab have the report calcium is --
13 only have 25-degree Kelvin transition temperature.

14 Q Did Dr. Chu ask you to do the calcium
15 substitution?

16 A No. I don't remember. I think I do it just by
17 myself. It's obviously.

18 Q After strontium --

19 A Yeah.

20 Q -- calcium was the --

21 A Yes.

22 Q -- obvious next step?

23 A Yes.

24 Q But it didn't work?

25 A No.

1 Q That -- and you could not have predicted
2 that -- you -- you'd hoped calcium would work, right?

3 A Yes.

4 Q But you could not predict whether or not it
5 would work?

6 A No.

7 Q Okay. All right. Then going down to the last
8 bullet point on page 2, you talk about that on
9 December 30th, Dr. Wu and his student -- that was Jim
10 Ashburn, correct --

11 A Yes.

12 Q -- brought the sample -- the strontium sample
13 to Houston --

14 A Yes.

15 Q -- for testing, for magnetic measurements --

16 A Yes.

17 Q -- specifically.

18 They could do the resistivity measurements
19 in Alabama but they couldn't do the magnetic
20 measurements there; is that correct?

21 A Yes, correct.

22 Q And then you talk about the -- during that
23 visit, there was discussion between you, Dr. Hor,
24 Dr. Wu, Li Gao in Dr. Hor's office on January 1st or 2nd
25 of 1987, correct?

1 A Correct.

2 Q And that's where Dr. Hor suggested that y'all
3 had kind of come to a dead end on the stront -- on the
4 barium substitution?

5 A Correct.

6 Q You had done strontium. You had done calcium.
7 Calcium was kind of a dead end, correct?

8 A Correct.

9 Q So, Dr. Hor suggested looking at substituting
10 for lanthanum, correct?

11 A Correct.

12 Q And he specifically suggested substituting
13 yttrium for lantreium -- lanthanum?

14 A Correct.

15 Q And that was the first time you ever heard
16 anyone suggest substituting yttrium for lanthanum?

17 A No.

18 Q No?

19 A No. I never heard anyone suggest replace
20 lanthanum by yttrium yet.

21 Q This was the first time --

22 A Yes.

23 Q -- you heard anyone --

24 A Yes.

25 Q -- suggest substituting yttrium for lanthanum?

1 A Correct.

2 Q Okay. And at that same meeting, you suggested
3 the lutetium substitution, correct?

4 A Yes.

5 Q All right. Then continuing on, on page 3 of
6 Exhibit No. 19, you talk -- you talk about Dr. Wu
7 returning to Alabama and prior to him returning to
8 Alabama you made a suggestion to him. What was that
9 suggestion?

10 A I told Dr. Wu -- I said, "Alabama have NASA.
11 They might have the yttrium oxide. You go ahead to get
12 the yttrium so you can start the substitution experiment
13 before us. Because from UH, if I don't have yttrium
14 oxide, you have to place the order at least to me two
15 weeks to obtain the material. So, if he got the
16 material, he can start the experiment early.

17 Q You went ahead and placed an order for the
18 yttrium oxide yourself, though, correct?

19 A I beg your pardon?

20 Q You went ahead and placed an order for yttrium
21 oxide?

22 A Correct. Correct.

23 Q And I think we've looked at some of the records
24 on that.

25 A I believe January 14th or something, later,

1 because that was a holiday -- school.

2 Q You previously looked at some of the -- the
3 lab -- I'm sorry -- the chemistry order tickets,
4 correct?

5 A Uh-huh. Yes.

6 Q And it was around that January 13th, 14th time
7 frame?

8 A Something -- yeah.

9 Q You finally got it at that time?

10 A I didn't got it. I didn't order.

11 Q Did you ever hear Dr. Chu tell Dr. Wu to do the
12 yttrium substitution?

13 A I never heard.

14 MR. BEVERLY: Do you have just the
15 exhibits from her deposition?

16 MR. PERRY: Yes. I -- I don't have the
17 Pei Hor exhibits, except for the ones that were
18 previously marked -- that were marked at her first.

19 MR. BEVERLY: Hang on. Can we go off the
20 record one second? I just want to see what we've got in
21 this exhibit real quick.

22 MR. HEWITT: Sure.

23 THE VIDEOGRAPHER: The time is 11:27 a.m.
24 We're off the record.

25 (Recess from 11:27to 11:29).

1 THE VIDEOGRAPHER: The time is 11:29 a.m.

2 We're back on the record.

3 Q (By Mr. Beverly) All right. And if you will
4 turn to Exhibit No. 37. You might want to keep that one
5 handy. We're going to talk about it some more.

6 But if you would turn to Exhibit No. 37,
7 which are the lab notebooks, at page H 19. Are you at
8 that page?

9 A Yes.

10 Q I believe this is the first place in the lab
11 notebooks where it shows a formula with yttrium, if you
12 look at number 7.

13 A Correct.

14 Q And that's an yttrium-strontium-copper-oxide,
15 correct?

16 A Uh-huh.

17 Q And that's dated January the 14th of 1987?

18 A Uh-huh.

19 Q Do you know why the first one seems to be an
20 yttrium-strontium and not yttrium-barium compound?

21 A Why?

22 Q Yes.

23 A I don't remember why.

24 Q Then after that, the next pages, pages 20, 21,
25 22, those appear to be the calculations that were done

1 for the formulas on H 19; is that correct?

2 A Correct.

3 Q And that -- those calculations are in
4 Mr. Wang -- Wang's handwriting?

5 A Correct. Oh, you mean -- ask me why I have
6 yttrium? I think we already start to place the order
7 for yttrium and lutetium at that time.

8 Q Well, my question was why it was
9 yttrium-strontium and not an yttrium-barium formulation.

10 A Because, as I told you before, maybe no one
11 could predict it, which one can form the 123 or 214,
12 which one possibly have high Tc, so just try it.

13 Q And you -- y'all were willing --

14 A Sub --

15 Q -- to try any -- try anything that made sense,
16 right?

17 A Correct. I have to look at the calcium
18 magnesium. I have substitute a lot of different
19 material, even lead, and magnesium, and we do the
20 substitution. But we don't know which one will work.

21 Q Do you know who came up with the formulas that
22 are listed on H 19?

23 A I believe this is myself.

24 Q All right. Excuse me one sec. Okay. I'm
25 sorry.

1 All right. Going back to page 2 of
2 Exhibit 19, the second bullet point.

3 A Which -- which one?

4 Q Exhibit 19, your affidavit, page 2. Do you see
5 the second bullet point there on page 2?

6 A Yes.

7 Q Down at the bottom it says, "During this time,
8 Dr. Chu called back from Washington D.C. every day to
9 ask about new results and set up the contact with
10 outside corporations."

11 A Yes.

12 Q I -- I didn't really understand what you meant
13 by him setting up contact with outside corporations.

14 A Because it's very important to understand these
15 materials physical property, and in our group we do not
16 have that many different facilities to do different kind
17 of tests. And then that's why Dr. Chu have contact
18 outside group lab, to run different experiments.

19 Q Okay. And during this time frame -- well, let
20 me say this: In your -- let me ask it this way. In
21 your affidavit you don't ever talk about any specific
22 formula that Dr. Chu gave you; is that correct?

23 A We start from the Bednorz, Müller's formula.

24 Q The 555?

25 A Yeah. And then later on it's the 113.

1 Q Right.

2 A Yes.

3 Q And then the 214 after that, correct?

4 A Yes.

5 Q Okay. Those were formulas that came from
6 elsewhere, right?

7 A Yes.

8 Q Okay. Dr. Chu may have told you about them,
9 but they weren't his formulas, right?

10 A No, he did not give me any particular formula.

11 Q Okay. Did you -- did y'all create a high
12 temperature superconductor with an yttrium-strontium
13 composition?

14 A Can you repeat again?

15 Q Well, when we looked back at your lab
16 notebook --

17 A Uh-huh.

18 Q -- page H 19 --

19 A Uh-huh.

20 Q -- you had the yttrium-strontium --

21 A Uh-huh.

22 Q -- formula number 7 --

23 A Uh-huh.

24 Q -- between strontium --

25 A Uh-huh.

1 Q I think there are some other -- there may be
2 some other ones in here with yttrium-strontium --

3 A Yeah, I saw that, yeah.

4 Q Did y'all ever create a high temperature
5 superconductor with an yttrium-strontium-copper-oxide
6 formulation?

7 A In fact, later -- very late strontium is very
8 difficult to form the YBCO, so we never have success
9 substitute strontium with yttrium and then produce the
10 high Tc transition at that time.

11 Q So, the strontium substitutions did not work
12 with yttrium?

13 A Did not -- I remember this kind of very small
14 amount of substitution. Sometimes very difficult to see
15 it. It may be they did not form the compound at that
16 time. I didn't remember the exact result for this
17 sample.

18 Q When you say a very small amount of strontium
19 substitution --

20 A Yeah.

21 Q -- you mean a very small amount of strontium
22 for barium?

23 A For substitution yttrium. The parent compound
24 is lanthanum 2, copper, oxygen 4. Okay? So, so-called
25 substitution is lan -- yttrium substitute -- no.

1 Strontium substitute or lanthanum only very small
2 amount, 0.075. It's a very small amount.

3 Q I thought that strontium was substituted for
4 barium.

5 A No. We have to call that as -- we call the
6 substitute lanthanum, not barium. Because lanthanum 2,
7 copper oxide -- 214 is a parent compound. Barium is a
8 substitute lanthanum. You understand me? So strontium
9 is also substitute of yttrium, not substitute of barium.

10 Q Okay. But all of these substitutions were done
11 or intended to find a high temperature superconductor
12 and they were -- correct? That's what you were looking
13 for?

14 A Well, you can say that, but we also want to
15 optimize the condition to see how high we could go, how
16 far we could go --

17 Q Right.

18 A -- correct.

19 Q And up until the 123 structure was identified,
20 your work was focused on finding high temperature
21 superconductors in a nominal 214 formulation, correct?

22 A I beg your pardon?

23 Q From the time you first learned about the 214
24 formulation --

25 A Correct.

1 Q -- until the time you learned about the 123
2 structure --

3 A Correct.

4 Q -- during that time frame, your work was
5 focused on creating high temperature superconductors in
6 the 214 structure, correct?

7 A Correct. Because I see the one in 214 is at
8 90-degree transition. It's not 70. Remember, I --
9 in -- in -- before the yttrium 1 -- 123 from
10 lanthanum-barium compound which is 836, so I saw the
11 90-degree transition.

12 Unfortunately, this sample is not stable
13 and cannot repeat the measurement. But the X-ray
14 pattern, in fact, is 123. But I do not know that --
15 misleading, misidentified as 214. So, Dr. Chu write a
16 letter to his friends, "Oh, we may have -- hopefully we
17 get the higher Tc; we believe the high Tc is there. So
18 we have to look for it, try to change the composition
19 and substitute different elements to see can we finally
20 find the real high Tc or not.

21 MR. BEVERLY: I have to object as
22 nonresponsive. I'm just doing that for the record. I'm
23 not fussing with you or anything. Okay?

24 Q (By Mr. Beverly) Did you understand that
25 Dr. Chu believed that y'all were looking for high Tc --

1 high transition temperature in the 214 structure during
2 that time period?

3 A Yes.

4 Q He believed that the 214 structure was where
5 high -- where you were going to find high temperature
6 superconductors?

7 A I don't know his belief or not. He expecting
8 to have higher T_c , even in the 214 at that time.

9 Q But the -- all the work was directed toward the
10 214 structure --

11 A Yes.

12 Q -- or most -- most of the work was?

13 A Correct. Correct. Hundred percent is 214 at
14 that time.

15 Q And during this time frame, December '86,
16 January of '87, you were still working on LBCO -- making
17 LBCO samples, right?

18 A Correct.

19 Q Okay. And then in January, did you know that
20 that -- that Dr. Wu was working on yttrium substitution
21 in Alabama? Did he ever tell you about that?

22 A I'm not quite sure. I kind of remember when he
23 returned to Alabama having called me one time or called
24 Pei -- I didn't remember -- since I know he got the
25 yttrium oxide already.

1 Q Okay. You -- at some point you learned he had
2 gotten the yttrium oxide?

3 A Yes. Yes.

4 Q Okay. But you didn't know any of the results
5 until Wu called Dr. Chu on January the 29th of '87,
6 correct?

7 A Correct.

8 Q And he reported -- at that time, he reported a
9 transition temperature of 90 degrees?

10 A Correct.

11 Q Did you talk to him -- did you talk to Dr. Wu
12 at that time?

13 A No.

14 Q And what did you learn about Dr. Wu's sample
15 that showed the transition temperature at 90 degrees?

16 A Before he came?

17 Q Right.

18 A I -- I was told by Dr. Chu, said Wu got sample
19 90 degree. And Dr. Chu -- Pei talked to Mau Kwen Wu.
20 That's what I was told. And Mau Kwen Wu seems to say --
21 Pei asked him, "How did you that and what the condition
22 is?" He said, "Oh, just as we discuss in Houston."
23 That's I heard from Pei because I'm not on the phone.
24 Pei told me that's what Dr. Wu told him.

25 Q That it was what they discussed in Houston,

1 correct?

2 A That's what I remember Pei said.

3 Q What did you think that meant?

4 A Huh?

5 Q What did you think that meant?

6 A So I feel Wu was kind -- he got the information
7 from us. That's why I always insist that this pattern
8 is UH, it's not Alabama.

9 Q My question is: What did you -- what you
10 discussed in Houston, what did you think that meant?

11 A Well, in fact, we did not discuss in detail
12 conversation. We only mention about substitution
13 lanthanum by yttrium.

14 Q But that's what was discussed?

15 A Right.

16 Q And that's what you thought Wu had -- had told
17 Dr. Pei?

18 A Yeah.

19 Q Okay. Dr. Hor. I'm sorry.

20 A Yeah, I don't know anymore because I didn't
21 talk to him.

22 Q Okay. The actual sample -- and -- and Dr. Wu
23 and -- and Jim Ashburn brought the sample to Houston,
24 correct?

25 A Correct.

1 Q Was it a pure simple or a mixed-phase sample?

2 A I believe it's not pure sample. It's still
3 green color.

4 Q It was green and black, correct?

5 A Uh-huh.

6 Q All right. And your next work focused on
7 separating the phases, correct?

8 A Correct.

9 Q Was Dr. Hor involved in identifying the black
10 phase as the superconducting phase?

11 A I don't recall.

12 Q All right. And then in your affidavit you go
13 on to talk about Dr. Hazen and Dr. Mao's work, correct?
14 That's at the top of page 4.

15 A Yes.

16 Q And you say, "On March 8th of '87, Dr. Hazen
17 and Dr. Mao identified the high temperature
18 superconductor YBCO's formula as the 123 formula phase,"
19 correct?

20 A Correct.

21 Q "With a tetragonal structure," right?

22 A Correct.

23 Q Okay. Do you know if the 123 phase in the --
24 in the tetragonal structure is a superconductor?

25 A Well, in fact -- yes, it is. But transition

1 temperature sometime will be low, should be orthorhombic
2 structure. Because the oxygen for the tetragonal is not
3 fully filled, not the --

4 THE COURT REPORTER: The oxygen for --

5 A Okay. This YBCO is very critical, depend on
6 the copper valence state. Copper can be 2 valence state
7 or 3. So, the optimum condition is to be 2.3, if I
8 remember correct. So how to adjust the copper valence
9 is depends on oxygen content. Only when the oxygen is
10 fully filled --

11 THE COURT REPORTER: Is what?

12 A -- fully filled up to 6.8, about to seven, that
13 you got the orthorhombic structure, so there's a higher
14 transition temperature. But that time because the
15 sample I use the method as reduced atmosphere so,
16 therefore, the oxygen content is not the optimal
17 condition, so you transfer it out as a tetragonal
18 structure. The oxygen content is not the optimal oxygen
19 content, so it's a tetragonal structure.

20 Q If you go back to Exhibit No. 37, the lab
21 notebook, page H 131 -- if you will just hold that there
22 because I'm going to ask -- the next question is going
23 to be back on your affidavit here.

24 On your affidavit, at the top of page 4,
25 second bullet point, you say, within half months from

1 February 22nd to March 15th, you had successfully
2 synthesized the entire substitute lanthanum by rare
3 earth elements except for praseodymium and cerium,
4 correct?

5 A Uh-huh. Correct.

6 Q And if you look at page H 31, it's dated
7 February 22nd, 1987?

8 A Correct.

9 Q Is that where you got that February 22nd date
10 from?

11 A Yes.

12 Q But the formulas that are on H 131 through --
13 looks to me like through 144 -- maybe even 145 -- those
14 are all in Mr. Wang's handwriting, correct?

15 A Correct.

16 Q Do you know whether these formulas were
17 intended as pair breaking experiments or were they
18 looking for high temperature superconductivity?

19 MR. HEWITT: Objection, form.

20 A I really didn't remember that many formulas,
21 and I even do not think I make so many sample. I cannot
22 answer your question.

23 Q (By Mr. Beverly) So, you don't remember making
24 these samples?

25 A I don't remember we have made so many samples

1 for this sample at that time.

2 We mainly is -- before the March meeting,
3 we concentration to substitute the whole element instead
4 of sub -- partially substitute.

5 Q So, after the --

6 A This was during March meeting. March
7 meeting -- what time is the March meeting? March
8 meeting is -- I didn't remember.

9 Q Shortly -- it was shortly after Dr. Hazen
10 identified the 123 structure, correct?

11 A Yes.

12 Q The march meeting was after --

13 A Right.

14 Q -- he identified the 123 structure?

15 A No, no, before.

16 Q The march meeting was before he identified the
17 123 structure?

18 A Let me see. March meeting? Yes, March meeting
19 is before that. Because we know -- no, after, after.
20 Yeah, you are right.

21 Q Because Dr. Hazen actually presented --

22 A Right.

23 Q -- the results at the March meeting, correct?

24 A Yes. Yeah. Yeah. I don't remember -- we ran
25 so many substitutions, I don't remember.

1 Q After the 123 structure was known, did you
2 begin to do complete substitution for yttrium by other
3 rare earths?

4 A Correct.

5 Q The formulas here at page 131 through 141, are
6 these the formulas that you need to create a rare
7 earth -- superconductor with rare earths other than
8 yttrium?

9 MR. HEWITT: Objection to form.

10 Q (By Mr. Beverly) Let me try that one again.
11 Just looking at the formulas on page 131 to start
12 with --

13 A Okay.

14 Q -- will those -- will those formulas give you a
15 rare earth superconductor in the 123 phase?

16 A No, there's a 214, 131.

17 Q All right. And on 132, will those formulas
18 give you a rare earth superconductor in the 123 phase?

19 A Will not we have 123 phase. It's -- if you
20 have it, maybe just a mixture. If we have 123 phase,
21 transition temperature should be higher, like 90. This
22 kind of substitution only result in 35 degree Kelvin.

23 THE VIDEOGRAPHER: We have five minutes on
24 this tape, sir.

25 Q (By Mr. Beverly) And how do you -- how do you

1 know that they result in 35-degree Kelvin?

2 A Because it's basically a 214 structure.

3 Q All right. And would that be the same for the
4 formulas that are on pages H 133 --

5 A Correct.

6 Q -- through 141?

7 A Yeah.

8 Q Those are all 214 formulas, correct?

9 A Correct.

10 Q And they would not create a 123 phase rare
11 earth superconductor?

12 A Not likely.

13 MR. BEVERLY: Okay. Do you want to break
14 for lunch at this point?

15 MR. HEWITT: Sure.

16 MR. BEVERLY: Okay. We can go off the
17 record.

18 THE VIDEOGRAPHER: This marks the end of
19 tape No. 1. The time is 1:56 a.m. We're off the
20 record.

21 (Recess from 11:56 to 1:05)

22 THE VIDEOGRAPHER: Here marks the
23 beginning of tape No. 2 in the deposition of Ruling
24 Meng. The time on the monitor is 1:05 p.m. and we're on
25 the record.

1 Q (By Mr. Beverly) Okay, Mrs. Meng. Still
2 looking at Exhibit No. 19, your affidavit from 2006.
3 And in that affidavit you discuss a meeting between you,
4 Dr. Hor, Dr. Chu and an attorney named Charles M. Cox.
5 Do you see that on page 4?

6 A Yes.

7 Q And you said that meeting occurred in 1987?

8 A Yes.

9 Q Do you recall when in 1987?

10 A When?

11 Q When.

12 A No, I didn't recall that.

13 Q Okay. Do you recall where that meeting took
14 place?

15 A I don't remember. Some -- some place or not.
16 I didn't remember. In a small room.

17 Q And you said in that meeting that Mr. Cox asked
18 you who actually suggested -- made the suggestion to
19 replace lanthanum by yttrium?

20 A Yes.

21 MR. HEWITT: Excuse me. I'm going to just
22 enter this objection and if I may, make it a running
23 objection.

24 MR. BEVERLY: I think that will speed
25 things up.

1 MR. HEWITT: I will object on the basis of
2 attorney-client privilege for any testimony that Mrs.
3 Meng gives beyond the exact statements made in
4 Exhibit 19.

5 And I will respectfully instruct Mrs. Meng
6 not to testify beyond the statements that are made in
7 that exhibit on the basis of attorney-client privilege
8 of the University of Houston.

9 THE WITNESS: Can you speak loudly? I
10 cannot hear.

11 MR. HEWITT: Okay. Did you hear me
12 enough?

13 THE WITNESS: Not exactly.

14 MR. HEWITT: I'll let the court reporter
15 repeat it.

16 THE WITNESS: Okay.

17 THE COURT REPORTER: Do you want me to
18 read it back to her?

19 MR. HEWITT: Please.

20 (The record was read as requested.)

21 MR. BEVERLY: All right. Then I will --
22 I'll accept that as a running objection because there
23 are going to be quite a few questions along this line.
24 And I think it will speed the deposition up.

25 MR. HEWITT: All right.

1 MR. BEVERLY: Mr. Hewitt does not have to
2 object to every question.

3 MR. HEWITT: Okay.

4 Q (By Mr. Beverly) In the meeting Mr. Cox asked
5 you who actually suggested to replace lanthanum by
6 yttrium; is that correct?

7 A Yes.

8 Q Okay. Let me ask you: Do you intend to follow
9 Mr. Hewitt's instruction not to answer my questions?

10 THE WITNESS: Should I follow you?

11 MR. PERRY: That's -- do --

12 THE WITNESS: I don't understand.

13 MR. PERRY: Do -- do your best -- do your
14 best to answer the questions and if there's a conflict
15 that comes up --

16 THE WITNESS: So I can answer, right?

17 MR. PERRY: You can answer. You can
18 answer the questions. There's a dispute over the limits
19 of the attorney-client privilege in this case.

20 THE WITNESS: I don't know what's the
21 limit but he did ask --

22 MR. HEWITT: Let me just be sure we're
23 clear on this procedure. I -- you've given me a running
24 instruction not to answer, which I appreciate. But,
25 obviously, you're going to go beyond the scope of the

1 statements that are made in Exhibit 23 in your
2 questioning and Mr. Perry is going to let her answer
3 beyond that. So --

4 MR. BEVERLY: Exhibit 19 but --

5 MR. HEWITT: Excuse me. Exhibit 19.

6 Thank you. And so the -- the -- the record will be made
7 clear, my only question is whether or not either of you
8 attorneys will use this deposition as evidence of waiver
9 of attorney-client privilege.

10 MR. PERRY: Should -- should we go off the
11 record for a minute?

12 MR. BEVERLY: I think that's probably a
13 good idea.

14 MR. PERRY: Okay.

15 THE VIDEOGRAPHER: The time is 1:10 p.m.
16 We're off the record.

17 (Recess from 1:10 to 1:12).

18 THE VIDEOGRAPHER: The time is 1:12 p.m.
19 We're back on the record.

20 MR. BEVERLY: We've had a discussion off
21 the record between counsel for the parties here, and,
22 Mr. Hewitt, we've agreed to give Mr. Hewitt a running
23 instruction not to answer and -- a running objection on
24 the basis of the University of Houston's claim of
25 attorney-client privilege. And I, for -- speaking as

1 attorney for Dr. Hor, have agreed that we will not use
2 his failure to object to a specific question that would
3 be subject to the running objection and instruction as
4 evidence of waiver of the university's claim of
5 attorney-client privilege.

6 MR. HEWITT: Okay. I think it just
7 technically extends also to her answer. In other words,
8 what I'm asking is that on behalf of your clients, Pei
9 Hor and Ruling Meng, you will not use the testimony from
10 this deposition as grounds for waiver of the
11 attorney-client privilege that I have objected to.

12 MR. PERRY: And we'll agree.

13 MR. BEVERLY: Well, we're not agreeing
14 that we couldn't use the testimony as evidence to
15 present to the judge regarding kind of the subject
16 matter which we're of -- the attorney-client privilege
17 that we're talking about.

18 But I won't -- what we will agree is that
19 the lack of an objection to any particular question or
20 answer, we would not use that as evidence of waiver.
21 I'm not saying we wouldn't show the judge some of the
22 testimony in -- in explaining why we think there is no
23 attorney-client privilege here.

24 MR. HEWITT: Well, I -- I think that may
25 be in the area of my concern, that is, if she adds by

1 her testimony to what she's described in the affidavit
2 of Exhibit 19 and you use that as a basis for waiver,
3 then that's what I'm -- am concerned with and objecting
4 to, is I don't want waiver -- I don't want this
5 deposition to compound the issue of waiver on
6 attorney-client privilege.

7 MR. BEVERLY: Well, I think my -- my
8 position is we're not using the -- the testimony as
9 evidence of the university waiving its privilege. But
10 the testimony -- the questions and the testimony may be
11 relevant to the judge's determination of whether there
12 has been a waiver or not or whether there -- maybe not
13 whether there has been a waiver or not but whether there
14 really is an attorney-client privilege that should
15 attach to this. Do you understand the distinction?

16 MR. HEWITT: You're -- if I understand it,
17 then you're not talking about waiver?

18 MR. BEVERLY: Right.

19 MR. HEWITT: You're talking about whether
20 or not any of her answers are privileged or not,
21 regardless, of the issue of waiver?

22 MR. BEVERLY: Correct.

23 MR. HEWITT: That would be your exception
24 to my request?

25 MR. BEVERLY: Right. Uh-huh.

1 MR. HEWITT: All right. Mr. Perry?

2 MR. PERRY: Agree.

3 MR. HEWITT: Agreed.

4 MR. BEVERLY: Okay.

5 Q (By Mr. Beverly) All right. All right, Mrs.
6 Meng. In that meeting in 1987, Mr. Cox asked you who it
7 was that actually suggested to replace lanthanum by
8 yttrium, correct?

9 A Correct.

10 Q And at the time you remembered that it was
11 actually Dr. Hor, correct?

12 A Correct.

13 Q And if you look at Exhibit No. 25, which has
14 been previously marked, which it is your deposition. Do
15 you see that?

16 A Yes.

17 Q Go to page 42 of your deposition. There is
18 discussion regarding the meeting in January of 1987. Do
19 you see that?

20 A Yeah. Correct.

21 Q You were being examined by an attorney for
22 Dr. Wu and the University of Alabama? Is that --

23 A Correct.

24 Q Is that your understanding?

25 A Yes.

1 Q Okay. And one of the questions that you were
2 asked beginning on line 17 is, "Do you recall who the
3 others at that deposition were"?

4 MR. HEWITT: Excuse me. Discussion. You
5 said deposition.

6 MR. BEVERLY: Oh, I'm sorry.

7 Q (By Mr. Beverly) "Do you recall who the others
8 at that discussion were?" Do you see that and your
9 answer?

10 A Yes.

11 Q What was your answer?

12 A I said that's the team member in our group.

13 Q And the team members -- you go on to say that
14 the team members were Dr. Wu, Pei -- it says Pei Hor.
15 That meant Dr. Hor, correct?

16 A Yes.

17 Q And Gao Li which is --

18 A A student.

19 Q -- Li Gao, right?

20 A Yes.

21 Q And then below it it says, "Hoi," H-o-i. Who
22 is that?

23 A Pei Hor.

24 Q Pei Hor? Okay. And you say that Dr. Chu was
25 not there, right?

1 A Yes.

2 Q And then going to the next page, which is
3 page 43, you were asked the question, "Who made -- who
4 described the concept of substitution of yttrium for
5 lanthanum during that discussion," correct?

6 A Yes.

7 Q And your answer was, "I couldn't recall very
8 well. But I remembered it's a member in our group at
9 UH, the people in UH group."

10 A Correct.

11 Q Did I read that correctly?

12 A Correct.

13 Q Okay. And then the next question is, "So,
14 there were three of you there"?

15 A Yes.

16 Q Your answer was, "Yes, either me or Paul." But
17 I believe if you look at the corrections that you made,
18 which are at the end of your deposition, there's a
19 correction for page 43, Line 8?

20 A Yes.

21 Q You'll have to go to the very end of your
22 deposition. There's -- and there--

23 A Yes, 43, 8 --

24 Q Right. But what I'm asking you about is
25 this -- it's called Amendment Sheet. It's at the very

1 end of your deposition. There you go. That's it.

2 And if you look, there's an amendment for
3 page 43, Line 8, correct on --

4 A Yes.

5 Q -- the second page of your amendment?

6 A Yes.

7 Q And you said it read, "Yes" -- it now reads,
8 "Yes, either me or Paul." But it should read, "Yes,
9 either me or Pei," correct?

10 A Yes.

11 Q Okay. So, your answer was actually that you
12 and Pei --

13 A Yes.

14 Q -- were the members of the group there?

15 A Uh-huh.

16 Q All right. And you said you did not recall but
17 it was a member of the group, right?

18 A Yes.

19 Q Well -- and the members of the group there were
20 you and Pei, right?

21 A Correct.

22 Q And it wasn't you?

23 A No.

24 Q So, it had to be Pei, correct?

25 A That's what I mean.

1 Q Okay. And then in the next line you say, "Did
2 Dr. Wu contribute to that discussion at all?" Your
3 answer, "Definitely not."

4 A Yes.

5 Q Li Gao was also there, right, at that meeting?

6 A I cannot remember well. Because he's a
7 student, very a -- student. I cannot remember well if
8 Li Gao actually is there or not. I just think he might.
9 I'm not quite sure.

10 Q But Li Gao did not make the suggestion for
11 yttrium substitution?

12 A He did not attend the discussion. I remember
13 he just stand outside the door, lean on the door maybe.
14 I don't know how long he stay there.

15 Q Is there a reason you did not identify Dr. Hor
16 as the person who made the suggestion for yttrium
17 substitution at the time you gave your deposition?

18 A Because he did not suggest anything. So
19 Dr. Wu -- you ask Dr. Wu?

20 Q No.

21 A Sorry.

22 Q I think you misunderstood my question.

23 A Okay.

24 Q Is there a reason you did not identify
25 Dr. Hor -- Dr. Hor as the person who made the suggestion

1 for yttrium substitution when you gave your deposition?

2 A I know I should verify Dr. Chu as the person
3 who substitute. He have the suggest to replace
4 lanthanum with yttrium. So, that's why -- it's very
5 hard for me to say something contradictory with the
6 whole deposition. I remember I was told I have to
7 verify that.

8 Q Who told you that you had to verify that?
9 "That" being that Dr. Chu was the one with the yttrium
10 substitution concept.

11 A I should not say that, right? You say I should
12 not say any lawyer?

13 MR. PERRY: You can answer the question.

14 A Can I say that?

15 MR. PERRY: Yes, you can answer.

16 A It's Charles Cox.

17 Q (By Mr. Beverly) Charles Cox is the one who
18 told you that you should testify that way?

19 A Yes.

20 Q Did Dr. Chu ever tell you you should testify
21 that way?

22 A No.

23 Q Going back to the meeting in 1987 with Mr. Cox.
24 At that meeting, Mr. Cox asked you who had come up with
25 the idea for yttrium substitution and you said that you

1 did not remember?

2 A Correct.

3 Q But you did actually remember?

4 A Yes.

5 Q And when you said you did not remember, what
6 did Dr. Chu do?

7 A I don't remember. I think he didn't say
8 anything. I didn't remember.

9 Q Well, in your affidavit you say, "Dr. Chu
10 immediately pointed to me and said, Ruling" --

11 A No, before that. Before my answer I do not
12 remember. Right after Charles Cox asked me and Dr. Chu
13 point at me, he said, "Do you remember I call you and
14 tell you?" And then my answer is I do not remember,
15 which is after that.

16 Q Right.

17 A That means after I say I do not remember
18 Dr. Chu is not point to me and ask me anymore.

19 Q But you knew at that time that what Dr. Chu had
20 said was not true?

21 A Yes.

22 Q At that meeting, did Dr. Chu ever suggest to
23 Mr. Cox that Dr. Hor and you should be listed as
24 inventors for the patent?

25 A I remember Charles mentioned something, "Oh,

1 one pair hands cannot be co-inventor." And Dr. Chu
2 said, "No, No, we all to be in -- inventor."

3 Q So, Dr. Chu did say --

4 A Yes.

5 Q -- that you should all be listed as inventors?

6 A Yes. He just -- because Charles Cox said "one
7 pair of hand cannot to be a -- co-inventor." And
8 Dr. Chu said, "No, no, no. We all to be inventor."

9 Q Did you know what Mr. Cox meant by a pair of
10 hands?

11 A Pair of hands just you do something -- people
12 ask, you to do it. You don't have the idea. You don't
13 know what to do, just -- you know, be used by someone to
14 do things.

15 Q Do you think that the description describing
16 you as a pair of hands accurately reflected your
17 contribution to the -- to the patent?

18 A I think it's totally wrong. I never be one
19 pair of hand. As I stated before, I'm the colleague
20 with Dr. Chu. For professional academia, we are a pair,
21 the same. But, of course, he's my boss.

22 Q Do you think describing Dr. Hor's contribution
23 as a pair of hands accurately reflected what he did with
24 respect to the patent?

25 A No, I don't think so.

1 Q Why not?

2 A Because he had contribute for the experiment,
3 and, also, he had the idea to replace lanthanum with
4 yttrium. How can we be pair of hands? In fact, I think
5 they don't understand Dr. Chu at all. If we are pair of
6 hands, Dr. Chu will long kick me out from group. I
7 don't think I can cooperate with him for 30 years. Why
8 don't we use pair of hands to stay with him for so long?
9 He's not that kind of person. He's very smart.

10 Q He's wanted smart people working with him?

11 A Of course. How can you use pair of hands for
12 30 years? So I think some people was -- misunderstood
13 Mr. Chu.

14 Q Do you recall Dr. Hor leaving that meeting
15 after the pair of hands comment?

16 A I didn't remember. I tell you the truth. At
17 that time, I'm not that sensitive. I'm not quite
18 understand the law and all kind of thing, so I'm not
19 very sensitive about that.

20 Q Have you ever heard Dr. Chu talk about
21 Dr. Hor's ability as a scientist?

22 A No. He didn't talk to me about that.

23 Q Okay. Did he ever compare Dr. Hor with Dr. Wu?

24 A No, I don't recall.

25 Q Did Dr. Chu ever say anything negative about

1 Dr. Hor's ability as a scientist?

2 A No, I don't recall.

3 Q When you say you don't recall, you mean you
4 never heard that or you don't remember?

5 A I don't remember.

6 Q All right. Continuing on with Exhibit No. 19.
7 You said that you did not -- in that meeting you did not
8 want to make Dr. Chu mad, correct?

9 A Yes, of course.

10 Q Had you ever seen Dr. Chu get mad before?

11 A Very rarely.

12 Q Very rarely?

13 A Yeah, sometime, of course. We get mad at each
14 other sometime.

15 Q And then a couple of months later you said
16 Charles Cox called you?

17 A Correct.

18 Q Okay. When Mr. Cox called you a couple of
19 months later, was there anybody else present --

20 A No.

21 Q -- other than you?

22 A No.

23 Q Okay. Was that also in 1987, or was that
24 later?

25 A I really cannot recall the exact time.

1 Q Okay. And Dr. -- I'm sorry. Mr. Cox again
2 asked you if you remembered that Chu had called you and
3 directed you to replace lanthanum with yttrium?

4 A He did not ask me do I remember or not. He did
5 not.

6 Q What did he ask you?

7 A He said we need to identify Dr. Chu to suggest
8 a substitute yttrium with lanthanum in order to win the
9 UH patent," something like that okay. Not exactly. And
10 I said, "Why?" He said, "Because Dr. Chu is the rep --
11 representative of UH. If you do not identify him, UH
12 will lost patent."

13 Q Did you know anything about patent law at that
14 time?

15 A No, I'm not sensitive and I'm not concerned. I
16 trust Dr. Chu. I don't want to ask anything more.

17 Q You told Dr. -- I'm sorry. You told Mr. Cox
18 that this was definitely your group's idea, right?

19 A I think he know that. I think he know that.

20 Q What else happened in that phone call with
21 Dr. -- with Mr. Cox?

22 A I believe he's only -- he's not only talked to
23 me once. At least twice he talked to me about that.

24 Q Okay.

25 A And then later on he bring some -- some kind

1 of -- the paper, asked me to sign it. I -- I feel so
2 ashamed to tell you that. At that time I don't
3 understand the declaration, what's the consequence, what
4 kind of responsibility I have for the declaration. Now
5 I realize that's a declaration. Okay? He asked me to
6 sign it.

7 Q Did you write the declaration that --

8 A No, never.

9 Q Do you know who wrote the declaration?

10 A I don't know. I guess Charles Cox. I don't
11 know. Very likely he write it because I found some
12 academic -- mistake. Dr. Chu would not make this kind
13 of mistake. So, very likely he write it.

14 Q You actually signed a couple of different
15 declarations, correct?

16 A Correct.

17 MR. HEWITT: J, I think they're all
18 exhibits. I may be wrong.

19 MR. BEVERLY: You think all of them are?

20 MR. HEWITT: I tried to make them all
21 exhibits. I may not have succeeded.

22 MR. BEVERLY: Yeah, no drafts. Let's see.
23 Right. Okay.

24 Q (By Mr. Beverly) If you would turn to Exhibit
25 No. 28. Is that one of the declarations that you signed

1 in the Wu versus Chu patent interference?

2 A Correct.

3 Q Did you draft this declaration?

4 A No.

5 (Exhibit.39 marked.)

6 Q (By Mr. Beverly) I'm going to hand you what's
7 been marked as Exhibit No. 39.

8 MR. HEWITT: Okay. I want to be sure it's
9 clear that my objection extends to -- to -- my objection
10 based upon attorney-client privilege extends to any
11 discussion regarding this declaration and the changes
12 made in it on the basis of attorney-client privilege.

13 MR. BEVERLY: And I understand that.

14 MR. HEWITT: And I -- just to be
15 completed, then, I need to instruct Mrs. Meng not to
16 answer any questions relating to this draft declaration.

17 THE WITNESS: Not to answer, right?

18 MR. HEWITT: That's correct.

19 MR. PERRY: You can answer them. He's
20 protecting his interests.

21 THE WITNESS: Not to answer.

22 MR. PERRY: He's protecting his
23 interests -- his client's interest.

24 MR. BEVERLY: Make sure she understand
25 that.

1 MR. PERRY: Yes.

2 Q (By Mr. Beverly) All right. Meng Exhibit 39,
3 this is not signed by you, correct?

4 A I didn't sign it.

5 Q You did not sign this?

6 A Huh-uh.

7 Q There are corrections that are -- there's
8 handwriting on this. If you look at page 1, can you
9 identify -- well, let me just ask you this. Is that
10 your handwriting on page 1?

11 THE WITNESS: Do I answer? No?

12 MR. PERRY: You can -- you can answer.

13 A Yes.

14 Q (By Mr. Beverly) That is your handwriting on
15 page 1?

16 A Uh-huh.

17 Q Okay. Where it says "In a discussion held
18 in" -- it originally says, "In a meeting held in my
19 office" --

20 A Yes.

21 Q -- changed to "a discussion held in Hor
22 office," correct?

23 A Yes. Yes.

24 Q That's your handwriting. If you look at
25 page 2, can you identify the handwriting on page 2?

1 A No. I don't know.

2 Q You don't know whose handwriting that is?

3 A I don't know.

4 Q It's not yours?

5 A Not mine.

6 Q Okay. Do you recognize it as Dr. Chu's
7 handwriting?

8 A I don't know.

9 Q Okay. Okay. So you cannot identify the
10 handwriting that's on --

11 A No.

12 Q -- page 2?

13 A No.

14 Q Is that a no?

15 A I don't know. I don't know. I cannot
16 identify.

17 Q Okay. When you -- you made the changes on
18 page 1, correct?

19 A Correct.

20 Q Was the handwriting on page 2 already on the
21 document when you received it?

22 A I don't remember. Maybe not. I don't remember.

23 Q Do you recall discussing this declaration with
24 anyone, this draft?

25 A Which -- when?

1 Q At any -- at the time in 1990.

2 A No. I never talk about anything about the

3 patent to anyone else.

4 Q Do you know -- this -- this document has a

5 Bates number -- what's called a Bates number, RLM, down

6 here at the bottom.

7 A Uh-huh.

8 Q That's you, correct?

9 A Yeah.

10 Q So, this document was in your possession?

11 A I don't -- you mean in my office?

12 Q Right.

13 A We found that in 2006 --

14 THE COURT REPORTER: I'm sorry?

15 A We found that in 2006 have to pick out

16 everything and we found this -- this document.

17 Q (By Mr. Beverly) You found this document in

18 2006?

19 A Yeah, I believe you had the original one or --

20 I don't know. A copy anyway. I found it in 2006.

21 Before that I never -- I never look at this thing.

22 Q And who was -- when you say "we," who do you

23 mean?

24 A Well, after that, Pei discussed with me and

25 then I -- I see other material so I found it myself.

1 Q Okay. So you found this document in your
2 office?

3 A Yeah, with the other together.

4 Q All right. Going back to Exhibit No. 28. Was
5 this the declaration that Charles Cox wanted you to sign
6 after the phone -- after you had the phone calls with
7 him?

8 A Yes. All the thing he want me to sign is after
9 he talked to me. And I agree to do that.

10 Q You agreed to do that?

11 A I agreed to verify Dr. Chu. That's how he
12 bring this to me to sign it.

13 Q All right. If you will, look at Exhibit 34,
14 please. Can you identify what that document is?

15 A Did you ask me a question?

16 Q Yes. Can you identify what the document is?

17 A This one?

18 Q Yes.

19 A This is the affidavit.

20 Q It's one you made on the 25th of May of 2006?

21 A Correct.

22 Q Okay. And in paragraph 2 of that you stated
23 "Dr. Paul Chu, as group leader, assured us, Dr. Hor and
24 me, based on our actual inventive contributions that we
25 would be listed as co-inventors on all patent

1 applications for YBCO." Correct?

2 A Yes.

3 Q Is that a true statement?

4 A Yes. I always consider we are the co-inventor.

5 Q You also talk about \$137,000 you received in
6 1987?

7 A Yeah, of course. Of course.

8 Q Okay. Did Dr. Chu ever tell you why you were
9 getting \$137,000?

10 A Because DuPont buy our patent. DuPont pay it.

11 Q Did he tell you why you were getting -- I
12 understand that DuPont had paid money to the University
13 of Houston, correct?

14 A I don't think he have to tell me. He didn't
15 say it.

16 Q He just said, "Here is -- "here is \$137,000"?

17 A He said, "DuPont buy our patent."

18 Q Okay.

19 A And then -- so, that's how I got the money.

20 Q Did he say --

21 A I know some other people get very small amount
22 because I think there's -- that's general kindness for
23 other people to share it. But he give me a
24 large bill -- check so --

25 Q Was that a lot of money to you and -- at the

1 time you got it in 1987?

2 A Oh, yeah, very large. That's how I buy my
3 first house.

4 Q Did you ever learn that Dr. Hor -- Dr. Hor had
5 also gotten \$137,000?

6 A Yes, I know it.

7 Q Did you ever discuss that with Dr. Hor?

8 A No.

9 Q Did Dr. Chu ever tell you that Dr. Hor was also
10 getting \$137,000?

11 A I believe he told me. Otherwise, how can I
12 know that? I -- I never talk about the patent and all
13 kind of thing with other people. Even Dr. Chu I didn't
14 ask, never.

15 Q Okay. So -- you also state in this affidavit
16 that you did not learn until February 2006 that you and
17 Dr. Hor were not listed as co-inventors?

18 A Correct.

19 Q That you learned that from John Warren?

20 A Yes.

21 Q Who is John Warren?

22 A He is a vice president in UH in charge of
23 intellectual property.

24 Q And what did Mr. Warren tell you?

25 A He looked at the computer. He said, "Ruling,

1 from day one, there's only one solo inventor. You are
2 not the co-inventor." That's all he told -- told me.

3 Q The only inventor was Paul Chu, correct?

4 A Yeah. He said from day one there's the solo
5 inventor. In fact, if not Pei suggest me to find out, I
6 wouldn't want to ask. I never thought about that I'm
7 the co-inventor.

8 Q So, Dr. Hor asked you -- did you go --

9 A Because on the way back Dr. Chu very happy. He
10 told me, "Ruling, our patent, will" -- "will be issued
11 pretty soon." I was very happy. He said "our patent."
12 Because always our patent. So, I consider Pei is also
13 co-inventor. I want to let him know. Pei was startled
14 with it. He said "Are you sure?" I said, "Sure."

15 Q So, was this also in 2006 --

16 A Yes, yes.

17 Q -- that Dr. Chu told you the patent would be
18 issued --

19 A Yeah.

20 Q -- our patent will be issued --

21 A "Our patent will be issued soon." So I --

22 Q Let me -- let me finish my question. I'll let
23 you finish your answer. Okay. It's a little hard for
24 her to -- if we talk over each other. Okay? All right.

25 So in January of -- was it in early 2006

1 Dr. Chu told you "our patent will be issued soon"?

2 A Correct.

3 Q Okay. And then you went and talked to Dr. Hor
4 about that?

5 A Not right away. Later on I talked to Dr. Hor
6 about that. I remember.

7 Q And what did Dr. Hor tell you?

8 A He said, "Are you sure our patent?" I said
9 "Yeah." I have no doubt about that. I never thought
10 about that.

11 Q But then he -- did he ask you to go talk to
12 John -- John Warren?

13 A He suggest me to find out.

14 Q Did you go to Jon -- talk to John Warren --

15 A And I --

16 Q -- by yourself?

17 A I said, "How can I find out?" And he said,
18 "Why don't you go to talk to John Warren? He's in
19 charge of UH intellectual" -- "intellectual property."

20 Because I know John well. We have many
21 many times discussion, talk about patent. People have
22 question, ask him, he have to come to me. That's why I
23 know him well.

24 Q Okay. Did you go there by yourself to talk to
25 Mr. Warren?

1 A Yes.

2 Q And what did you -- what was your reaction when
3 you found out you were not listed as an inventor?

4 A First, it's a very -- I -- I'm shocked. I
5 don't believe Dr. Chu would do this on to me. And,
6 secondly, I'm very disappointed. I have great respect
7 for Dr. Chu, so trust him. I never thought about that.
8 But how can that's the result? Number 3. So how can --
9 how can I'm not the co-inventor? I have done so much
10 for this patent from the -- this is what kind of patent?
11 It's material patent, including make the superconductor
12 material or fabricate the material. I contribute a lot
13 on that. From which point of view, of course, I should
14 be co-inventor. I never thought about that.

15 Q What did you do after you talked with
16 Mr. Warren?

17 A Warren?

18 Q Yes.

19 A So, I come back and talk to Pei from bottom of
20 my heart. I'm good -- very good friend with Dr. Chu for
21 a long, long time. I have great respect -- respect for
22 him. I don't want to hurt him. I don't want to damage
23 his image.

24 So, therefore, I talked to Pei. We both
25 consider we should do it from in -- inside, so we talked

1 to our director, Jacobson.

2 Q Dr. Jacobson?

3 A Yes. I -- we want Jacobson talk to Dr. Chu,
4 ask Dr. Chu to correct this mistake quietly -- quietly.
5 That means we don't have to make this thing -- you know,
6 very -- spread outside. That's the way we want to do
7 it.

8 We do not want to go to UH and go to
9 law -- we did not in the very beginning. We just
10 hopefully Dr. Chu can under -- understand his mistake
11 and correct it quietly.

12 (Exhibit.40 marked.)

13 Q (By Mr. Beverly) I'm going to hand you what's
14 been marked as Exhibit No. 40. Can you identify that
15 document -- several documents, actually? Can you
16 identify that?

17 A Yes. It's e-mail between Dr. Chu and me.

18 Q Okay. I'm going to -- one sec. The first page
19 is an e-mail from Dr. Chu to you on February the 5th of
20 2006, correct?

21 A Correct.

22 Q Where -- do you know where Dr. Chu was at the
23 time?

24 A I don't know if he's Hong Kong -- I believe
25 this is from Hong Kong because he said when he come

1 back, so that means he's not in Houston.

2 Q Okay. And the e-mail address he's using is a
3 ust.hk?

4 A That's Hong Kong. Hong Kong. Science
5 Technology University.

6 Q In Hong Kong?

7 A Yeah, HK in Hong Kong.

8 Q And that's where Dr. Chu was working at this
9 time, correct?

10 A Correct.

11 Q Okay. And he says, "I was surprised on Friday
12 at learning what had happened a week ago." Do you know
13 what he meant by that?

14 A I believe Dr. Jacobson talked to him after we
15 talk to Dr. Jacobson. Very likely Dr. Jacobson talked
16 to him. Otherwise, he didn't know it.

17 Q And when you were referring to the talk with
18 Dr. Jacobson --

19 A Correct.

20 Q -- that was when you went to -- was it just you
21 that went to Dr. Jacobson?

22 A No, Pei and I both go together.

23 Q And that's when you were asking Dr. Jacobson to
24 resolve this internally?

25 A In fact, that's why we talk to him because he's

1 a director and we want him to talk to Dr. Chu to correct
2 this mistake.

3 Q All right. And then Dr. Chu wanted to talk to
4 you on February the 7th --

5 A Correct.

6 Q -- when he was back in Houston?

7 A Yeah.

8 Q Okay. The next page is on February 7th, an
9 e-mail from you to Dr. Chu, correct?

10 A Yes.

11 Q And you were telling him you were not -- you --
12 you had high blood pressure and could not go to school
13 that day?

14 A Correct.

15 Q Was that true?

16 A Not really true.

17 Q Did you just not want to talk to him?

18 A Correct.

19 Q Why did you not want to talk to him?

20 A For the so many years, 20 years, 30 years, he
21 can only spend five minutes convince me to do different
22 things. I also trust him. But each time I know I want
23 to do it -- I don't want to change my mind.

24 I believe he must be try -- trying to
25 convince me because Jacobson already told me, "Dr. Chu

1 said you are different with Pei," and so and so -- you
2 know. But I think I have -- many things can be
3 different with Pei. He's faculty. I'm not. He's a
4 physicist. I am not. I'm material scientist. And
5 other is different. But for this require is the same.
6 We want to be recognition as a co-inventor. For this
7 one, we are the same.

8 So, therefore, I believe Dr. Chu may want
9 to try to convince me this idea may not be right. But I
10 don't want to change this idea. That's why I didn't
11 want to talk to him.

12 Q All right. And then if you look at page 3, the
13 third page, that is an e-mail from you to Dr. Chu on
14 February the 15th of 2006, correct?

15 A Yes.

16 Q Okay. And so in it you say, "Three weeks ago
17 Pei Hor and I were -- "found out that you are the only
18 person as inventor in the U.H. HTS patent," correct?

19 A Yes.

20 Q You meant the YBCO and rare earth -- and
21 related rare earth patent --

22 A Yes.

23 Q -- that's at issue in this lawsuit, correct?

24 A Yes.

25 Q Okay. Then you tell him how you went to talk

1 to John Warren, correct?

2 A Yes.

3 Q And then you say, "On February 9, Dr. Jacobson
4 talked to me about this issue and he said you said that
5 Pei and I are not the same case and should be treated
6 differently."

7 A Yes.

8 Q So you spoke with Dr. Jacobson on February 9th.
9 Was that the second time you spoke with Dr. Jacobson?

10 A Yes.

11 Q Okay. So, you had spoken with Dr. Jacobson --

12 A In fact, this time he called me. He want to
13 talk to me. The first time we request to see him.

14 Q The first time you and Pei went to see him?

15 A Correct.

16 Q Okay.

17 A And this time Dr. Jacobson called me. He said
18 he want to talk to me.

19 Q What did Dr. Jacobson tell you?

20 A Just exactly in this e-mail.

21 Q Your e-mail is also copied to John Warren and
22 Allan Jacobson. Do you see that?

23 A Yes.

24 Q Why did you do that?

25 A Why I do that? Oh, yes. I want to let Allan

1 Jacobson remember that's what he told me as a record.
2 And also for the John Warren. If I'm wrong all -- they
3 should write an e-mail to me say, "No, Ruling you are
4 wrong." You know what I mean?

5 So -- because in this e-mail I mentioned
6 two persons. One is John Warren. One is Jacobson. I
7 just want them know I sent this e-mail to Dr. Chu and I
8 tell the truth. Is that the truth. If they both think
9 I'm wrong or I misunderstood, so forth, whatever, they
10 should write e-mail, respond to me as soon as possible;
11 let me know it.

12 Q Did you ever get an e-mail from Mr. Warren or
13 Mr. Jacobson?

14 A No.

15 Q Did you ever talk to Mr. Warren after this
16 e-mail?

17 A This was very late. I remember we went to see
18 what's -- Hammer and the school chancellor together.
19 Who is it -- Hammer -- what's the lady's name?
20 Remember, Pei and I went to meet you --

21 MR. HEWITT: Donna Cornell?

22 A -- and John Warren and also -- Ham --

23 MR. BEVERLY: Donna Hamilton at the time.

24 MR. HEWITT: Oh, I'm sorry. Hamilton?

25 A Yeah, that's it. But after that, I never talk

1 to -- no. In fact, I think we -- Pei Hor and I went to
2 see John Warren once after we found it's not -- Chu is
3 the only inventor.

4 I come back to Pei, tell him that. I
5 believe Pei and I go to see John Warren again. The
6 purpose is we say, "Well, if Jacobson cannot solve the
7 problem, probably John Warren from the UH level can do
8 the better job to solve this question -- this problem
9 quietly within UH."

10 Anyway, that's UH's patent. We are
11 faculty in UH. That should not have any problem. I
12 remember I saw them -- I see John Warren twice. But
13 John Warren told me, he said, "Ruling, now you sit here.
14 I talk to you as a friend. But next time if this
15 subject -- issue bring to UH, I will stand on UH's
16 side." I mean -- I said, Why? We are also faculty here
17 at UH. What's the difference?" But any way that's the
18 discussion.

19 Q (By Mr. Beverly) What did Mr. Warren say when
20 you asked him that?

21 A Huh?

22 Q When you asked Mr. Warren, why he would stand
23 on the UH side --

24 A Because he represent UH.

25 Q What did he tell you?

1 A That's what he said.

2 Q Okay.

3 A He said, "You got to remember you" -- "from now
4 if you bring this issue to the school, you cannot talk
5 to me anymore, and I will not talk to you as individual
6 friend."

7 Q Did Mr. Jacobson ever talk to you again about
8 the issue?

9 A No. Never.

10 Q Did Mr. Jacobson ever show you a copy of a
11 patent application?

12 A He showed me something. When -- when he talked
13 to me later, he was very nervous, run in my office,
14 "Ruling, you made a mistake. The patent is not totally
15 different from what you think." He bring me -- some
16 patent -- yeah, I remember it's kind of patent. I
17 didn't remember. But that's not right. It's not the
18 real '866 patent. But I don't remember which patent.
19 He did bring me a patent.

20 Q Okay.

21 A And he say, "Ruling, you are wrong. This is
22 totally different issue."

23 (Exhibit.41 marked.)

24 Q (By Mr. Beverly) I'm going to hand you what's
25 been marked as Exhibit No. 41. Can you identify what

1 that document is?

2 A I beg your pardon? You ask --

3 Q Can you identify what this document is?

4 A Oh, there's -- the university require me to
5 return all the documents related to the YBCO research as
6 well as some patterns. That's why I collect all the
7 thing and submit to them.

8 Q Okay. And so you gave -- you gave this -- all
9 these documents to Ms. Pruski; is that correct?

10 A I guess so. I cannot read his signature.

11 Q "The above data was transferred by Ruling
12 Meng --

13 A Yeah.

14 Q -- to Leslie Pruski --

15 A Yeah.

16 Q -- on March 14, 2006."

17 A Oh, yeah, yeah. Right.

18 Q Okay. And you understood Ms. Pruski worked for
19 the general counsel of the University of Houston?

20 A I don't know.

21 Q You did not know at the time? Who told you
22 that -- to give -- to give all this material to -- to
23 Ms. Pruski?

24 A Oh, I think it was required by Hamilton.

25 Q Did Ms. Hamilton tell you that?

1 A No, he didn't tell me personally.

2 Q How did you find out?

3 A I didn't remember. Maybe a phone call or
4 someone told me. I didn't remember.

5 (Exhibit.42 marked.)

6 Q (By Mr. Beverly) I hand you what's been marked
7 as Exhibit 42. Can you identify that document?

8 A Yes.

9 Q What is it?

10 A It's another declaration of -- from me.

11 Q Did you sign this one?

12 A I don't think so, because it looks like draft,
13 right?

14 Q So you believe it's a draft declaration?

15 A Let me see. I didn't remember.

16 MR. HEWITT: While Mrs. Meng is looking at
17 it, on behalf of the University of Houston, I'm going to
18 make the same objection that I just made to the other
19 draft declaration of Exhibit 39, that this is a draft
20 and that it's protected by attorney-client privilege,
21 and will instruct Mrs. Meng not to answer any questions
22 relating to the document.

23 A Which one? This one?

24 MR. HEWITT: Yes.

25 Q (By Mr. Beverly) Ms. Meng, are you still an

1 employee of the University of Houston?

2 A No, I'm retired.

3 Q Do you recall -- when did you -- did you -- is
4 this one of the documents that you found in your office?

5 A Yes.

6 Q And there is handwriting on page 1 of the
7 document. Do you see that?

8 A Yes.

9 Q Can you identify whose handwriting that is?

10 THE WITNESS: Do I answer that?

11 MR. PERRY: Uh-huh.

12 A I believe that's Dr. Chu.

13 Q (By Mr. Beverly) And if you look at page 2 of
14 the document, there's handwriting in a couple of spots
15 there. Can you identify whose handwriting that is?

16 THE WITNESS: Shall I answer that?

17 MR. PERRY: Yes.

18 A Dr. Chu.

19 Q (By Mr. Beverly) And on page 3, there's more
20 handwriting. Is that also Dr. Chu's?

21 A Correct.

22 Q On page 4, there is some handwriting over on
23 the side?

24 A That's me.

25 Q Where it says "Hor." That's your handwriting?

1 A Yes.

2 Q On page 5, can you identify the handwriting?

3 A That's Dr. Chu.

4 Q And on page 6, can you identify the
5 handwriting? I'm sorry. I don't think there is any
6 real handwriting on page 6. On page 7, can you identify
7 the handwriting?

8 A Yes. Dr. Chu.

9 Q Dr. Chu's handwriting also on page 7?

10 A Yes.

11 Q Okay. And on page 8, there's some handwriting
12 down at the bottom, "Where is Hor"?

13 A Page 9.

14 Q I'm sorry. Page 9.

15 A That's my handwriting.

16 Q That is your handwriting? Do you recall
17 make -- do you recall writing that on here?

18 A That's my handwriting.

19 Q I know, but do you recall writing this?

20 A I did not recall so long, but I can recognize
21 that's my handwriting.

22 Q Okay. Do you know what you meant by, "Where is
23 Hor"?

24 A Well, must be in the whole declaration did not
25 give the credit to Dr. Hor. That's one meaning. I

1 consider we are the team at that time. That's --

2 Q Okay. When you got a copy of this draft
3 declaration, did it already have Dr. Chu's handwriting
4 on it?

5 A I cannot remember.

6 Q Do you know why Dr. Chu was making changes to a
7 declaration that was going to be signed by you?

8 A I don't know. Because all the declarations
9 never written by myself. I never -- so I suppose -- I
10 guess I suppose Dr. Chu or Charles Cox write it.

11 Q So, do you know who prepared the draft of this
12 declaration?

13 A I don't know.

14 Q Okay.

15 A I did not realize this thing have been written
16 by myself.

17 Q Did you provide -- do you recall providing
18 Mr. Cox with the information that is in this draft
19 declaration, Exhibit No. 42?

20 A You mean I provide the information for him?

21 Q Yes. To Mr. Cox.

22 A I -- he have all the information from me.

23 Q He already had the information from you?

24 A Yeah. He had all the data. He come to me all
25 the time to ask for data. He want the data so and so.

1 Q Okay. So, Dr. Cox -- I'm sorry. Mr. Cox had
2 come to you several times asking you for data?

3 A Oh, more than several times.

4 Q Okay.

5 A Numerous times.

6 Q He came to you numerous times asking for data?

7 A Yes, correct.

8 Q Did he ever interview you with respect to what
9 had happened during this time frame?

10 A No. All he come just to have the paper, have
11 little bit blanket space asking me, "Ruling, what day,
12 what sample, what chemistry?" And then a few -- I tell
13 him. He read them off. He ever, never showed me the
14 pattern, the whole thing. I even did not look at the
15 whole page.

16 Q Did he ever ask you about your role in the
17 invention of the patent?

18 A He never asked. And I assume he know it,
19 otherwise, all the time he come to me to ask me how the
20 experiments is done, how the sample was make, he only
21 come to me. Even John Warren knew that.

22 Q And that's why you assumed he knew about your
23 role?

24 A Of course. Nobody else can do that. Even I
25 have to go to represent UH to have the deposition to --

1 in the interference with Alabama. That means I'm the
2 only person who was qualified to do that. I know the
3 whole thing. So, Charles Cox certainly know that.

4 Q So, for example, looking at the -- some of the
5 information that's on page 3 of this draft declaration,
6 where you talk about formulas J-1 through J-6, is that
7 the type of information that you would have been
8 providing to Mr. Cox?

9 A Yes. Or maybe he collect from my book.

10 Q Did you ever discuss this declaration with
11 Dr. Chu?

12 A No.

13 Q Did Dr. Chu ever tell you he had made revisions
14 to your declaration?

15 A No. Never.

16 Q Do you know whether there were any other draft
17 versions of this declaration?

18 A No.

19 Q There were no other versions of this?

20 A I do not know anything else.

21 Q Okay. This is the only draft version you --
22 you ever saw?

23 A 2006 I saw that.

24 Q 2006 you saw it?

25 A 2000 2006 -- before, I -- I never asked. I

1 assumed this thing should be written by then.

2 Q In paragraph 5 beginning on page 2, it says,
3 "During the remainder of November of '86 and bridging
4 into December of 1986, as directed by Dr. Chu, I or
5 others working under the direction and supervision of
6 Dr. Chu and me began at least two activities. Do you
7 see that?

8 A Yes.

9 MR. HEWITT: I'm sorry. What paragraph is
10 that?

11 A Page 2 --

12 MR. BEVERLY: That's paragraph 5.

13 A Page 3.

14 Q (By Mr. Beverly) And then you talk about the
15 two activities. One of the activities was trying to
16 make LBCO --

17 A Correct.

18 Q -- according to the nominal composition and the
19 Bednorz and Müller article, correct?

20 A Yes.

21 Q That nominal composition was 555?

22 A Correct.

23 Q Right?

24 A Yes.

25 Q And then the second activity you say was making

1 LBCO to a differing nominal composition, correct?

2 A Correct.

3 Q Which I -- and then if you look, it says,
4 "Among the first samples of LBCO, the differing nominal
5 composition which I prepared in accordance with
6 Dr. Chu's instructions were LBCO samples of the
7 following nominal formulas designed by my identification
8 designation J," correct?

9 A Correct.

10 Q Did Dr. Chu give you the instructions on
11 formulas J-1 through J-6?

12 A In fact, it's not because it's not necessary
13 for him to give me so detail. Otherwise, I really
14 become pair of hands, but I'm not. So I do that.
15 Dr. Chu do not give me detail how to vary the
16 composition. But he just said, "Let's do it, to change
17 the composition. It might result in different
18 property." And then I do it. I decide on the
19 composition variation by myself.

20 Q J-1 through J-6 are all to a nominal 214
21 composition --

22 A Correct.

23 Q -- correct?

24 A Correct.

25 Q And that was the composition that had been

1 identified -- that was the formula that had been
2 identified by Dr Kitazawa, correct?

3 A Correct.

4 Q And that was in December -- you believe that
5 was in December of 1986, correct?

6 A Yes.

7 Q All right. So, it was true that this was an
8 activity that bridged into December of 1996, as you put
9 in your deposition --

10 A Yes.

11 Q -- I mean in your declaration? All right.

12 MR. BEVERLY: We've been going for over an
13 hour. Good time for a short break.

14 THE VIDEOGRAPHER: The time is 2:17 p.m.
15 We're off the record.

16 (Recess from 2:17 to 2:31).

17 THE VIDEOGRAPHER: The time is 2:31 p.m.
18 We're back on the record.

19 Q (By Mr. Beverly) All right. If you would, turn
20 to Exhibit No. 27. And this is the final version of
21 your declaration that you did sign in 1993, correct?

22 A Correct.

23 Q Okay. If you would turn to paragraph 7 and
24 paragraph 8. And that -- you talk -- your declaration
25 states information about a mid-December telephone call

1 from Dr. Chu describing his ideas for making various
2 elemental substitutions in an LBCO superconductor
3 system. Do you see that?

4 A Yes.

5 Q And was that information in this declaration
6 correct or incorrect?

7 A I cannot recall this one.

8 Q You do not remember Dr. Chu --

9 A Yeah, I cannot --

10 Q -- calling you in mid-December?

11 A I cannot say -- he didn't call to make barium
12 element substitution or not. I don't remember. I don't
13 remember this one.

14 Q Okay. And then in paragraph 8, you say that
15 during the December -- do you -- do you specifically
16 remember the December '86 telephone conversation or not?

17 A There's so many conversations.

18 Q Okay. All right.

19 A Paragraph 8 is a substitute for strontium --

20 THE COURT REPORTER: I'm sorry?

21 A For paragraph 8 is a about substitute strontium
22 or barium, that's true.

23 Q (By Mr. Beverly) Okay. You remember that?

24 A Yes.

25 Q Okay. And then continuing on in paragraph 9,

1 it says, "Dr. Chu described his idea for compositions
2 wherein the rare earth element of lanthanum was
3 substituted for by non-magnetic rare earth, similar
4 elements including yttrium or lutetium." Is that
5 correct?

6 A I don't believe I remember he call me and talk
7 about substitution yttrium for lanthanum.

8 Q Okay. Did you testify that the first time you
9 heard about the substitution of yttrium for lanthanum
10 was in the January meeting in -- in Dr. Hor's office?

11 A Correct. Correct.

12 Q -- correct? And that's the same time you
13 suggested the lutetium substitution, correct?

14 A Correct.

15 Q Okay. And in paragraph 10, you say, "Dr. Chu
16 instructed me by that telephone call to next prepare,
17 among other substituted compositions, YBCO compositions
18 in accordance with the same program I had earlier
19 prepared and tested different nominal formulations of
20 LBCO for superconducting properties."

21 Did I read that correctly?

22 A I don't remember.

23 Q Okay. If Dr. Chu had asked you or instructed
24 you, as you say in this paragraph 10, to prepare YBCO
25 compositions, would you have done that?

1 A Very unlikely. Dr. Chu will not tell me how to
2 do the different compositions.

3 Q I mean if he had -- my question is: If he had
4 instructed you by that telephone call in mid December --

5 A Yes, I would do it --

6 Q Okay.

7 A -- very quick.

8 Q There's nothing in your lab notebooks
9 indicating you did that in December, correct?

10 A Yes.

11 Q For instance -- we looked at your lab notebooks
12 earlier. The first time that yttrium appears to show up
13 is in mid-January?

14 A We do not have the yttrium oxide before
15 January, February. We did not have it.

16 Q And the first place that an yttrium
17 substitution shows up at all in your lab notebooks is in
18 mid-January, correct?

19 A Yes, correct.

20 Q And paragraph 12 of Exhibit No. 27 -- all
21 right -- you discuss Dr. Chu asking to you prepare
22 better samples of lanthanum-strontium-copper-oxide,
23 correct?

24 A Yes. You are talking about paragraph 12,
25 right?

1 Q Paragraph 12.

2 A Okay. Yes.

3 MR. HEWITT: Is there a question?

4 A What's your question?

5 Q (By Mr. Beverly) You say, "The results of this
6 testing were encouraging of a belief that
7 lanthanum-strontium-copper-oxide composition possessed a
8 higher Tc than lanthanum barium, LBCO," correct?

9 A Correct.

10 Q What was the transition temperature of the
11 lanthanum-strontium compound?

12 A It should be 45.

13 Q So, it was a little bit better than LBCO?

14 A Much better. LBCO is 35.

15 Q 35. So it's much better. 35. It went up to
16 45, right? It was still well below the temperature of
17 liquid nitrogen, though, correct?

18 A Correct. Correct.

19 Q In paragraph 13 -- again, going in
20 paragraph 13 -- actually, strike that.

21 In paragraph 14 you talk again about
22 the -- that you continue to work on lanthanum, the LBCO
23 compounds, correct? And you also worked on the
24 lanthanum-strontium compounds, correct?

25 A Yes.

1 Q Okay?

2 A Yes.

3 Q All right. And then paragraph 13 -- going back
4 to paragraph 13, there's a brief mention of the
5 discussion with Dr. Wu, correct, in late December? Here
6 you have it in late December of 1986, correct?

7 A Where?

8 Q Paragraph 13, the second sentence.

9 A What's described to Mau Kwen Wu. Yeah, that's
10 the meeting I'm talking about.

11 Q And in your declaration here you have it in
12 late December of 1986. But you now think it probably
13 took place in early January of '87, correct?

14 A Yes.

15 Q All right. And you describe the meeting as
16 being attended by yourself, M. K. Wu and others,
17 correct?

18 A That's only one occasion, the meeting with M.
19 K. Wu.

20 Q Well, the others in this case would be Dr. Hor,
21 correct?

22 A The meeting in Dr. Hor's office in the -- is in
23 late December, right?

24 Q Well, it's a little unclear exactly when it
25 took place, from what I've seen. But assuming for the

1 moment it was in late December, this is -- this is the
2 only meeting that there was where the yttrium
3 substitution was discussed, correct?

4 A Yes.

5 Q And here you refer to it as being attended by
6 yourself, M. K. Wu and others. Do you see that?

7 A Uh-huh.

8 Q The others -- the others would be Dr. Hor,
9 right?

10 A Yes.

11 Q So in this version of your declaration, Dr. Hor
12 has been completely excluded at least by name?

13 A I didn't see Dr. Hor's name.

14 Q It doesn't even mention that it took place in
15 Dr. Hor's office, does it?

16 A Yes.

17 Q It doesn't mention that Dr. Hor was there, does
18 it?

19 A Yes.

20 Q In that meeting -- pardon me if I've already
21 asked this. But in that meeting, was there any mention
22 of a particular composition for an yttrium substitution?

23 A No.

24 Q Okay. It would have just been substitute
25 yttrium in the nominal 214 formula, correct?

1 A Correct.

2 Q Okay. In that meeting did anyone say that
3 yttrium -- the yttrium substitution would definitely
4 produce a comp -- composition that superconducted at a
5 higher transition temperature than LBCO?

6 A I did not remember anyone say that.

7 Q If you go to paragraph 16 and paragraph 17, it
8 talks about YBCO formulations, correct?

9 A Okay.

10 Q And it refers to an Exhibit F which is
11 actually, I believe, page H 49 out of the lab notebooks.
12 Although, the "H" part has been covered up here. But
13 Exhibit F is this page here.

14 A Yes.

15 Q And, again, I think we looked at this -- no, we
16 didn't actually look at this page earlier. But is this
17 the first place in the lab notebooks where the
18 yttrium-barium formulation shows up?

19 A Yes.

20 Q It's on January the 15th of 1987, correct?

21 A I guess so. Because I didn't check for a long
22 time.

23 Q Okay. Well, at least that's -- that's the date
24 on the page, correct?

25 A Right. Right.

1 Q Okay. And there are two of the YBCO
2 formulations. There's one that has a destination SB-2.
3 There's one that has the designation SB-3. Do you see
4 that?

5 A Which one you refer to?

6 Q On Exhibit F.

7 A 49?

8 Q Yeah, H 49. This page here.

9 A Yeah.

10 Q Okay?

11 A Right.

12 Q Did you give them -- did you give those
13 formulas those designations?

14 A Yes.

15 Q Okay. And then there's also an yttrium-barium,
16 YBCO formula, above those that does not have a
17 designation. Do you see that?

18 A That's no barium on this page. They're all
19 strontium.

20 Q You may have the wrong page.

21 A No. I know that's the sample right over there
22 but I didn't -- this SB-2, SB-3, do you see that?

23 Q I see it's SB-2 and SB-3.

24 A Right. B is barium.

25 Q S is strontium?

1 A Yeah.

2 Q But the formulas themselves say YBCO, right?

3 A Yes. I didn't -- don't know why I put "S."

4 Q Okay. But there's one above it, a Y.6, barium
5 .42, Cu 04 formula. Do you see that one?

6 A Yes.

7 Q It does not have a designation at all, does it?

8 A Yes.

9 Q Do you know why that formula did not have a
10 designation?

11 A I don't remember. Even the top label, that's
12 Y -- 3S Y -- I don't remember.

13 Q Okay. Have you ever seen any test results for
14 these formulas that are listed in Exhibit F of
15 Exhibit 27?

16 A I beg your pardon? Which result?

17 Q Any kind of test results for these.

18 A From where?

19 Q For these formulas that are listed on Exhibit
20 F.

21 A No, I don't remember.

22 Q Do you know why you picked these particular
23 yttrium-barium compositions?

24 A I don't remember.

25 Q All right. I'm going to -- to paragraph 18 of

1 your declaration. It talks about the formulas that are
2 listed on page H 50, which we discussed earlier in your
3 deposition. And the -- that's Exhibit G to Exhibit
4 No. 27. Do you see that page with the 26 formulas on
5 it?

6 A I beg your pardon?

7 Q You see the Exhibit G, Exhibit No. 27, which
8 has the 26 formulas listed on it?

9 A Twenty-seven, right.

10 Q I think it's 26, but -- this page here.

11 A Oh. H what?

12 Q Exhibit G to No. 27.

13 A I'm confused. H what?

14 Q It's H 50.

15 A Okay.

16 Q You're looking at page H 50 out of the lab
17 notebooks but it's the same -- it's the same page here,
18 correct?

19 A Oh, yeah.

20 Q Okay. And you testified that all these are in
21 your handwriting except No. 26, correct?

22 A Correct.

23 Q And that Dr. Hor gave you the -- the
24 formulations for the YBCO compounds --

25 A Correct.

1 Q -- correct?

2 A Correct.

3 Q Okay. And that was done after the telephone
4 call from Dr. Wu --

5 A Correct.

6 Q -- on January 29th?

7 A I believe scandium also is Pei's idea.

8 Q Okay. But they were done -- these formulas
9 were written down after Dr. Wu's telephone call on
10 January 29th?

11 A Correct. I was told -- Dr. Chu asked me to
12 write it down while he talk with Mau -- Mau Kwen on the
13 phone. That's what he told me. I don't know exactly
14 what happened.

15 Q All right. Going to paragraph 19 of your
16 declaration, you refer to Exhibit H which are pages H 51
17 through H 61, correct?

18 A Yes.

19 Q And you said on -- that on January 29th, you
20 identified these compe -- compositions for production
21 and testing in accordance with Dr. Chu's directions to
22 make compositions involving substitution variously for
23 lanthanum or barium of an LB -- LBCO composition,
24 correct?

25 A Yes.

1 Q Okay. And did you write these formulas on
2 January 29th, January 30th of 1987?

3 A I didn't recall that.

4 Q You did not?

5 A Because that also Mr. Wang's also handwriting.

6 Q 1 through 5 on page -- on the first page, which
7 is H 51, I believe, that's your handwriting, correct?

8 A Correct.

9 Q Okay. And then after that, it's Wang's
10 handwriting?

11 A Yes.

12 Q At the bottom of the first page, H 51, there's
13 a formula LYB-1, correct?

14 A Yes.

15 Q Do you see that?

16 A Yes.

17 Q And it purports to be a lanthanum-ytterbium
18 formula --

19 A Yes.

20 Q -- correct?

21 A Yes.

22 Q Except that when you go down and actually look
23 at the composition, the -- the calculations, it only
24 refers to yttrium, doesn't it?

25 A Correct.

1 Q Do you know why --

2 A I don't know.

3 Q -- this is listed as an ytterbium formula?

4 A I don't know. I even didn't pay attention
5 about that.

6 Q Also on page H 52, there's an LYB-2 formula.

7 A That's not my handwriting.

8 Q Okay. All right. That's Mr. Wang's
9 handwriting?

10 A Yes. It doesn't make sense for me to add the
11 "B" over there.

12 Q What was the purpose for making all of these
13 various samples?

14 MR. HEWITT: Objection to form.

15 Q (By Mr. Beverly) What were y'all trying to do
16 when you were making all these various samples?

17 A Well, I think no one really know what the
18 formula -- what the composition would be generally high
19 Tc. I mean, that's the purpose. We have variation, the
20 ratio of element, the different element to see how we
21 can reach the higher Tc. I think basically it's from
22 that. Nobody can predict exactly what happen.

23 Q But the purpose was to look for high Tc?

24 A Correct.

25 Q Okay. All right. If you would turn back to

1 Exhibit No. 25, which is your deposition in the Wu
2 versus Chu.

3 If you look at pages 16 and 17 -- see if I
4 got that right, actually. Actually, pages 17 and 18.
5 I'm sorry. There's one answer I kind of -- one question
6 and answer I wanted to ask you about.

7 Going -- I'm sorry. Go back to page 16.
8 And the lawyer here is asking you questions about
9 paragraph 5 of your declaration. This gets a little
10 confusing. And he was asking you questions about nom --
11 the nominal formulas you were using. Do you see that?

12 A Which line?

13 Q Page 16, starting on Line 12. It talks about
14 the reference to preparation of LBCO compositions having
15 nominal formulas different from that described in the
16 Bednorz and Müller article.

17 A Yes.

18 Q Okay. And he's asking you how you arrived at
19 the different nominal formulas, correct?

20 A Yes.

21 Q Okay. And as you testified earlier, the
22 Bednorz and Müller nominal formula was 555, right?

23 A Yes.

24 Q And then 113 also, correct?

25 A Yes.

1 Q Okay. And you talk about that on page 17. You
2 say, "It's 214 so we changed the composition," correct?
3 Do you see that around --

4 A Yes.

5 Q -- page 11 -- line 11 and 12?

6 A Yes.

7 Q Okay. You changed the formula. And it goes,
8 "How did you arrive at the specific nominal formulas to
9 test?" You said, "Basically we had to depend on the
10 structure." Are you talking about the 214 structure?

11 A I think the answer is not clear.

12 Q Okay. Well, let's go on. He says, "Can you
13 describe for me how you would change it in light of the
14 structure?" And then you say, "The first sample we make
15 based on Bednorz and Müller's composition is
16 superconducting." And that was the 555, correct?

17 A Yes.

18 Q All right. But you say it was -- the Meissner
19 effect was very small, that it's not -- there's an
20 indication it's not a single phase or not the right
21 phase, correct?

22 A Correct.

23 Q Okay. "It might have possibly superconducting
24 and then I remembered the Japan's -- the identical
25 structure is 214." Okay?

1 A Correct.

2 Q Now, if you go to -- again, we're going to go
3 to the corrections that you made to this at the end of
4 your deposition. And if you look at the amendment
5 sheet -- and it's the third one on the amendment sheet
6 for page 18, Line 1.

7 A Which one?

8 Q Number 3 on the amendment sheet, page 18, Line
9 1.

10 A Page 18?

11 Q Look on the amendment sheet.

12 A Page 1?

13 Q Number 3. Yeah, page 1 of 4.

14 A Page 3. Huh?

15 Q Look at the number 3. They're numbered. See?
16 One, two, three, four.

17 A Okay.

18 Q Look at number 3. Page 18 Line 1, correct?

19 A No, it's not right. Are you talk --

20 Q It's the first page, first page of that.

21 A First page?

22 Q Right.

23 A Yeah.

24 Q Number 3 --

25 A Oh, okay.

1 Q Do you see that? Okay. Page 18, line 1?

2 A Yeah, I remember.

3 Q Would you read that for me?

4 A Yeah. "I remember it Japan's iden --
5 identical" --

6 Q Then how should it read?

7 A And then should read, Then I remember Japan,
8 they identify."

9 Q Okay. So, your testimony should have read?

10 A The Japan's --

11 Q "Then I remembered the Japan's. They identify
12 the structure is 214"?

13 A Correct.

14 Q And when you're referring to that, you're
15 referring to Dr. Kitazawa, correct?

16 A Correct.

17 Q You testified that Dr. Chu called you all the
18 time?

19 A Yes.

20 Q Did you ever -- did Dr. Chu, when he called
21 you, did he ever ask you to speak to Mr. Wang?

22 A Wang?

23 Q Yeah.

24 A I never ask him to speak for who. If Dr. Chu
25 want to speak to anyone, it's his decision.

1 Q No, my question is: Did -- when you were
2 talking Dr. Chu on the phone, one of these many
3 telephone conversations --

4 A Right.

5 Q -- did he ever ask you, "Could you put Mr. Wang
6 on the line" --

7 A No.

8 Q -- "I need to talk to Mr. Wang"?

9 A Never.

10 Q Okay.

11 A He decide material preparation and so on
12 directly to Mr. Wang. He also would talk to me and
13 maybe I can ask Mr. Wang to help at that time.

14 Q So, if -- if there were materials that Dr. Chu
15 wanted prepared, he talked to you?

16 A That's what I understand.

17 Q Okay.

18 A Or if they do have, I cannot say no because I
19 don't know.

20 Q Okay.

21 A I can only answer I don't know.

22 Q Did you ever observe Dr. Chu giving Mr. Wang
23 directions about materials?

24 A I don't recall anything happen.

25 Q You don't recall ever seeing that?

1 A No.

2 Q Wang helped you synthesize materials in the
3 lab, though?

4 A Yes.

5 Q Okay. And he worked generally under your
6 direction?

7 A Well, we are all colleagues.

8 Q Okay.

9 A But, he doesn't have experience on
10 superconducting material. That's it.

11 Q Could Mr. Wang make compounds that he wanted to
12 make in the lab?

13 A I don't know he make that or not. But
14 basically I understand I would require him to make and
15 he do it. Maybe he do it himself. I don't know.

16 Q Okay. Do you know anything about Dr. Chu
17 giving instructions to Mr. Wang to make compounds?

18 A I do not know anything. What I'm talking is
19 early that stage.

20 Q Right. And we're talking --

21 A Yeah.

22 Q Just to make clear for the record, all my
23 questions are talking about --

24 A Yeah.

25 Q -- November '86 through the middle of '87.

1 A Correct.

2 Q After 1987, you continued to work for Dr. Chu
3 in his -- in his lab, correct?

4 A Correct.

5 Q Up until your retirement in 2007, correct?

6 A Correct.

7 Q And Dr. Chu's life's work and his -- has been
8 directed at finding high temperature superconductivity.
9 Is that a fair statement?

10 A Say that again.

11 Q Dr. Chu, the -- the essence of his life's work
12 has been looking for high temperature superconductivity?

13 A Correct.

14 Q And that was -- that was your passion, also,
15 correct?

16 A Correct.

17 Q And you were willing to try any ideas that
18 Dr. Chu came up with?

19 A Correct.

20 Q You even -- I think you even testified that you
21 synthesized some compositions that Dr. Chu -- that came
22 to him in a dream, correct?

23 A Correct. It happened.

24 Q After 1987, how many different compositions and
25 formulas has -- has Dr. Chu given you to -- to search

1 for high temperature superconductivity?

2 A After 19 -- after '87?

3 Q After '87. Twenty years in there. After --
4 after all the events here happened and --

5 A I cannot tell you. That's a lot.

6 Q More than a thousand?

7 A No, no, no. Not more than a thousand. But
8 it's quite a lot.

9 Q Several hundred?

10 A No.

11 Q No?

12 A No. But they do have a lot.

13 Q A lot of compositions?

14 A Because later on we -- high temperature
15 superconductor was developed --

16 THE COURT REPORTER: You what? High
17 temperature --

18 A Later on superconductor research developed so
19 fast, within a very short time we find another three
20 high temperature superconductor system. And after the
21 last one is mercury -- mercury. And the temperature
22 stay at 135. No one had discovered anything. But after
23 that, Dr. Chu was very active, think about something
24 different. It's only after that time Dr. Chu had a lot
25 of different ideas, want to make different compounds.

1 MR. BEVERLY: I'll object as
2 nonresponsive. I don't think -- go off the record real
3 quick.

4 THE VIDEOGRAPHER: The time is 3:06 p.m.
5 And this marks the end of tape 2. We're off the record.

6 (Recess from 3:06 to 3:10).

7 THE VIDEOGRAPHER: Here marks the
8 beginning of tape 3 in the deposition of Ruling Meng.
9 The time on the monitor is 3:10 p.m. We're back on the
10 record.

11 Q (By Mr. Beverly) Would you look at what has
12 been previously marked as Exhibit No. 5. And that's a
13 declaration by Pei-Hreng Hor. Do you see that?

14 A Yes.

15 Q Have you ever seen that document before?

16 A No.

17 (Exhibit.43 marked.)

18 Q (By Mr. Beverly) I'm going to hand you what's
19 been marked as Exhibit No. -- that's a bad copy of it.
20 I'll take it off. Something wrong with our copier.

21 I'm handing you what's been marked as
22 Exhibit No. 43. Can you identify that document, just
23 generally? I mean, is this -- are these lab records
24 from the period of 1987 regarding the YBCO compositions
25 and -- and other various compositions?

1 A Do you ask me question?

2 Q Yes.

3 A What?

4 Q Are these lab records from the 1987 time period
5 regarding the YBCO composition, making the composition,
6 test results, that kind of thing?

7 A I want to find out what date they have.

8 Q Okay.

9 A Do we have a date? I -- I just cannot
10 remember. Because if they don't have date on, they --
11 yeah, I think that's 214 but there's no date. I believe
12 it's 214 structure. Mostly it's 214, yes.

13 Q Okay.

14 A Yes, different substitution 214. And even we
15 still working on 113.

16 Q So, you think that -- so you're not sure what
17 time frame these are from?

18 A I think this is kind of summary. Not by date.

19 Q It's a summary?

20 A Yeah, because after H 223, I already have a lot
21 of transition temperature 90 degrees, 89. That should
22 be 123 or 214 -- I don't remember. But there is 102,
23 102, you look at that. That's summary.

24 Q Okay. Looking at page H 223, for example --

25 A Yes.

1 Q -- there are various columns here, correct?

2 A Right.

3 Q And in the first column there's 102 written
4 down?

5 A That's the label of the sample.

6 Q That's the sample label?

7 A Which indicates certain composition.

8 Q Okay. And that would match up somewhere else
9 in the lab notebooks with a -- with a formula?

10 A Correct.

11 Q -- labeled 102?

12 A Correct.

13 Q And then the next column, what is that?

14 A That's the same 102. I make a lot of samples.

15 Q These are -- so, that sample -- using the same
16 composition, 102, you would make all these various
17 different samples and -- and have a label for each one
18 of the samples you made?

19 A Likely. Very likely.

20 Q Okay. So, you would have a composition 102 and
21 then you would have a sample 2-1-0?

22 A Correct.

23 Q Okay. All right. Oh, okay. And would the
24 two -- would the 2-1 -- the first two numbers, 2-1,
25 would that be February 1 and then sample zero? And the

1 next one February 1, sample 1, February 1, sample 2? Is
2 that how you would do that?

3 A I don't remember.

4 Q Is it possible that that's how you identified
5 these various samples of the same composition?

6 A It may be possible. The same composition I do
7 a lot of sample --

8 Q Uh-huh.

9 A -- on different day.

10 Q Okay. All right. The third column, what is
11 that?

12 A I believe the third column should be the
13 time -- synthesis time.

14 Q Synthesis time?

15 A But the 100 doesn't make sense. I really
16 didn't remember.

17 Q Okay. But nothing in the fourth column,
18 really. What about the fifth column? What do those
19 notations indicate?

20 A I don't think they make a lot of sense, the
21 fourth column.

22 Q Okay. And then the column Tc 1?

23 A Onset.

24 Q That's the onset of the transition temperature?

25 A Right.

1 Q And then you have Tc --

2 A Two is zero.

3 Q That's a zero.

4 A Zero.

5 Q Zero resistance temperature?

6 A Right. Trans -- transition start and end.

7 Q Okay. And then R, what is the column?

8 A Just by ohm meter measure resist. Also, see

9 the transition from metal to semiconductor --

10 THE COURT REPORTER: See the transition

11 from what?

12 A Transition, resistivity transition. We see 300

13 ohm, 1 -- 120 ohm. That's what -- the resistance for

14 the sample.

15 Q (By Mr. Beverly) Okay. And on page H 224, does

16 that -- does that same convention carry on here?

17 A Correct.

18 Q Okay. And the same for H 225? You have a --

19 you have a sample number more specific identifier?

20 A Yes. Yes.

21 Q And then some information regarding --

22 A I think this composition slightly different

23 now.

24 Q Yeah -- well, I mean, it's someone 103 --

25 A Yeah, something like that, yeah.

1 Q Right. But it's a sample number --

2 A Yeah. Yeah.

3 Q -- or a composition number --

4 A That's right.

5 Q -- and then a sample --

6 A Right.

7 Q -- identifier, correct? Okay.

8 And that continues on for the next several
9 pages, correct?

10 A Yes. I think that's the same.

11 Q All right. Is this your handwriting --

12 A Yes.

13 Q -- on those -- on those pages?

14 A Yes.

15 Q -- page 223 --

16 A Yes.

17 Q -- through about H 228?

18 A Correct.

19 Q Okay. And if we look at H 236, is that the
20 same thing?

21 A Yes.

22 Q And if you want to determine which sample
23 you're looking at, you would go back and look at the lab
24 notebooks and find that -- that identifier for that
25 particular composition?

1 A Correct.

2 (Exhibit.44 marked.)

3 Q (By Mr. Beverly) Let me hand you what's been
4 identified as Meng Exhibit No. 44. And can you identify
5 what that document is?

6 A That's a result summary. It's not yttrium.
7 They record -- they recording other rare earth,
8 europium, and the other elements.

9 Q This -- and it's your -- one of your lab
10 notebooks re -- regarding rare earth substitutions,
11 correct?

12 A Correct. The yttrium is 123 -- it's the 123
13 sample substitution lanthanum by europium and other rare
14 earth elements.

15 Q And it's marked pages H 385 through H 468,
16 correct?

17 A Correct.

18 Q And this shows the test results for those
19 various compositions?

20 A Some of them have, yes. Some indicate Tc. If
21 they don't have the indicator Tc, probably result is not
22 good, didn't come out good or some reason.

23 Q Okay. And you followed the same convention
24 in -- in recording these results that you previously
25 testified about as far as these -- the columns and the

1 way you recorded the sample numbers and the specific --
2 specific sample identifiers, correct?

3 A Correct. Because the rare earth compound, the
4 melting point is very different so, therefore, you have
5 to optimize each different rare earth, the processing
6 temperature, time and condition. You cannot apply the
7 identical condition for the yttrium to the other. So, I
8 have two different samples, vary the process and
9 condition and find out the optimal condition.

10 Q All right. And so, like, on page H 387,
11 March 11th, 1987 -- do you see that?

12 A 3 --

13 Q And this is for --

14 A 380 -- 387?

15 Q H 387, right. Are you there?

16 A Yes.

17 Q That's -- for example, that one is March 11th
18 of 1987, correct?

19 A Correct.

20 Q And that's for europium --

21 A Correct.

22 Q -- barium copper oxide?

23 A Correct.

24 Q And that's a complete substitution of europium
25 for yttrium?

1 A Correct.

2 Q And this was done after the 123 structure was
3 identified?

4 A Correct.

5 Q And then --

6 MR. BEVERLY: Go we go off the record real
7 quick? I want to see if we need to -- we've got all
8 these in or not.

9 THE VIDEOGRAPHER: The time is 3:25 p.m.
10 We're going off the record.

11 (Recess from 3:25 to 3:27).

12 THE VIDEOGRAPHER: The time is 3:27 p.m.
13 We're back on the record.

14 (Exhibit.45 marked.)

15 Q (By Mr. Beverly) I hand you what's been marked
16 as Exhibit No. 45. Can you identify what that document
17 is? Can you identify that document --

18 A Yes.

19 Q -- Mrs. Meng?

20 A That's the summary of the result for 214 -- no,
21 for 214 compound -- lanthanum -- for the
22 lanthanum-barium-copper-oxide which including 555, 113
23 and 214. Mainly, it's 214.

24 Q Okay. So, this is the work that was done
25 mainly in 1986 --

1 A Correct.

2 Q -- and in --

3 A Correct.

4 Q -- early 1987?

5 A Correct. Correct.

6 Q Okay. Going back to Exhibit No. 44.

7 A 44.

8 Q If you look at page H 431, that shows -- H

9 431 -- you got H 431?

10 A Sorry. Yes.

11 Q Okay. That shows a gadolinium --

12 A Correct.

13 Q -- barium copper oxide?

14 A Correct.

15 Q Okay.

16 A Yes.

17 Q And it's dated March the 15, 1987?

18 A Right.

19 Q And that is a complete substitution of

20 gadolinium for yttrium --

21 A Correct.

22 Q -- or lanthanum?

23 A Correct.

24 Q And this was done after the 123 structure was

25 identified?

1 A Correct.

2 Q All right. And one last --

3 MR. BEVERLY: Did you -- did you put this
4 one in, Les?

5 MR. HEWITT: I must have. I think so.
6 Let's see. If you'll look back here.

7 MR. BEVERLY: Yeah, it's right there --

8 MR. HEWITT: 4 -- 649, the first page?

9 MR. BEVERLY: No, number 537 through --

10 MR. PERRY: It's No. 35.

11 MR. BEVERLY: It's No. 35? Okay.

12 MR. PERRY: 35 is 537 through 592.

13 MR. BEVERLY: All right. I don't need
14 that one. We pass the witness.

15 MR. HEWITT: Let's take a short break.

16 THE VIDEOGRAPHER: The time is 3:31 p.m.
17 We're off the record.

18 (Recess from 3:31 to 3:39).

19 THE VIDEOGRAPHER: The time is 3:39 p.m.
20 we're back on the record.

21 FURTHER EXAMINATION

22 BY MR. HEWITT:

23 Q Okay, Mrs. Meng, I'm Lester Hewitt again. And
24 now I'm going to ask you some additional questions
25 principally based upon the various answers that you gave

1 to Mr. Beverly.

2 Would you locate Exhibit 34. This is your
3 second affidavit of 2006. This one is dated May 25,
4 2006.

5 A Yes.

6 Q Do you have it in front of you?

7 A Yes.

8 Q In paragraph 2, you state that Dr. Chu assured
9 you and Dr. Hor that you would be listed as co-inventors
10 on all applications for YBCO. Do you see that?

11 A Yes.

12 Q Did he give you that assurance in writing?

13 A No.

14 Q Did he make that as an oral promise to you?

15 A No.

16 Q Did he give you any kind of communication about
17 it?

18 A No.

19 Q Then how -- in what way did he assure you that
20 you would be listed as a co-inventor?

21 A There's only one time in a meeting with Charles
22 Cox and Charles Cox say, "Pei Hor is not can be
23 co-inventor." Dr. Chu immediately say, "No, no, no.
24 We're all together."

25 And most important thing is I thought we

1 the partner together. I'm Dr. Chu's colleague. I
2 worked all the way through to fight with Alabama, to do
3 all the materials, record it. And this patent basically
4 is the claim that find a high temperature superconductor
5 material and fabricate it and analyze identical -- the
6 optimal condition and analyze structure. That's what I
7 have done before, the whole thing. Of course, I am
8 co-inventor. That's what I think.

9 Q All right. Other than -- other than the
10 statement that you believe Dr. Chu made in the single
11 meeting with Mr. Cox --

12 A Yes.

13 Q -- Dr. Chu never said anything to you about
14 being an inventor; is that correct?

15 A Yes.

16 Q That's correct? All right.

17 Was it your understanding that you were
18 paid \$137,000 by the University of Houston because you
19 were a co-inventor?

20 A That's what I think.

21 Q Did Dr. Chu tell you that?

22 A No.

23 Q Did anyone tell you that?

24 A No.

25 Q Let me refer you to Exhibit 42, please.

1 MR. PERRY: It's going to be in that pile
2 right there, Ruling.

3 Q (By Mr. Hewitt) It's the declaration of Meng.

4 A Okay.

5 Q Do you have 42 in front of you?

6 A Yes.

7 Q First of all, do you see at the top the text
8 that's printed there that says, "Sent by Pravel,
9 Gambrel," at the very top of the document, first page of
10 Exhibit 42. Yeah -- no, very top. Even higher up.

11 A At the top?

12 Q Yes.

13 A What's that?

14 Q It says, "Sent by Pravel, Gambrel"; is that
15 correct?

16 A Yes.

17 Q Do you know who Pravel, Gambrel is?

18 A No.

19 Q Okay. The phone number on the right-hand side,
20 713-743-8201 --

21 A Yes.

22 Q -- do you know whose phone number that is or
23 fax number?

24 A I'm very familiar about this number. I just
25 couldn't remember.

1 Q Well, that's the fax number over in your lab,
2 isn't it?

3 MR. BEVERLY: Objection, form.

4 A I don't remember.

5 Q (By Mr. Hewitt) All right. Does it appear to
6 you, based upon the information at the top, that this
7 was a fax sent by Pravel, Gambrel to the university --
8 at least to the university on February 12, 1993?

9 MR. BEVERLY: Objection, form.

10 A I never look at this first line. I don't know
11 who is the -- the Pravel, Gambrel, who is this person.
12 Until today you point out I never read it.

13 Q (By Mr. Hewitt) All right. I'll represent to
14 you that Pravel, Gambrel is a law firm of which Mr. Cox
15 was a member.

16 A Okay.

17 MR. BEVERLY: Objection, form.

18 A Yes.

19 Q (By Mr. Hewitt) All right. And you found this
20 document or located the document in 2006; is that
21 correct?

22 A Correct.

23 Q And where did you find Exhibit 42 in 2006?

24 A In my drawer.

25 Q In what drawer?

1 A My lab. I have a drawer I put all the data and
2 all the measurement, things to -- together.

3 Q And you found this document in there?

4 A Yes.

5 Q Was it any -- in any particular file?

6 A No. I think randomly. I never see -- I never
7 looked at it for the past 20 years. I just know all the
8 things locked in my drawer.

9 Q And after you found Exhibit 42, did you give a
10 copy to Dr. Hor?

11 A I think I did. At least I show him. Did I
12 make a copy to him or not? I don't know.

13 Q All right.

14 A I do not recall if I give him a copy.

15 Q You don't recall if you gave him a copy?

16 A But I know I showed him.

17 Q All right. And he --

18 A Either he or me do the copy. I don't know.

19 Q And you, yourself, made a copy to keep,
20 correct?

21 A Yes. Before you asked me to return it.

22 Q Was it ever returned?

23 A Oh, I did return the whole thing to -- to UH.
24 This thing?

25 Q Yes.

1 A I returned it.

2 Q Actually, it's been produced to us in this case
3 by your lawyer. You see the number at the bottom, RLM
4 0090?

5 A Sir, I don't have the original. If I don't --
6 that's a copy. So, that's all I have.

7 Q So, you had a copy?

8 A Yes.

9 Q All right.

10 A If I don't have -- or if I do return to you,
11 that mean I don't have that.

12 Q But, in fact, there is a number here, RLM 0090,
13 and a copy was produced to us in this litigation. Do
14 you understand that?

15 A No. Who put this number? You put the number.

16 Q Your lawyer put that number on there.

17 A My lawyer? Charles Cox?

18 MR. BEVERLY: Objection, form.

19 MR. HEWITT: I'm sorry?

20 MR. PERRY: Ruling, these are the
21 documents that -- that you provided to me and we
22 produced to them.

23 A Oh, you -- do I --

24 MR. PERRY: I put that number on there.

25 THE WITNESS: But you also have -- this is

1 copy, not original.

2 MR. PERRY: I think that's right.

3 THE WITNESS: Yes.

4 Q (By Mr. Hewitt) One more question, Mrs. Meng,
5 as to the top line again. The phone number on the
6 right-hand side --

7 A Uh-huh.

8 Q -- 713-743-8201, that is a university exchange
9 number, correct?

10 A Correct. Oh, Gambrel is your law firm?

11 Q Do you know the name Gambrel?

12 A I don't remember. I never have any contact
13 with him.

14 Q Do you know whether or not the handwritten
15 notations such as found on page 2 of Exhibit 42 were on
16 the copy as faxed to the university?

17 A I don't understand the question.

18 Q Do you -- well, first of all, on page 2 --

19 A Yes.

20 Q -- isn't it true that there are several
21 handwritten notes in the handwriting of Dr. Chu?

22 A Yes. Correct.

23 Q Do you know whether or not this fax copy was
24 sent to you with those handwritten notes on it?

25 A I don't remember.

1 Q If you would look at Exhibit 40, please.

2 A 40?

3 Q Yes. This is the e-mails that were put into
4 evidence.

5 A Yes.

6 Q And turn to the third page. This is the e-mail
7 to Dr. Chu from you dated February 15, 2006?

8 A Yes.

9 Q And the last two sentences --

10 A Yes.

11 Q -- says, quote, "He said that you are willing
12 and prepared to compensate me as recognition for my
13 contribution to the H2S invention," period," he asked me
14 to contact you," period, end quote.

15 Those two sentences were part of an e-mail
16 you sent to Dr. Chu?

17 A Correct.

18 Q Did you understand from Mr. -- from
19 Dr. Jacobson that Dr. Chu was prepared to compensate you
20 because you were an inventor or -- or for other reasons?

21 A I understand that should be -- he should give
22 me recognition for my contribution.

23 Q And by compensation, were you referring to
24 recognition?

25 A No. Should be -- give me the co-inventor. But

1 maybe he won't give me compensation but that -- I would
2 not take it.

3 Q Well, was an offer ever made to you by Dr. Chu?

4 A No, never. I never contact him.

5 Q Did you have any understanding from
6 Dr. Jacobson that Dr. Chu was willing to compensate you
7 but not Dr. Hor?

8 A That's the way I understand.

9 Q Did Dr. Jacobson explain why?

10 A No.

11 Q Did you ask?

12 A I asked him -- I didn't -- he didn't answer
13 me.

14 Q Let me ask you to get Exhibit 39, please. Do
15 you have it front of you?

16 A Yes.

17 Q Do you recall -- this document like the other
18 one, the other declaration, was produced by your
19 attorney. Did you obtain Exhibit 39 from your files at
20 the University of Houston?

21 A I believe must be Dr. Chu put in my drawer. UH
22 never formally give me something. You mean where I got
23 this one from?

24 Q Well, I'm asking you physically where you got
25 it from. Not how it got there, just where you got it.

1 A I don't remember.

2 Q Well, it was in your files, correct?

3 A Yes, yes.

4 Q All right.

5 A In my drawer, yes.

6 Q And did you show this document to Dr. Hor?

7 A I believe so.

8 Q And did you make a copy of this and take it
9 with you when you left the university?

10 MR. BEVERLY: Objection, form.

11 A No. In fact, I printed -- I make a copy before
12 I returned all the documents to the school.

13 Q (By Mr. Hewitt) And you kept that copy?

14 A My lawyer have that. I don't have that.

15 Q You kept a copy and gave it to your lawyer?

16 A Yes.

17 Q Now, there is a handwriting you couldn't
18 identify on page 2 of Exhibit 39; is that correct?

19 A Yes, I cannot.

20 Q Do you have any recollection of meeting in
21 person with Mr. Cox about the declaration of Exhibit 39?

22 A I don't remember.

23 Q Is it possible that the handwriting on the
24 second page is the handwriting of Dr. -- of Mr. Cox?

25 MR. BEVERLY: Objection, form.

1 A I don't know. I didn't remember his
2 handwriting. I never see his handwriting -- oh, he have
3 the note. Oh -- oh.

4 Q (By Mr. Hewitt) I've placed in front of you
5 Exhibit 5 from Dr. Hor's deposition. This is a letter
6 on University of Houston letter -- letterhead from Scott
7 Chaffin to Dr. Richard Van Horn.

8 A Uh-huh.

9 Q The date is December 22, 1988.

10 A Uh-huh.

11 Q Have you seen this document before?

12 A No.

13 Q If you'll turn to the second page.

14 A Yes.

15 Q Do you see the name -- the column for name and
16 the other column for amount?

17 A Yes.

18 Q And you see you are the -- listed as the second
19 person and it shows an amount of \$137,000?

20 A Yes.

21 Q Is that what was paid by Dr. Chu to you?

22 MR. BEVERLY: Objection, form.

23 A From UH.

24 Q (By Mr. Hewitt) Do you know whether that money
25 came from UH or Dr. Chu?

1 A From UH.

2 Q Do you know whose decision it was to pay you
3 that money?

4 A I guess Dr. Chu.

5 Q Now, you also see that Mr. -- Dr. Wu was also
6 awarded \$137,000?

7 A Yes.

8 Q And then you see a listing of others, from Li
9 Gao on down, of various amounts from about 7,000 to
10 \$450. You see that?

11 A Yes.

12 MR. PERRY: Ms. Meng, don't speculate
13 about your answers. If you don't know the answer to the
14 question, tell him you don't know.

15 A I didn't see that before.

16 Q (By Mr. Hewitt) Didn't see what?

17 A This -- this table.

18 Q I understand. I'm just asking you --

19 A Right now --

20 Q -- right now if you recognize it.

21 A Right now I see it.

22 Q All right. Do you recognize that the names
23 from Li Gao on down include people who worked in the lab
24 under your supervision?

25 A Yes.

1 Q All right. And you had earlier said that --
2 you earlier gave a definition to what a pair of hands
3 was. Do you remember that?

4 A Yes.

5 Q What was that definition?

6 MR. BEVERLY: Objection, form.

7 A I think a pairs of hand is just like a tool,
8 like the X-ray machine, screwdriver. You ask them to
9 use a screwdriver to open something. That's a pair of
10 hands.

11 Q (By Mr. Hewitt) With respect to Li Gao, for
12 example, was Li Gao a pair of hands to you?

13 A I don't think so.

14 MR. BEVERLY: Objection, form.

15 A I don't think so. They are graduate student.

16 Q (By Mr. Hewitt) Should he be an inventor also?

17 A I don't know. That's not my judgment.

18 Q But he was not a pair of hands, in your
19 opinion?

20 A I think all the people working in the lab are
21 not considered a pair of hands.

22 Q In your opinion?

23 A That's my opinion.

24 Q All right. And how about Dr. Wu? Was he a
25 pair of hands?

1 A Mau Kwen Wu?

2 Q Yes.

3 A He's a professor.

4 Q I understand that. Based -- but he was told,
5 according to your testimony, by Dr. Hor that yttrium
6 should be substituted for lanthanum, correct?

7 A Correct.

8 Q And he also understood at that time that the
9 regimen was to make substitutions in a nominal 214
10 composition, correct?

11 MR. BEVERLY: Objection, form.

12 A Correct.

13 Q (By Mr. Hewitt) And you told -- you told Dr. Wu
14 to get yttrium from some source near the University of
15 Alabama and -- and go make samples using yttrium; didn't
16 you?

17 A I suggested he get it from NASA --

18 Q All right.

19 A -- Alabama, correct.

20 Q And you told Dr. -- Dr. Wu to get the yttrium
21 oxide from that source and to make samples, correct?

22 A Correct.

23 Q And Dr. Wu already understood the samples were
24 to be made to a 214 nominal formula, correct?

25 A Correct.

1 Q And Dr. Wu also understood that he was using
2 the solid state reaction method, correct?

3 A Correct.

4 Q So, was Dr. Wu a pair of hands, in your
5 deposi -- in your definition or not?

6 A No.

7 Q He was not?

8 A Making a sample preparation is not just simple.
9 It's a kind of -- very complicated procedure. You do
10 have different parameters, different composition you
11 have to try it to do it. You have to understand to
12 share this point so you can do it.

13 THE COURT REPORTER: Make sure there's
14 what?

15 A Share the point, you agree that this thing will
16 work and you're willing to try it and how to do it, you
17 have to think about it. That is not a pair of hands.
18 And he did actually produce the first high Tc yttrium
19 barium copper oxide.

20 Q (By Mr. Hewitt) All right.

21 A So, the person who fabricate it, that's simple.
22 How can you call it a pair of hands? He's not.

23 Q All right. So, under your definition, everyone
24 from M. K. Wu on down was not a pair of hands?

25 MR. BEVERLY: Objection, form.

1 Q (By Mr. Hewitt) Right?

2 A I don't know. I don't know.

3 Q Well -- but under your definition you just gave
4 me, they're not screwing a screw into something.

5 A That's what I think. I think it's not fair to
6 call anyone work in the lab as one pair of hand.

7 Q All right.

8 A That's insulting for them.

9 Q It's been your testimony that the first time
10 you heard of the -- a suggestion to substitute yttrium
11 for lanthanum was made by Dr. Hor in the meeting that
12 you attended, correct?

13 A Sorry.

14 Q Yeah.

15 A Say it again.

16 Q You have testified that the first time you
17 heard the suggestion of a substitution for -- of yttrium
18 for lanthanum was in the meeting in late December or --
19 1986 or early January 1987, correct?

20 A Correct.

21 Q And you have further testified that you never
22 heard or received a telephone call from Dr. Chu making
23 the same suggestion to substitute yttrium prior to that
24 meeting, correct?

25 A Correct.

1 Q So, according to your recollection today, the
2 first person to come up with the idea of the
3 substitution for yttrium was Dr. Hor in that meeting?

4 A Correct.

5 Q And you made the suggestion to substitute
6 lutetium?

7 A Yes. Correct.

8 Q And Dr. Hor did not make that -- did not
9 provide that idea, correct?

10 A No.

11 Q Are you aware that Dr. Hor has testified that
12 he doesn't recall that you made that suggestion?

13 A I don't know. Possibly. Because he may not
14 remember.

15 Q It's difficult to remember things so long ago,
16 isn't it?

17 A That's -- that's right.

18 Q Yes. After Pei Hor made this suggestion at the
19 meeting, did you ever tell Dr. Chu of that suggestion?

20 A I don't think so.

21 Q Did Dr. Chu ever speak to you about yttrium on
22 any other occasion -- or -- let me strike that.

23 As I understand your testimony, then,
24 Dr. Chu never spoke to you about yttrium; is that
25 correct?

1 A Before that.

2 Q Before when?

3 A Before this meeting.

4 Q Did he ever discuss yttrium with you?

5 A I don't -- I don't remember he have talked to
6 me anything about it.

7 Q In early January, do you recall that Dr. Chu
8 said that he was working on a patent?

9 A Yes.

10 Q Do you know what Dr. Chu was doing to work on
11 the patent?

12 A I don't know what he's doing.

13 Q Did you -- did he ask you for any
14 information --

15 A No.

16 Q -- regarding the patent?

17 A No.

18 Q Did you provide him any lab data during the
19 time or -- let me re-ask the question.

20 As far as you know, did you provide him
21 any lab notebook data or other data regarding
22 preparation for a patent?

23 A I cannot remember. I just know most of the
24 data was Charles Cox asked me for.

25 Q But that was much later in time, correct? I'm

1 now asking you about early January 1987.

2 A I don't -- I don't remember. But Dr. Chu did
3 have our -- my report to him from time to time about the
4 result of the experiments.

5 Q And those reports were by telephone?

6 A No. He come back on weekends.

7 Q And at times he would review the data with you?

8 A I remember he did. He reviewed the data,
9 analyzed the data.

10 Q Do you ever recall him copying any of that data
11 or making copies of it?

12 A I don't know he copy it or not, but he do
13 review the data, analyze the data.

14 Q Is it possible that Dr. Chu thought of the idea
15 of substituting yttrium and lutetium for lanthanum prior
16 to the meeting with -- your meeting and Dr. Hor's
17 meeting with Dr. Wu?

18 A That I don't know. Maybe he have, but he never
19 talked to me prior to meeting. So I cannot say. No, I
20 don't know.

21 Q Dr. Chu suggested to use strontium and calcium,
22 didn't he?

23 A Yes.

24 Q And -- so, it was clear that Dr. Chu was
25 thinking about substitutions at that time --

1 A Yes.

2 Q -- correct?

3 MR. BEVERLY: Objection, form.

4 A Yes.

5 Q (By Mr. Hewitt) And Dr. Chu had already given
6 you instructions -- after he learned from Kitazawa about
7 the 214 phase, he had given you instructions to use the
8 nominal 214 formula in the further development work --

9 A Correct.

10 Q -- is that correct?

11 A Correct.

12 Q So, at that time you stopped with the nominal
13 formulas for Bednorz and Müller of 555 and 113; is that
14 correct?

15 A Yes.

16 Q So, following Dr. Chu's instructions, then you
17 set out to substitute strontium and calcium in a nominal
18 214 formula, correct?

19 A Yes.

20 Q And it's highly possible, then, that since
21 Dr. Chu was already thinking of substitutions, that he
22 would think of the next step in substitutions after
23 thinking of strontium and calcium; isn't it?

24 MR. BEVERLY: Objection, form.

25 MR. PERRY: Objection, form.

1 Q (By Mr. Hewitt) Isn't that possible?

2 MR. BEVERLY: Same objection.

3 A Possible if you think about it that way.

4 Q (By Mr. Hewitt) Well, you've known Dr. Chu --
5 even at that time, in 1987, you had known Dr. Chu for a
6 number of years, hadn't you?

7 A Correct.

8 Q And over that period, Dr. Chu was always trying
9 to think about new compounds, wasn't he?

10 MR. PERRY: Objection, form.

11 A That's correct.

12 Q (By Mr. Hewitt) And part of Dr. Chu's strategy,
13 after the application of physical pressure to increase
14 superconductivity, was to make substitutions, correct?

15 MR. PERRY: Objection, form.

16 A Correct.

17 Q (By Mr. Hewitt) That was a strategy and
18 procedure developed by Dr. Chu even before you started
19 on the work of Bednorz and Müller; is that correct?

20 A Yes.

21 Q Do you know whether or not Dr. Hor ever told
22 Dr. Chu that he was working on yttrium?

23 A I don't recall that.

24 Q Other than the one sample made by Dr. Hor in
25 November, what contributions did Dr. Hor make, in your

1 opinion, to -- in terms of substitutions in the
2 development of the high temperature superconductivity?

3 A I think he is -- at that time he is a
4 coordinator.

5 Q He's what?

6 A He was -- Dr. Chu was not there, so I think
7 he's responsible taking care of running of the lab,
8 so -- which including measurements, analyze the data.
9 And I think that's a lot of the work he's doing.
10 Basic -- basically take care of the physical property,
11 measurement, things analyze, all kind of things.

12 Q And he -- he was reviewing the work or
13 supervising the work of students?

14 A I think for the students, yes, he was helping
15 them.

16 Q Were -- were you responsible for the students
17 in giving them assignments or were both you and Dr. Hor
18 responsible?

19 A I only responsible for the student I hire, not
20 the graduate -- not the physics graduate students, no.

21 Q Who was responsible for them?

22 A I think Dr. Chu at that time or Dr. Hor.

23 Q Did you come to learn at some point that
24 Dr. Hor had the title Alternate Principal Investigator?

25 A At that time I don't. I do not pay attention

1 about that. Dr. Chu never told me that.

2 Q Do you have a recollection of when the lab
3 notebook of Exhibit 37 was given the H numbers that are
4 shown on it, H 1 through 204?

5 A Say it again.

6 Q Yes. Do you recall when these H numbers were
7 stamped onto this --

8 A I don't know.

9 Q -- notebook? Do you know who did it?

10 A Must be lawyer from --

11 Q Do you personally know or not know?

12 A I don't.

13 Q And regarding the lab notebook itself, have you
14 reviewed the lab notebook of Exhibit 37 over the course
15 of this dispute? Have you had a chance to look at it
16 carefully?

17 A Which one?

18 Q Exhibit 37.

19 A That's my book?

20 Q That's your big notebook, right.

21 A What do you mean? You want me -- what's the
22 question?

23 Q Have you had a chance to review Exhibit 37
24 carefully since this dispute began in 2006?

25 A No.

1 Q Have you reviewed it at all?

2 A No. First of all, there's a lot.

3 Q It's big.

4 A And I'm very busy. We are really busy. And I
5 don't know what's the point to review them. I don't
6 know they're so important for this case. But I remember
7 that's for patent application, I should keep them. And
8 I never reviewed it.

9 Q Well, you have had some pages shown to you by
10 Mr. Beverly and I during the course of this deposition,
11 correct?

12 A Yes.

13 Q During the preparation for deposition, did
14 Mr. Perry show you any of the pages?

15 MR. BEVERLY: Objection, form.

16 A He did not show me anything particularly.
17 Because we didn't really pay attention to page by page
18 and read it.

19 Q (By Mr. Hewitt) Have you found -- understand --

20 A By the way, I got to correct something. Gordon
21 and I have been really go through that before. Because
22 in order to prepare our presentation --

23 MR. PERRY: Ruling, you can -- you can say
24 that you've looked at the documents with him together
25 but don't disclose any of the -- what you -- what you

1 discussed with Gordon.

2 THE WITNESS: Say it again.

3 MR. PERRY: You can say that you looked at
4 the documents together but don't disclose the
5 discussions that you had with -- with Gordon about the
6 documents. Those are protected by the attorney-client
7 privilege.

8 A Okay. Okay. I -- the purpose I read this one
9 is because we have to prepare the presentation. As my
10 understand the patent law, they said look at the '8 --
11 '866, they have claim for ten points or something.

12 THE COURT REPORTER: Ten points --

13 A Ten point conclusion, claim. They say --

14 Q (By Mr. Hewitt) Oh, I'm sorry. You're saying
15 the claims --

16 A Claim.

17 Q -- of the patent. All right.

18 A Anyone has a contribution to one of them or two
19 of them, three of them, they are qualified as
20 co-inventor. For that reason, I go through that book,
21 find out my data was used by them. That means my
22 contribution is there. So I read through that so I have
23 to correct -- I didn't read it but it's not that
24 careful. Like something -- it's not important I don't
25 read it. I only look at the one I needed.

1 Q With respect to the material that you have
2 reviewed in the -- the pages H 1 through 204 of Exhibit
3 No. 37 in the last several years, have you found
4 anything that appears to be fraudulent, any -- any pages
5 that appear to have been inconsistent, dated wrong,
6 dates changed, anything at all that you would think to
7 be that had changed from what you believe was in the
8 original notebook?

9 MR. BEVERLY: Objection, form.

10 MR. PERRY: Objection, form.

11 A I myself did not discover. But later on,
12 someone point me out be in that meeting. That is
13 something strange to me. But I always have the question
14 mark, how can the data so important 200 pages was
15 missing.

16 Q (By Mr. Hewitt) I -- I know.

17 A That's my question. So -- but I -- I have no
18 evidence anything happen. I cannot say it.

19 Q All right. So far as you know, then,
20 Exhibit 37 is a accurate and complete copy of the
21 original 204 pages of the notebook; is that correct?

22 A I did not say that. I did not -- I did not say
23 that that's accurate completely. I don't know.

24 Q I understand. I -- I'm asking the question,
25 though: Since you don't know of anything that has been

1 changed, is it fair to -- to say that as far as you know
2 today, this Exhibit 37 is a true and correct copy?

3 MR. BEVERLY: Objection, form.

4 MR. PERRY: Object to the form.

5 Q (By Mr. Hewitt) As far as you know. That's the
6 question.

7 MR. BEVERLY: Same objection.

8 MR. PERRY: Same objection.

9 A If I have question, because if you find my 200
10 pages original so I can say yes. But if you don't have
11 that, I have question. How can I answer your question?
12 Do you understand my point?

13 Q (By Mr. Hewitt) I -- I do.

14 A Because I still have problem -- but I don't
15 have evidence something change. I don't know.

16 Q Have you seen any evidence that anything was
17 doctored or changed or forged in this copy, Exhibit 137?

18 MR. PERRY: Objection, form.

19 Q (By Mr. Hewitt) Excuse me. Exhibit 37.

20 A From the copy I cannot tell. The true answer
21 have to be based on the original data.

22 Q Have you ever discussed your claim or Dr. Hor's
23 claim of inventorship with Li Gao?

24 A I beg your pardon?

25 Q Have you ever discussed your claim of

1 inventorship or Dr. Hor's claim of inventorship with Li
2 Gao?

3 A Never.

4 Q Have you talked to him in any way about the
5 issues in this case?

6 A No.

7 Q Have you tried to contact him?

8 A No.

9 Q Going back to the meeting again between you and
10 Dr. Hor and Dr. Wu, with Li Gao standing in the doorway,
11 do you recollect which of you and Dr. Hor was first to
12 suggest the elements you suggested; that is, did you
13 suggest lutetium before Dr. Hor suggested yttrium?

14 A No.

15 Q Did you suggest lutetium after Dr. Hor
16 suggested yttrium?

17 A Correct.

18 Q What -- what does pair breaking mean to you,
19 the term pair breaking?

20 A Well, it's --

21 MR. BEVERLY: Objection, form.

22 A It's my understanding how the superconductor --
23 how the superconductor can carry the electricity
24 without -- without resistance. Because the electron in
25 the inside the conductor, they form the pair. Okay?

1 Let me give you a very sample -- just like
2 a big hall of many people dancing there. They hit each
3 other randomly so, therefore, they generate a lot of
4 resistance from each other, generate heat.

5 But when the material turn into super --
6 superconductivity stage, all the electrons inside form
7 the pair. Just like the people dancing form the pair
8 and they flow in one direction. So, it turns out
9 there's no resistance. That's so-called pair.

10 I think this is based on BCS series, was
11 early time for the low temperature superconductor. But
12 it's my understanding for the high temperature
13 superconductor, there's still a lot debate about what
14 model can be used. I don't -- I have no comment because
15 I'm not a physicist.

16 Q Would you pull out Exhibit 37, the notebook,
17 for me, please.

18 A What page?

19 Q H 131. And referring to the very top formula
20 there, the YGB 401. Are you with me?

21 A Yes.

22 Q And I understand this is Dr. Wang's writing and
23 not your own?

24 A Correct.

25 Q But you see the formula there of $Y_{0.99}$?

1 A Correct.

2 Q -- and GD 0.01?

3 A Correct.

4 Q And taken together with barium, with the
5 subscript 2 and the copper 1 and the oxygen 4, that's a
6 214 formula, correct?

7 A Correct.

8 Q And the amount of gadolinium is 0.01 compared
9 to 0.99 yttrium, correct?

10 A Correct.

11 Q Have you ever heard the term "partial doping"
12 before?

13 A Yes.

14 Q Would it be fair to say that in this formula as
15 shown, that formula represents partial doping with
16 gadolinium?

17 A Yes.

18 Q What is the benefit of attempting partial
19 doping such as shown here with gadolinium?

20 MR. BEVERLY: Objection, form.

21 A I think the benefit should be from both sides.
22 Some kind of partial -- partial substitutes, they may
23 want to test them to understand some physics phenomenon
24 to see how effect of this partial substitution. And the
25 second purpose is in my result and better result --

1 Q In what? I'm sorry.

2 A In my transient better result or either raise
3 the transition temperature or other purpose, mostly the
4 substitution is two -- two direction. One, it just
5 purely so one understands the physics phenomenon, why,
6 what's the point. Secondly, of course, we want to
7 continue improve the material and raise the transition
8 temperature.

9 Q If -- in the Y without gadolinium in 214 was a
10 superconductor --

11 A Correct.

12 Q -- and now the Y with 01 gadolinium was not a
13 superconductor, would that have told you something?

14 MR. BEVERLY: Objection, form.

15 A Possibly.

16 Q (By Mr. Hewitt) What would it have told you?

17 A Gadolinium is not good -- they might call --
18 so-called pair breaking because gadolinium have magnetic
19 moment. I don't know. It's -- possibly.

20 Q And if the Y with gadolinium in the formula
21 here at the top of H 131 of Exhibit 37 still produces a
22 high temperature superconductor, what would that tell
23 you?

24 MR. BEVERLY: Objection, form.

25 A Well, this kind of substitution, number 1, is

1 very difficult to make because the material have to be
2 well grounded, mixed together. Sometimes it's not real
3 phenomenon to represent this sample because if they're
4 not very uniform, the property they present not
5 necessary you substitute. So that's No. 1.

6 So, No. 2, in this case, it doesn't say
7 anything. It doesn't mean anything to you. That means,
8 for example, with gadolinium just high in some of the
9 corner. It's not --

10 THE COURT REPORTER: It's high in what?

11 A In the corner. Do not form in the crystal.
12 Understand what I mean? There can be very minor
13 impurity phase there. So the result doesn't really
14 represent the doping effect.

15 So, the doping effect sometime have to
16 very carefully analyze it. For me -- but for the
17 lanthanum 214, the barium, the substitution is 0.15 to
18 0.25 optimal substitution and then turns into
19 superconducting. Lanthanum-barium-copper-oxide, it
20 makes sense. Right?

21 But this one, for my considered 0.05 is
22 really very, very low and I don't remember the result.
23 This real -- can be real representative of the property
24 of the material, can be de -- if they do not have
25 effect, you cannot come to conclusion. So, no, that's

1 no effect. Because you have to do it -- very carefully
2 analyze. Look at SEM.

3 You see today barium, today in yttrium
4 crystal -- 214 crystal or not, if they don't. Or they
5 are just alone by itself as an element do not form the
6 crystal so we cannot see it.

7 Q (By Mr. Hewitt) If you look at the second
8 formula there, that's number 402?

9 A Yes.

10 Q There the partial doping was gadolinium, 0.05?

11 A Yes.

12 MR. BEVERLY: Objection, form.

13 MR. HEWITT: What -- what's wrong with
14 that question, counsel?

15 MR. BEVERLY: I think it's formula YGB
16 402, correct?

17 MR. HEWITT: Yes.

18 MR. BEVERLY: Okay.

19 Q (By Mr. Hewitt) Regarding formula YGB 402, the
20 partial doping here is gadolinium of 0.05, correct?

21 A Yes.

22 Q And that 0.05 then is multiplied times 0.6
23 correct?

24 A Yes. 0.12.

25 Q And then the entire formula is multiplied times

1 the subscript 2, correct?

2 A Correct.

3 Q Now, within that formula --

4 A Yes.

5 Q -- if that formula was also superconducting --

6 A Yes.

7 Q -- as well as formula YGB 401 above, if both of
8 those were, would that tell you anything?

9 A If -- if in this case I would get this
10 gadolinium doping, if the transition temperature the
11 same, also superconducting, and also low SEM, they are
12 really form in this crystal 214, so that mean doesn't
13 have much effect.

14 Q And do you know whether or not gadolinium is
15 magnetic or not?

16 A Gadolinium element itself is magnetic moment.

17 Q Isn't it true that the addition of a magnetic
18 element to a superconducting composition generally
19 destroys the superconductivity?

20 A Yes, generally. But not all of them.

21 Q And if in this case gadolinium did not destroy
22 the superconductivity, would that tell you anything
23 about the role of gadolinium?

24 MR. BEVERLY: Objection, form.

25 A Yes.

1 Q (By Mr. Hewitt) What would it tell you?

2 A That gadolinium would not kill the yttrium.
3 But I do not remember I have this sample making the
4 result.

5 Q I'm sorry?

6 A I do not remember we make this sample and the
7 result. I do not remember this one. If you look at
8 my -- my summary, I don't see this result.

9 Q Let me ask you to turn to Exhibit 44. All
10 right. Do you have Exhibit 44 in front of you?

11 A Yes.

12 Q Turn, please, to H 431.

13 A 431?

14 Q Yes.

15 A Yes.

16 Q Now, if you turn -- read down the left-hand
17 column, you'll see a reference to two sample numbers,
18 401 and 402. Do you see that?

19 A Yes.

20 Q And then on the right side under Tc for 401, it
21 says 75 and for 402, it says 88. Do you see that?

22 A Yes.

23 Q And then to the right of that, you see the two
24 formulas for 401 for the 0.01 gadolinium --

25 A Right.

1 Q -- and for 402 for the 0.05 gadolinium?

2 A Correct.

3 Q And --

4 A Which we make on March 15, not February.

5 Q Well, disregarding the date for a moment --

6 A Yes.

7 Q -- with respect to these two compounds --

8 A Yes.

9 Q -- would that indicate to you that the
10 gadolinium had no effect on the superconductivity?

11 A Yes. But substitution, sometimes if you look
12 at this data, I have to say that exactly superconducting
13 transition become lower. It should be 90. But it's 75
14 or 88. And zero is 55. That's pretty low. But that is
15 not necessary because of substitution. Might be I
16 didn't optimize the condition. It's hard to say. Do
17 you understand me?

18 Q Uh-huh.

19 A Because the transition you compare with other.
20 They're all 90 degrees. But this too is 75 and zero
21 transition 55, the other 88 -- 58. So, it's possible
22 effect. That's one thing. And the other possible I
23 didn't optimize the condition. I cannot say it right
24 now.

25 Q And were you able -- looking at this data --

1 A Yes.

2 Q -- are you able to draw any conclusion as to,
3 then, the effect of the addition of the magnetic element
4 gadolinium on YBCO superconductor?

5 MR. BEVERLY: Objection, form.

6 A If the pure gadolinium is superconducting, so I
7 don't know why it's possible substitution would affect
8 the superconducting property.

9 Q (By Mr. Hewitt) Did you have any understanding
10 that the partial substitutions for gadolinium using the
11 formula 214 were done prior to learning that the black
12 phase was 123?

13 A I don't remember.

14 Q But you do see that the formulas are --

15 A That's the 214, correct?

16 Q Nominal 214 formulas, yes.

17 A Correct.

18 Q You made the statement earlier that you were
19 thinking that you must be an inventor because the
20 university asked you to sign some declarations regarding
21 the interferences. Do you recall that statement?

22 A Yes, I say so.

23 Q So, is it true, then, that at the time you were
24 reviewing and signing the declarations, that you at that
25 time thought you were an inventor because --

1 A Co-inventor.

2 Q -- you were asked -- or co-inventor because you
3 were asked to sign the declarations?

4 A I never think about that question at that time.
5 I think I should. That's it.

6 Q But at that time, you did not think about that?

7 A I never think about I'm not. So, you asked me
8 the question for what am I thinking at that time. I
9 cannot answer you. Because when I doing all the thing,
10 I always think our patent, so I'm one of the
11 co-inventors. So I don't -- I don't remember why would
12 I think about that at that time.

13 Q Was being a co-inventor important to you?

14 A Yes.

15 Q Was it important to you at the time you signed
16 these declarations?

17 A What do you mean at that time is important?

18 Q In other words, as of the dates, 19 -- between
19 1988 and 1993, you thought you were a co-inventor,
20 correct?

21 A Correct.

22 Q Was that important to you, to be a co inventor?

23 A Yeah.

24 Q Did you ever ask Mr. Cox --

25 A No.

1 Q -- or anyone --

2 A No.

3 Q -- if you were a co-inventor?

4 A I never thought about it. Why should I ask?

5 Q You never thought about asking?

6 A No.

7 Q You were -- you were satisfied to assume you
8 were a co-inventor?

9 A Correct.

10 Q And the reason you assumed you were a
11 co-inventor was because you were paid \$137,000?

12 A One of the reasons --

13 MR. PERRY: Objection, form.

14 A One of the reason, not all the reasons.

15 Q (By Mr. Hewitt) And another reason was because
16 you were in charge of the lab and making the materials?

17 A Nothing to do with my charge of the lab. But I
18 have contribution to the patent.

19 Q That's what you thought, correct?

20 A Yes.

21 Q Did Dr. Hor actually work in the same lab that
22 you did?

23 A No. I -- mainly I'm working with the materials
24 preparation lab, but not low temperature lab, physics
25 lab. He's in the -- in the other lab.

1 Q Well, back -- I'm sorry. Back in this time
2 period, 1986 and 1987 --

3 A Yes, we are two labs.

4 Q There were two labs then?

5 A But together, just very close.

6 Q Well, was there a wall separating them?

7 A Oh, yeah.

8 Q Okay. So, there were two different rooms?

9 A Yes.

10 Q And Dr. Hor worked in one room?

11 A Yes.

12 Q And you worked in the other?

13 A Yes.

14 Q From day to day, did you keep up with Dr. Hor,
15 his presence in the building and in his lab?

16 A Oh, we -- we see -- see each other quite often,
17 just across the hall and just walk over there.

18 Q What was Dr. Hor doing in his lab? Was that a
19 physics lab?

20 A Low temperature physics lab.

21 Q And were the physics students in his lab?

22 A Yes.

23 Q I see. And the material scientist students
24 were in your lab?

25 A Yes.

1 Q You mentioned earlier that Dr. Chu rarely got
2 angry; is that correct?

3 A Yes. He's -- no, not -- not very often.

4 Q All right. And then I believe you said
5 something to the effect that the two of you, however,
6 would get mad at each other?

7 A Sometime.

8 Q And what would be the reasons that the two of
9 you would get mad at each other?

10 A We argue about some of the experiments, which
11 happened later, not at that time. And at that time I'm
12 very -- how can I say -- I always very nice. I never
13 want to argue with him. And we don't never argue.
14 Which we talk later on. We got to know each other quite
15 well. We do a lot of work together. And sometime we
16 have different opinions so we are going to argue
17 sometime. Mainly it's about experiment thing, never --
18 before 1992, we never argue.

19 Q And when you did argue after -- from 1992 on,
20 how were the arguments resolved?

21 A Well, if the second day I recognize I'm wrong,
22 I will go to apologize to him, say, "Dr. Chu, I'm wrong.
23 I'm wrong yesterday." But if he not -- he's wrong, he
24 will come to my office and tell me, "Ruling, I'm wrong
25 yesterday."

1 Q Back in the time period of 1986 and 1987, did
2 you consider Dr. Chu to be a fair leader of the
3 superconductivity lab?

4 A Yes.

5 Q Do you believe he treated everyone fairly?

6 A Yes.

7 Q Did Dr. Chu exercise good manners in his
8 communications with you?

9 A I think so, yes.

10 Q And did he exercise good manners in his
11 communications with Dr. Hor and the students?

12 A I guess so.

13 Q Was he approachable?

14 A Yes. He talked to them very often. He talked
15 to students. He talked to Pei.

16 Q If somebody had a problem -- for example, if a
17 student had a problem, would the student be able to
18 approach Dr. Chu and talk with him about it?

19 A At that time he's in Washington D.C., right?

20 Q I understand. But let's say prior to going to
21 Washington, D.C.

22 A Yes.

23 Q Okay. Was Dr. Chu popular with the students?

24 A I beg your pardon?

25 Q Was Dr. Chu popular with the students?

1 MR. BEVERLY: Objection, form.

2 A I think so. I think so. He's very nice with
3 his students.

4 MR. PERRY: Are we almost done?

5 MR. HEWITT: Yeah, we're getting close.

6 Q (By Mr. Hewitt) Do you have the Pei Hor
7 exhibits still over there? Pei Hor exhibits?

8 A This one?

9 Q Yeah. Would you turn to Exhibit 17, period --
10 please.

11 A Yes.

12 Q Prior to -- are you with me? I -- what I see
13 on Exhibit 17 is an order for four rare earth oxides --

14 A Correct.

15 Q -- dated January 12, 1987; is that correct?

16 A Correct.

17 Q Prior to the Bednorz and Müller work that was
18 begun by you and Dr. Chu and others in about
19 November 1986 --

20 A Yes.

21 Q -- had Dr. Chu done any experimentation
22 utilizing rare earth oxides?

23 A I don't recall. We use a rare earth metal.

24 Q You've used a rare earth metal, but did you
25 ever use rare earth oxides?

1 A I don't remember we have. We have a lot of
2 metal -- rare earth metal.

3 Q But in doing the experiments here, proving out
4 Bednorz and Müller and taking it beyond that, you needed
5 rare earths oxides, didn't you?

6 A Correct.

7 Q And if I recall your testimony before, the idea
8 for ordering the rare earth oxides was entirely your
9 own?

10 A Yes.

11 Q And the reason you ordered them was what? Why
12 did you order them?

13 A Because we realize that we have to explore to
14 more rare earth oxide --

15 THE COURT REPORTER: Have to what?

16 A -- we should explore the --

17 MR. PERRY: Explore --

18 A -- explore to see the properties of other rare
19 earth, is that superconducting or not.

20 Q (By Mr. Hewitt) And was that a decision that
21 you made, that is, that other rare earth oxides --
22 oxides needed to be explored?

23 A I think that's very natural for me to think
24 about that. Because after we got gadolinium work, of
25 course, we were talking about europium, the other thing.

1 Q Do you have a recollection today of actually
2 having the idea yourself that you needed to explore the
3 rare earth oxide -- oxides?

4 A No, I -- I don't.

5 Q All right. Would you turn to -- let's see --
6 Exhibit 31. I think that must be -- is that Hor -- I
7 can't -- I don't -- I can't tell whose is it.

8 A 31.

9 Q Yes, 31. Yeah, that must be one of yours.

10 MR. PERRY: Exhibit 31, it's in the big
11 book right there, right in front of you.

12 A 31. Yes.

13 Q (By Mr. Hewitt) Do you have Exhibit 31 in front
14 of you?

15 A Yes.

16 Q If you'll turn to the second page, I just have
17 a quick question.

18 A Okay. Second page? There's no second page.
19 There's only one page.

20 MR. PERRY: That's the second page.

21 A Okay.

22 Q (By Mr. Hewitt) All right. You see that on
23 page H 1340, you see a date at the top of February 24,
24 1987?

25 A What day? I didn't see it.

1 Q Very top right corner.

2 MR. PERRY: Right here.

3 A No. No. Date on the top. We didn't see it
4 stapled together. What -- what's your question?

5 Q (By Mr. Hewitt) Do you see that this is a
6 resistivity curve for sample numbers 401 and 402?

7 A Correct.

8 Q And you see the date of February 24, 1987?

9 A I do not see it from here.

10 MR. PERRY: The date is not visible on
11 either of the copies that we have.

12 MR. HEWITT: We've got to get a substitute
13 copy because the date is actually on there.

14 MR. PERRY: It's not visible here.

15 MR. HEWITT: Oh, is it because it's bound
16 in the book?

17 A Yeah, bound in the book.

18 Q (By Mr. Hewitt) It's probably bound in the
19 book.

20 A Yeah.

21 Q Okay.

22 A Supposed to be -- see it there.

23 Q Yeah. Okay. So it's there.

24 A 24 -- yes.

25 MR. HEWITT: It's not very good in there,

1 is it?

2 MR. PERRY: Yeah, it's not visible.

3 MR. HEWITT: It's not visible. Okay.

4 Q (By Mr. Hewitt) Mr. Beverly asked a question
5 about -- with respect to the lab notebook, as to why
6 more samples were not in the notebook in the period
7 November to December, 1986. Do you recall that? He
8 asked you the question?

9 A About my notebook?

10 Q Yes.

11 A We have two kinds of notebook. One is for
12 the -- this kind of resistance measure, which was kept
13 by our student by Jeff Bechtold. Sometimes the student
14 just throw them away randomly. Only Jeff Bechtold would
15 try to keep them in order.

16 So, if we're talking about measurement
17 data, it might be missing sometime, may not be
18 collect -- collected together. That's possible.

19 Q Regarding the number of samples, is it -- was
20 it your practice that some of the samples were discarded
21 at various stages because they failed either in the
22 preparation or were unstable and others were written
23 down in the notebooks that appeared to be more
24 beneficial?

25 MR. BEVERLY: Objection, form.

1 A Mostly, I will it write it down, the
2 calculation. And -- but if summary I do not write the
3 transition temperature and preparation condition, very
4 likely they may fail or something. I don't think it
5 worth to write it down. Sometime it happens.

6 Q (By Mr. Hewitt) So, not every -- not every
7 sample then was written down --

8 A Right.

9 Q -- for that reason?

10 A Right.

11 Q Let's talk about Mr. Cox for a minute and then
12 I'm going to be through.

13 You have testified, as well as stated in
14 your affidavit, that you were lying when you said in the
15 declarations that you had a -- you and Dr. Chu spoke by
16 telephone in mid December and at that time Dr. Chu
17 suggested yttrium and lutetium; is that correct?

18 MR. PERRY: Objection, form.

19 MR. BEVERLY: Objection, form.

20 A I have been make the correction in the last
21 deposition. I do not like you to use the liar as in
22 untruthful. Okay? I hope you can accept it.

23 Q (By Mr. Hewitt) Well, I can't accept it because
24 it's -- it's throughout your affidavit. But for
25 purposes of my question to avoid any argument, you --

1 let me re-ask the question.

2 Is it true you testified that your
3 statements in -- in the declarations were untruthful
4 where you stated that Dr. Chu phoned you and -- in
5 mid-December 1986 and suggested yttrium and lutetium?

6 MR. BEVERLY: Objection, form.

7 A Correct.

8 Q (By Mr. Hewitt) All right. Do you recall ever
9 telling Mr. Cox that you were lying making those
10 statements?

11 MR. BEVERLY: Objection, form.

12 A No.

13 Q (By Mr. Hewitt) As far as he knew --

14 A He knew it.

15 Q He knew what?

16 A He knew that's not true. Why should I tell him
17 that?

18 Q I'm sorry. He knew what was not true?

19 A He knew exactly that's not true because he
20 asked me to verify Dr. Chu. How should I tell him I
21 lie? No.

22 Q I -- I'm not following you.

23 A He -- Charles Cox asked me to do so, and I told
24 him that's not true. But he says, "You have to do that
25 in order to help UH have the patent; otherwise, we lost

1 the patent."

2 Q Doctor, are you saying, then, that Mr. Cox told
3 you to lie?

4 A He know that's not untrue but he want me to say
5 it.

6 Q So, you're saying today that Dr. Cox -- excuse
7 me -- Mr. Cox told you to make an untruthful statement?

8 A Correct. Not only one time. He talked to me
9 twice.

10 Q And exactly what did he tell you?

11 A That's why I say it. He said, "Ruling, we need
12 to identify Dr. Chu is the person who have the yttrium
13 substitute idea." I said, "Why?" He said, "Well,
14 because he's you people's representative, represent UH.
15 We have the fight with Alabama."

16 And at that time, I really don't
17 understand the patent thing.

18 THE COURT REPORTER: The what?

19 A I do not understand anything of patent.
20 Charles told me only way we can win the patent with
21 Alabama is I have to identify Dr. Chu is the person who
22 was -- suggested substitute lanthanum with yttrium.

23 Q (By Mr. Hewitt) Mrs. Meng, your affidavits --
24 your -- your declarations also state that Dr. Hor
25 suggested yttrium to Dr. Wu, correct?

1 A We -- in the meeting?

2 Q Yes.

3 A Yes.

4 Q And did you understand that, because of
5 Dr. Hor's suggestion, that Dr. Wu was not an inventor
6 because Dr. Wu did not come up with the idea?

7 MR. PERRY: Objection, form.

8 A Say it again.

9 Q (By Mr. Hewitt) Yeah. Isn't it true that with
10 respect to the University of Alabama, the issue was
11 whether or not Dr. Wu was told about yttrium rather than
12 coming up with the idea to substitute yttrium for
13 lanthanum himself?

14 MR. PERRY: Objection, form.

15 A I only concerned this interference with Alabama
16 and UH. I do not confirm any individual person. That's
17 all I think. I always consider UH as a team. Alabama a
18 team. Because Mao Kwen Wu was representing Alabama.
19 And I know this idea really come from UH. So, UH should
20 win the patent, not Alabama.

21 Q (By Mr. Hewitt) And that was the issue in the
22 interference, wasn't it --

23 A Yes, at that time --

24 Q -- that the -- that the --

25 A I never put Mau Kwen Wu individual. Think

1 about it. If he is on our team work together, he's not
2 represent Alabama. It's a different story.

3 Q Your declarations, however, state clearly that
4 Dr. Hor suggested yttrium to Dr. Wu, correct?

5 A Correct.

6 Q And that is a true statement, isn't it?

7 A Yes.

8 Q And as a result that statement, then, isn't it
9 true that Dr. Wu learned of yttrium from Dr. Hor rather
10 than conceiving the idea himself?

11 A Correct.

12 MR. HEWITT: I pass the witness.

13 MR. BEVERLY: I think we've taken up
14 enough of your time, Ms. Meng. We really appreciate it.
15 I will reserve any further questions for the time of
16 trial.

17 THE VIDEOGRAPHER: The time is 4:55 p.m.
18 We're off the record.

19 (Proceedings concluded at 4:55 p.m.)
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I declare under penalty of perjury that the foregoing is true and correct.

RULING MENG

SUBSCRIBED AND SWORN TO BEFORE ME, the undersigned authority, by the witness, RULING MENG, on this the ____ day of _____, _____.

NOTARY PUBLIC IN AND FOR

THE STATE OF _____

My Commission Expires: _____

1 STATE OF TEXAS
2 COUNTY OF HARRIS

3 VOLUME 3

4 REPORTER'S CERTIFICATE

5 ORAL DEPOSITION OF RULING MENG

6 May 26, 2010
7

8 I, the undersigned Certified Shorthand Reporter in
9 and for the State of Texas, certify that the facts
10 stated in the foregoing pages are true and correct.

11 I further certify that I am neither attorney or
12 counsel for, related to, nor employed by any parties to
13 the action in which this testimony is taken and,
14 further, that I am not a relative or employee of any
15 counsel employed by the parties hereto or financially
16 interested in the action.

17 SUBSCRIBED AND SWORN TO under my hand and seal of
18 office on this the _____ day of _____,
19 _____.

20 _____
21 Shirlee (Sasi) Romney, CSR
Texas CSR 975
22 Expiration: 12/31/2011
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