

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

WU et al.                                 ) Interference No. 102,447  
  )  
VS    ) Examiner-in-Chief  
  )  
CHU   ) Ronald H. Smith

DEPOSITION OF RULING MENG  
April 29, 1993

COPY

CARTER & CARROLL  
1415 Louisiana, Suite 3150  
Houston, Texas 77002  
713/655-9949

RLM1033

A P P E A R A N C E S:  
FOR THE PARTY WU:

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OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT  
Crystal Square 5 - Suite 400  
1755 Jefferson Davis Highway  
Arlington, Virginia 22202  
By: Mr. Steven B. Kelber

FOR THE PARTY CHU:

PRAVEL, HEWITT, KIMBALL, & KRIEGER  
1177 West Loop South - Tenth Floor  
Houston, Texas 77027  
By: Mr. Charles M. Cox

On the 29th day of April, 1993,  
beginning at approximately 10:00 a.m., at the offices of  
Pravel, Hewitt, Kimball & Krieger, Houston, Texas,  
RULING MENG appeared before me, Larry Carroll, Court  
Reporter, and being by me first duly sworn, testified by  
her oral deposition as hereinafter set out, pursuant to  
Federal Rules of Civil Procedure that:

## S T I P U L A T I O N S

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All formalities precedent to and incident to the taking and return of the deposition were waived, including notice of filing; without making any objections at the time of taking, either party to the suit should have the right at the time of trial to urge objections to questions appearing in the deposition.

It is further stipulated that the deposition require signature before filing, but may be signed before any Notary authorized to administer oaths.

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INDEX

Examination By Kelber ..... 5

EXHIBITS

EXHIBIT NUMBER	PAGE MARKED
Exhibit No. C-1 .....	5
Exhibit No. W-1 .....	14

## RULING MENG

1  
2 Called as a witness, having first been duly sworn,  
3 testified on her oath as follows:  
4  
5

6 MR. COX: We're here today to the  
7 provide Mr. Kelber an opportunity to cross  
8 examine the witness whose direct testimony  
9 was been placed into the record by reason  
10 of a Declaration. The deposition, pursuant  
11 to his request for cross-examination, was  
12 called by me, the party for whom Ruling  
13 testified, and I'd like to have made as the  
14 first exhibit to this transcript the Notice  
15 of Examination of the witness.  
16

17 (Deposition Exhibit No. C-1 Marked)  
18

EXAMINATION

19  
20  
21 BY MR. KELBER:

22 Q. Good morning, Dr. Meng. Thank you for coming.

23 A. Good morning.

24 Q. Meng, is that the correct pronunciation?

25 A. Kind of.

- 1 Q. Okay. Dr. Meng when was the first time that you  
2 actually saw a sample of a composition that was  
3 demonstrated in your presence to exhibit  
4 substantially no electrical resistance at a  
5 temperature above 77 degrees K?
- 6 A. I don't quite understand your question.
- 7 Q. Okay. Maybe I should lay some foundation.
- 8 A. Right.
- 9 Q. Have you seen demonstrated by subjecting a sample  
10 of a composition to an elevated temperature and  
11 then decreasing the temperature, monitoring the  
12 resistivity, or resistance of that sample? Have  
13 you seen tests of that type conducted prior to  
14 today?
- 15 A. You mean the question you asked me, have I see  
16 anything to measure, to see the resistance drop,  
17 the measurement?
- 18 Q. Have you actually seen tests of that type  
19 conducted?
- 20 A. Oh, sure, in my lab.
- 21 Q. Okay. The question is, do you recall the very  
22 first time you ever saw a test like that  
23 conducted where the sample being tested exhibited  
24 a drop to substantially no resistance at a  
25 temperature above 77 degrees K?

1 A. You mean, you ask me, did I see the measurement,  
2 when I see the sample, transition drop above  
3 77 K?

4 Q. Or above, yes.

5 MR. COX: We're just speaking of  
6 transition now, Counsel?

7 MR. KELBER: I don't want to get  
8 into a dispute over technical terms.

9 A. This, it happen in our lab a lot.

10 Q. Do you recall the very first time you ever saw a  
11 drop from a positive resistance value to  
12 substantially zero at a temperature above 77  
13 degrees K?

14 A. I couldn't recall what time, but I did see it in  
15 my lab in 1987.

16 Q. Okay. Could it have been -- do you recall before  
17 February of 1987?

18 A. Yes. In fact, we saw it in 1986.

19 Q. Okay. And what was the formulation of that  
20 composition, if you recall?

21 A. At that time we had lanthanum, 1986. We did saw  
22 the high temperature drop in the sample, which  
23 made by lanthanum, barium, copper oxide.

24 Q. At what pressure was that that you recall?

25 A. Ambient. And also not the resistant measurement,

1           it's Meissner measurement.

2       Q.     The Meissner?

3       A.     Uh-huh.

4       Q.     Meissner effect.

5            Okay. Do you ever recall actual resistance  
6            being measured against change in temperature and  
7            seeing a drop in resistance?

8       A.     Unfortunately, that sample second time is not  
9            repeat, so we did not measure the resistance.

10      Q.     Okay. Was there a time subsequent to that  
11            incident that you have just mentioned when you  
12            did see a sample tested resistance against a  
13            change in temperature and saw a drop in  
14            resistance at a temperature above 77 degrees K?

15      A.     I beg your pardon?

16      Q.     Okay. I will take it pieces at a time.

17            Let me backtrack and try it a different  
18            way. Do you recall a visit to the facilities of  
19            the University of Houston --

20      A.     Uh-huh.

21      Q.     -- by individuals from the University of Alabama  
22            namely, M.K. Wu, and James Ashburn --

23      A.     Uh-huh.

24      Q.     -- on or about January 30, 1987?

25      A.     Uh-huh.



1 MR. COX: Ms. Meng, you will need to  
2 let Mr. Kelber complete his question fully  
3 before responding, and then when you  
4 respond, you need to respond by other than  
5 an uh-huh or huh-uh.

6 THE WITNESS: Okay.

7 MR. COX: I think that you were  
8 indicating you were following his question  
9 instead of responding during that sequence,  
10 weren't you?

11 Well, never mind, okay.

12 MR. KELBER: That's okay.

13 Appreciate that.

14 MR. KELBER: Can you read that  
15 question, the last substantive question  
16 back?

17

18 (The Reporter Read Back)

19

20 A. Yes.

21 Q. Do you recall that visit or or about January 30,  
22 1987?

23 A. Yes.

24 Q. Do you recall the purpose of their visit at that  
25 time?

1 A. Yes.

2 Q. Can you describe for me what that purpose was?

3 A. I think they have the sample. They want to come  
4 to confer is it superconducting or not, and about  
5 77 degree. Because they are not quite sure.  
6 They only have resistant measurement.

7 Q. And, do you recall, did they bring a sample with  
8 them?

9 A. Yes.

10 Q. Do you recall seeing that sample tested in your  
11 laboratory -- I am sorry the laboratories at the  
12 University?

13 MR. COX: Counsel, I am going to  
14 object because you're exceeding in your  
15 cross the scope of the direct examination.  
16 These questions exceed the scope of direct.

17 MR. KELBER: All right we'll try it  
18 a different way. Are you going to direct  
19 the witness not to answer?

20 MR. COX: No. I am stating the  
21 objection for the record.

22 MR. KELBER: Appreciate the  
23 objection.

24 MR. COX: And if you continue this  
25 line, I would like to have a running

1 objection.

2 MR. KELBER: I think that is  
3 appropriate.

4 MR. COX: And if it continues to go  
5 very long --

6 MR. KELBER: It won't go for very  
7 long, but we'll take your running  
8 objection.

9 Q. (By Mr. Kelber) Do you recall if M.K. Wu and  
10 Ashburn brought a sample of the material they  
11 believed to be superconducting with them when  
12 they visited the University of Houston on January  
13 30, 1987?

14 A. Yes.

15 Q. Do you recall seeing that sample tested?

16 A. I couldn't remember because I am not the one to  
17 test it.

18 Q. I see. Were you advised of any results of the  
19 testing of that sample?

20 A. I was making other sample at that time, so I  
21 couldn't recall it.

22 Q. I see. Do you have personal knowledge of whether  
23 other individuals at the University tested that  
24 sample on that visit on January 30?

25 That will be the last question on this

1 line.

2 MR. COX: Okay. Then just for the  
3 report, objection. Exceeds the scope of  
4 direct.

5 A. Yes. The people in our group.

6 MR. KELBER: For the purposes of  
7 effective cross-examination, we would like  
8 to request copies of any records that may  
9 have been developed by the individuals  
10 referred to as the people in Dr. Meng's  
11 group, including Dr. Meng, involving  
12 testing of the sample brought.

13 Q. (By Mr. Kelber) Let me ask you to turn now, to  
14 the Declaration. I have a copy, Charles. Would  
15 you prefer she works from yours?

16 MR. COX: Well, If you have an extra  
17 copy, then that way we'll --

18 MR. KELBER: I have a copy.

19 (Handing)

20 MR. KELBER: Let me state for the  
21 record that certain of the exhibit pages  
22 that involve the reduced table in this copy  
23 have the last column not completely  
24 reproduced, so if we get to questions on  
25 that, I'll be careful not to use that.

1 MR. COX: That is a result of your  
2 copying process, not ours, I hope.

3 MR. KELBER: Right. No objection to  
4 the duplication process.

5 Q. (By Mr. Kelber) Dr. Meng, have you seen the  
6 document in front of you before?

7 A. Yes. What do you mean before?

8 Q. Before today.

9 A. Yes.

10 Q. I am sorry.

11 Let me ask you to turn to page 11 of that  
12 document. Is that your signature at the bottom  
13 of the page?

14 A. Yes.

15 Q. Okay. Did you read this document before signing  
16 that on page 11?

17 A. Sure.

18 MR. KELBER: Okay. Do you wish to  
19 have this made an exhibit? It's going to  
20 be part of your record, I assume.

21 MR. COX: I will leave that up to  
22 you. It certainly would be, we anticipate,  
23 a part of our record at the moment.

24 MR. KELBER: Okay. Why don't we do  
25 it anyway just for formality sake.

1 I am going to ask the reporter to  
2 label the document in front of you, Dr.  
3 Meng, as Exhibit W-1.

4

5 (Exhibit No. W-1 Marked)

6

7 Q. (By Mr. Kelber) Dr. Meng, I am going to ask you  
8 to turn to Paragraphs 14 through 19 of Exhibit  
9 W-1, your Declaration, and please take your time.  
10 Take a look at those paragraphs together.

11 Dr. Meng, during the work that is described  
12 in those paragraphs that you have just reviewed,  
13 do you recall ever witnessing a test of a sample  
14 of a material that demonstrated the material to  
15 exhibit a drop to substantially zero resistance  
16 at a temperature above 77 degrees K?

17 A. During that periods?

18 Q. During the testing that is referred to in these  
19 paragraphs, Paragraphs 14 through 19. Or during  
20 the work, I am sorry.

21 A. Yes.

22 Q. And, can you direct me to that work that  
23 reflected that drop in temperature?

24 A. I couldn't recall exactly what time, but I recall  
25 what happened in February. Very beginning of

1 February.

2 Q. Of February. Okay. Now, I want to ask you to  
3 confine your answer for the moment to the work  
4 described in Paragraphs 14 through 19, which I  
5 believe concludes with reference to the date  
6 January 29 through 30.

7 MR. COX: I am sorry, what?

8 Q. If you see Paragraph 19, four lines from the  
9 bottom, there is a reference to January 29  
10 through 30. As of January 30, and between the  
11 time after Christmas of 1986, which is referred  
12 to at the beginning of Paragraph 14?

13 A. Uh-huh.

14 Q. And, up to and including January 30, which is the  
15 last date referred to in Paragraph 19.

16 A. Uh-huh.

17 Q. During the performance of the work described in  
18 those paragraphs, do you recall seeing a test of  
19 the type I described?

20 A. During this time I was working on two set of the  
21 system. One is a lanthanum system, which is  
22 superconducting; and, then, in this time, I start  
23 to working on each system. Up to time January  
24 29, we had not have any result at that time, yet.  
25 In fact, didn't really start yet. I only have

1 time to write a formula and order the material.

2 I do not receive my material.

3 Q. You did not receive your --

4 A. Material.

5 Q. Okay. Let me turn your attention, now, Dr. Meng,  
6 to Paragraph 1 of your declaration. Do you still  
7 retain an association with any university, or  
8 college, or research facility in China? Do you  
9 have a regular post?

10 A. No, I don't.

11 Q. Okay. Thank you.

12 Let me turn your attention to Paragraph 5  
13 of your Declaration. And, do you see that there  
14 is a reference about the middle of that paragraph  
15 to the preparation of La-Ba-Cu-O compositions  
16 having nominal formulas different than that  
17 described by the Bednorz and Muller article? Do  
18 you see that reference?

19 A. Yes.

20 Q. Do you recall how you arrived at the different  
21 nominal formulas?

22 A. You mean is different with the Bednorz nominal,  
23 which were labeled day one, day two?

24 I don't understand your question.

25 Q. Okay. Let me rephrase it. Let's go back to



1 Paragraph 4.

2 A. All right.

3 Q. Is the nominal formula set forth in Paragraph 4  
4 the nominal formula that is referred to in  
5 Paragraph 5 in the section I just referred to?

6 A. Uh-huh.

7 Q. Am I correct in understanding that Paragraph 5 of  
8 your Declaration indicates that you prepared  
9 compositions having the same elements, but  
10 different to nominal formulas?

11 A. Yes, because we already find other structure.  
12 It's not one-one-three. It's two-one-four. So,  
13 therefore, we changed composition.

14 Q. Okay.

15 A. Formula, we change the formula.

16 Q. How did you arrive at the specific nominal  
17 formulas to test?

18 A. Basically, we had depend on the structure.

19 Q. Could you describe for me how you would change it  
20 in light of the structure?

21 A. The first sample we make based on Bednorz and  
22 Muller's composition is superconducting, but it's  
23 Meissner effect proportional very small, indicate  
24 that's not single phase, or not the right phase.  
25 They might have possibly superconducting, and

1           then I remembered the Japan's -- the identical  
2           structure is 214, so once you change the formula  
3           to 214, you can get a pure phase, almost 70  
4           percent. So that's the first one. You have to  
5           find the structure.

6       Q.     So you would prepare compositions that you hoped  
7           would reflect a 214 structure?

8       A.     Right.

9       Q.     I see. Is it correct, then, that you would  
10          select the atomic ratios of the elements to be  
11          employed in the composition on a basis that you  
12          would expect to give a 214 structure?

13                   MR. COX: I object for just a second  
14                   in terms of the questions being ambiguous.  
15                   When you say you, do you mean the U of H  
16                   group?

17                   MR. KELBER: Dr. Meng specifically.

18                   MR. COX: To the exclusion of  
19                   anybody else?

20                   MR. KELBER: To the exclusion of  
21                   anybody else.

22       A.     For me, the routine unnatural. Once we had a  
23           compound to make, we tried to optimate (sic) the  
24           condition, so we are going to vary the ratio of  
25           the element to find out which one is optimal

1 condition. So that is the very nature to do a  
2 different composition to compare the property.

3 Q. I see. How would you arrive at the specific  
4 atomic ratios to use in varying the composition?

5 MR. COX: Do you understand the  
6 question, Ms. Meng? When he says you, he  
7 means you to the exclusion of anybody else.

8 A. I remember at that time Dr. Chu talked me very  
9 often, and he is the supervisor in my lab. So,  
10 → most of the time he was talk to us because what  
11 kind of material we should make, and basic  
12 formula. Okay?

13 Q. Okay.

14 A. Then I call in his supervision, so based on my  
15 → knowledge so I can decide what composition I had  
16 to make.

17 Q. So, for instance, let's go to the very bottom of  
18 Page 3 of your Declaration. There is a very  
19 specific composition set forth there that's  
20 different from the Bednorz and Muller  
21 composition, is that correct?

22 A. Sure.

23 Q. And, you selected those -- please correct me if I  
24 am wrong -- you selected those atomic ratios that  
25 are reflected there in light of Dr. Chu's

- 1 direction to test different nominal compositions  
2 and your knowledge in the field?
- 3 A. Yes.
- 4 Q. Thank you Dr. Meng. I am sorry to belabor a  
5 point so much, but it's important for the record  
6 to be clear.
- 7 A. That is okay.
- 8 Q. Okay. Now, there is following the composition  
9 that we've been discussing at the very bottom of  
10 Page 3, and continuing with Paragraph 5 on the  
11 top of page four, there are several other  
12 compositions listed. Do you see those?
- 13 A. Yes.
- 14 Q. Those would be arrived at as similar -- those  
15 compositions would be arrived at in a similar  
16 fashion by you?
- 17 A. Yes.
- 18 Q. At the time you determined these particular  
19 compositions, did you have a specific expectation  
20 of what temperature, or temperature range they  
21 would exhibit substantially zero resistance, if  
22 any?
- 23 A. Yes. Because, we saw this -- it's difficult to  
24 say, because we have saw the transition  
25 temperature above 77 degree from this system.

1           So, we expecting this should have higher  
2           temperature than the 35 degree. So, that's why  
3           we try to vary the composition, to reproduce the  
4           result we had saw in 1986. We saw the transition  
5           temperature above 77 degree from the Lanthanum  
6           system, so we kind of believed that due to  
7           resistance, higher transition temperature in this  
8           system.

9       Q.     When you prepared these, or identified these  
10           compositions, did you expect that all of them  
11           would exhibit a drop to substantially zero  
12           resistance at temperatures at 77 degrees K, or  
13           higher?

14    A.     I am not quite sure. At that time we just  
15           hopefully.

16    Q.     I understand. Did you in fact test the  
17           compositions J-1 through J-6 listed in Paragraph  
18           5? Did you test those compositions for  
19           resistance at temperatures of 77 degrees K or  
20           better?

21    A.     The team UH group tested.

22    Q.     Okay. Did you personally do that test?

23    A.     No.

24    Q.     Do you recall being informed of the results of  
25           that testing?

1 A. Oh, yeah. We had discussed the result everyday  
2 with my colleague, and also with Dr. Chu.

3 Q. I see. Please allow your counsel to object  
4 before answering the question, if he has  
5 objection.

6 Do you recall whether, in the course of  
7 those discussions, anybody indicated that any of  
8 these samples exhibited substantially zero  
9 resistance at a temperature above 77 degrees K?

10 A. You want me to wait?

11 Q. My concern is if I had been asking this on  
12 direct, your counsel would have probably  
13 objected. It's a special legal question, but if  
14 your counsel has no problem with that question --

15 MR. COX: And the question is with  
16 respect to the compositions J-1 through J-6  
17 as listed in Paragraph 5 of the affidavit?

18 MR. KELBER: That is correct.

19 MR. COX: And the question is  
20 whether anybody in the group discussions  
21 stated that they had observed zero  
22 resistance in any of those at a temperature  
23 of 77 degrees or greater?

24 MR. KELBER: That is correct.

25 MR. COX: You may answer.

1 A. Not in zero resistance drop. Not to the zero,  
2 77, but they do have transition start at 77  
3 degree.

4 Q. Okay. I am going to ask you to turn to Paragraph  
5 7, now, of your Declaration which is at the  
6 bottom of Page 4 to the top of Page 5. Do you  
7 see the reference to a conversation that occurred  
8 by phone while Dr. Chu was out of town?

9 A. (Witness Nods)

10 Q. Do you recall where Dr. Chu was at that time?

11 A. I remember he is in Washington, D.C.

12 Q. Do you recall for what purpose?

13 A. Yeah. He serve in the National Foundation --  
14 MIS. National Foundation Science as a  
15 consultant.

16 MR. COX: May I for just a second?

17 MR. KELBER: Sure.

18 MR. COX: National Science  
19 Foundation, or National Foundation for  
20 Science?

21 THE WITNESS: MIS.

22 MR. KELBER: MIS.

23 MR. COX: MIS?

24 MR. KELBER: Yes.

25 MR. COX: I hate to profess my

1                   ignorance. What is that an acronym for?

2                   MR. KELBER: I have seen only the  
3                   acronym.

4       Q.        (By Mr. Kelber) Dr. Meng, do you know what MIS  
5                   stands for? MIS, do you know what the initials  
6                   stand for?

7       A.        N is the national, I is -- let me.

8       Q.        National Institutes for Science?

9       A.        I think the National Foundation Science  
10                  something.

11      Q.        Okay. Now, in Paragraph 8 on Page 5 of your  
12                  Declaration, that is W-1, you indicate Dr. Chu  
13                  described the substitution of barium --  
14                  substitution for barium, I am sorry, by strontium  
15                  and calcium, is that correct?

16      A.        Yes.

17      Q.        Did you in fact prepare compositions following  
18                  that suggestion?

19      A.        I was start to do it, replace barium by  
20                  strontium; however, Dr. Chu stopped me, because  
21                  he said he already talked to Dr. Wu, and asked  
22                  Dr. Wu to prepare the sample; and, he said he  
23                  considered Dr. Wu, since he met with, you know,  
24                  group he want to promote him, so he want him to  
25                  get involved with this high Tc, so I stopped to



1 make the strontium compound instead.

2 Q. Were you present at the conversation between Dr.  
3 Chu and Dr. Wu that you referred to?

4 A. I don't understand your question.

5 Q. Dr. Chu related to you a conversation that he had  
6 with Dr. Wu asking Dr. Wu to prepare such a  
7 sample.

8 A. Yes, Dr. Chu talked to me. He said he met Dr. Wu  
9 in the MIS meeting, material society meeting, and  
10 he described his idea how to replace strontium to  
11 barium with raise the temperature to Dr. Wu, and  
12 asked Dr. Wu to prepare the sample, and he told  
13 me, Dr. Wu cannot compete with us. We cannot  
14 overlap his work. So I stopped to prepare the  
15 sample.

16 MR. KELBER: To the extent Dr.  
17 Meng's answer describing the conversation  
18 between Dr. Wu and Dr. Chu that she wasn't  
19 present for, we are going to object on the  
20 grounds of hearsay.

21 Q. (By Mr. Kelber) Dr. Chu also discussed with you  
22 the substitution of -- the substitution for  
23 lanthanum in the lanthanum/barium/copper oxide  
24 compositions, is that correct?

25 A. Yes.

1 Q. And, the elements to be substituted for lanthanum  
2 were yttrium and lutetium, is that correct?

3 A. He couldn't yttrium and lutetium, and also other  
4 rare element.

5 Q. Do you recall what the other rare elements were?

6 A. I couldn't recall very well, but I remember he  
7 talking about erbium, other element, other rare  
8 elements, which have small atomical ratio than  
9 lanthanum.

10 MR. COX: Could we go off the  
11 record?

12 MR. KELBER: Sure.

13

14 (Off the Record Discussion)

15

16 Q. Let me ask you to turn now, Dr. Meng, to -- I'm  
17 sorry, let's stay with Paragraph 10, which  
18 crosses pages 5 and 6 of W-1 there.

19 Do you see the reference to the same  
20 program by which "I had earlier prepared and  
21 tested different nominal formulations"? Do you  
22 see that reference at the very bottom of page 5?

23 A. Uh-huh.

24 Q. Now, let me break that down. What types of  
25 testing did you do of the nominal formulations of

1 La-Ba-Cu-O did you perform?

2 MR. COX: She personally?

3 MR. KELBER: Personally.

4 A. I only test X-rays structure and the like.

5 Q. So, X-ray structure was, when you referred in  
6 your Declaration to testing, different nominal  
7 formulations, that was testing to determine X-ray  
8 structure?

9 A. No. Including the resistant and Meissner effect  
10 testing in my lab.

11 Q. Okay. Let me, because it will be important for  
12 understanding the meaning in the record. The way  
13 I read Paragraph 10, the phrase we have been  
14 talking about, it says, "I had earlier prepared  
15 and tested different nominal formulations of  
16 La-Ba-Cu-O for superconductive properties."

17 My question to you is did you personally,  
18 not other members of your group, but did you  
19 personally conduct testing for superconductive  
20 properties?

21 A. Yes. I conduct a student to do it.

22 Q. I am sorry?

23 A. I conduct a student to do that.

24 Q. Oh, you instructed a student to do that testing?

25 A. Yes.

- 1 Q. Did you supervise that testing?
- 2 A. Sometime Dr. Chu is not absent -- when Dr. Chu is  
3 not there.
- 4 Q. I see, but you personally did not do the testing,  
5 is that correct?
- 6 A. Yes, I did not.
- 7 Q. But you personally did prepare the formulations,  
8 is that correct?
- 9 ✓ A. Under Dr. Chu's supervision and discussion, yes,  
10 I prepared the formula.
- 11 Q. Okay. Now, Dr. Chu directed you to prepare some  
12 compositions having yttrium, barium, copper oxide  
13 during the telephone call in mid December, is  
14 that correct?
- 15 A. Yes. He talk to me, we should replace lanthanum  
16 by some small atomical ratio element such as  
17 yttrium, lutetium, or some of the other element.
- 18 Q. Did he specifically direct you to prepare  
19 yttrium, barium, copper oxide compositions?
- 20 A. Obviously only replace the lanthanum so the  
21 formulas definitely should be yttrium, barium,  
22 copper oxide, or lutetium, barium, copper oxide.
- 23 Q. So, his general instruction -- is it correct,  
24 then, that his general instruction was to prepare  
25 compositions replacing lanthanum with this

- 1           variety of other rare earth elements?
- 2       A.     Right.
- 3       Q.     When did you in fact first begin to prepare those
- 4           compositions that Dr. Chu suggested in that phone
- 5           call?
- 6       A.     What do you mean start to prepare? I formed them
- 7           what way?
- 8       Q.     Okay. Actual manipulation of the elemental
- 9           ingredients to form the composition. Physical
- 10          preparation of the sample.
- 11      A.     In late January.
- 12      Q.     Do you see the reference in the next to the last
- 13          line of Paragraph 5 to the same program?
- 14      A.     Paragraph 5?
- 15      Q.     I'm sorry. Page 5, next to the last sentence of
- 16          page 5.
- 17                    Do you see the reference to the same
- 18          program at the next to the last line on Page 5?
- 19                    We'll state it the other way. Paragraph
- 20          10.
- 21      A.     Uh-huh.
- 22      Q.     Counting down one, two, three, four lines. In
- 23          the fourth line in Paragraph 10, do you see there
- 24          is a reference to "the same program"? Do you see
- 25          that reference?

1 A. Uh-huh.

2 Q. What did you mean by "the same program"? What  
3 program?

4 Maybe my question is unclear. Let me read  
5 in the phrase that I am referring to. This is  
6 from the bottom of Page 5 of W-1.

7 "Y-Ba-Cu-O compositions in accordance with  
8 the same program by which I had earlier  
9 prepared." And then the text goes on.

10 My question to you, Dr. Meng, is what do  
11 you mean, or what did you mean in this  
12 Declaration by "the same program"?

13 A. In fact it's the same -- I should say the  
14 procedure is, such as including how we form  
15 formula, and how to make the sample, and then  
16 follow by different kind of tests.

17 Q. I see, so by program, you meant everything from  
18 arriving at suitable nominal compositions, to  
19 calculating the amounts of material, to preparing  
20 those compositions, to processing and testing?

21 A. Uh-huh.

22 Q. Okay. During your phone conversation with Dr.  
23 Chu that is referred to in Paragraph 10, did he  
24 indicate any specific atomic ratios for the  
25 elements that you would be using in these

1 compositions?

2 A. He had been talk to me variety of time, and he  
3 talk about smaller atomical ratios such as  
4 yttrium, lutetium, erbium.

5 Q. Okay.

6 A. And other element.

7 Q. Okay. Without regard to the size of the element,  
8 did he give you specific compositional values in  
9 terms of the amount of each element to be used in  
10 the nominal formula during this phone call that  
11 is referred to?

12 A. We -- he talk to me basically we follow the  
13 previous lanthanum formula to start with.

14 Q. Is that the Bednorz and Muller --

15 A. No, the 214.

16 Q. The 214.

17 Let me ask you to turn to Paragraph 11,  
18 which is on Page 6 of your Declaration. I may  
19 have asked you this before, but I want the record  
20 to be absolutely clear. How did you come to the  
21 understanding that Dr. Chu had suggested the  
22 preparation of the lanthanum/strontium/copper  
23 oxide compositions?

24 A. Right up till we make the first sample, lanthanum  
25 barium, copper oxide, we immediately apply the

- 1           pressure, and under the pressure, the Tc was  
2           going up, the transition temperature was going  
3           up, so that indicate we should have smaller  
4           atomic ratio to replace barium. That's Dr. Chu's  
5           expertise in high pressure/low temperatures, so  
6           it's obvious he can see the result.
- 7       Q.     Why did higher pressure indicate a smaller atomic  
8           ratio?
- 9       A.     Because when you apply the high pressure, you are  
10           going to squeeze the atom close to each other.  
11           The same effect. Just like the same effect. You  
12           use more atom in the structure, you can see the  
13           uni-cell, small item, they are close together.  
14           If a big item, you apply the pressure and squeeze  
15           them together.
- 16      Q.     Is my understanding correct that as long as the  
17           same family of properties was maintained, the  
18           smaller the atomic radius, the more likely it  
19           would be to exhibit improved Tc?
- 20      A.     Not necessary. For example, calcium is much  
21           smaller than strontium, but the transition  
22           temperature is lower than strontium.
- 23      Q.     Okay. Based only on the theory alone of  
24           replacement with elements having a smaller atomic  
25           ratio, without regard to actual testing, would



1           you have expected calcium to give a superior Tc?

2       A.     Yes. Before we tested, we expecting calcium to  
3           be higher.

4       Q.     Okay. Now, if you look at Paragraph 11 about the  
5           fourth line down, you indicate that it was your  
6           understanding that Dr. Chu had suggested to Wu  
7           and Ashburn to prepare specific compositions; is  
8           that correct?

9       A.     Yes.

10      Q.     How did you obtain that particular understanding  
11           that Wu and Ashburn were to prepare these at Dr.  
12           Chu's direction?

13      A.     He called me twice.

14      Q.     Who called you?

15      A.     Dr. Chu. Because the idea to replace the barium,  
16           since after high-pressure result, we already know  
17           that we should replace with the smaller atom, so  
18           in fact I was ready to do it; but he called me  
19           and talked to me, asked me to stop, not to do it.  
20           He said he already talked to Wu, asked Wu to do  
21           it. He doesn't want to overlap effort.

22                           MR. KELBER: We're going to object  
23           to Paragraph 11 to the extent it refers to  
24           that understanding, and Dr. Meng's recent  
25           answer on the basis of hearsay.

1 MR. COX: I mean, you asked her the  
2 question.

3 MR. KELBER: Doesn't mean I can't  
4 object to the answer.

5 MR. COX: Strange that you would  
6 object to your own -- the answer to the  
7 question.

8 MR. KELBER: I think you'll find  
9 that's quite common, but let's go on.

10 Q. (By Mr. Kelber) Is my understanding of the  
11 substance of Paragraphs 11 and 12, to the extent  
12 that the lanthanum, strontium, copper oxide  
13 compositions prepared by Wu and Ashburn and  
14 tested at your facility were interesting but not  
15 suitable for publication, is that correct?

16 A. The result is what we expected. Have higher  
17 transition temperature than the lanthanum, barium  
18 copper oxide; however, the sample quality is  
19 poor. We have to do the other testing. The  
20 transition temperature too wide. We cannot use  
21 that as a publication.

22 MR. COX: I'm sorry. Did you say  
23 too wide?

24 A. Too wide. Delta T. Transition temperature too  
25 wide. They weren't very sharp, but they are very

- 1 wide.
- 2 Q. So, when you refer in the sentence bridging  
3 Paragraph 6 and 7, to the test results were  
4 stated to be too poor --
- 5 A. Yes.
- 6 Q. -- you're referring to the width of the  
7 transition temperature detected?
- 8 A. That's Number 1. Number 2, that's proportional  
9 of the superconducting. Is very low, very small.
- 10 Q. Okay.
- 11 A. It's not as a bulk superconducting. Very few  
12 material inside superconducting.
- 13 Q. The results were sufficiently interesting to  
14 result in your being directed to begin work on  
15 the lanthanum, strontium, copper oxide prior to  
16 doing work on the yttrium, barium, copper oxide  
17 compositions, correct?
- 18 A. I don't understand your question.
- 19 Q. Okay. Let me rephrase it.  
20 You obtained some results on the lanthanum,  
21 strontium, copper oxide compositions that were  
22 prepared by Wu and Ashburn that were interesting,  
23 is that correct?
- 24 A. Yes.
- 25 Q. But, for -- due to undue width, too broad a Tc

1 band, and perhaps other problems with the  
2 samples, the results obtained, while interesting,  
3 were not sufficiently reliable for publication,  
4 is that correct?

5 A. Right.

6 Q. But, they were sufficiently interesting to cause  
7 Dr. Chu to instruct you to begin preparation of  
8 additional lanthanum, strontium, copper oxide  
9 compositions prior to preparing the yttrium,  
10 barium, copper oxide compositions that he had  
11 earlier discussed with you, is that correct?

12 A. During that time, we want to finish this  
13 lanthanum, strontium, copper oxide first, even  
14 though before we do the calcium sample, we do not  
15 know the limit of the replaced barium which  
16 replace the first element.

17 Q. Okay. Maybe I can be more specific.

18 In Paragraph 10, of your Declaration, which  
19 is on Page 5, you indicated that in mid December  
20 Dr. Chu suggested that, among other compositions,  
21 you begin preparation of yttrium, barium, copper  
22 oxide compositions, is that correct?

23 A. Yes.

24 Q. And, after Christmas --

25 A. Yes.

1 Q. -- the samples of lanthanum, strontium, copper  
2 oxide that had been prepared by Wu and Ashburn  
3 were tested and found to be interesting but not  
4 sufficient for publication, is that correct?

5 A. Uh-huh.

6 Q. As a result of that testing, Dr. Chu directed you  
7 to begin preparation of higher quality lanthanum,  
8 strontium, copper oxide compositions, is that  
9 correct?

10 A. Yes.

11 Q. Did you advise Dr. Chu at any time that you would  
12 not be able to prepare the yttrium, barium copper  
13 oxide compositions if you were preparing the  
14 lanthanum, strontium, copper oxide compositions?

15 A. Yes. At that time I was busy about the lanthanum  
16 system, so I have no time to start with other  
17 system.

18 In addition, in the very beginning, we  
19 consider replace the second element first until  
20 we see the calcium result. We find now we should  
21 replace the first element, that's the sequence.  
22 Calcium results low, so that means the second  
23 element, you continue reduce when not can raise  
24 the high temperature, so we should start in the  
25 first element; but, I was too busy for many

1 required sample ask me to send to them, because  
2 we are the first one make the sample, so I didn't  
3 have time to start the other end.

4 Q. Was there anybody else in your research group  
5 responsible for preparing samples?

6 A. During that time I'm the only person. Later on  
7 we have some people join.

8 Q. Would that would have been after February 1?

9 A. No, December. End of December. And, February,  
10 some people join in.

11 Q. Okay. After Christmas of December, 1986 --

12 A. Uh-huh.

13 Q. -- was there anybody else in your research  
14 group -- or I am sorry, Dr. Chu's research group  
15 responsible for the preparation of samples?

16 MR. COX: After Christmas of '86 and  
17 prior to --

18 Q. (By Mr. Kelber) February of 1986.

19 A. After 1987 January, yes.

20 Q. There were other people?

21 A. Uh-huh.

22 Q. Okay. You referred to some results on the  
23 calcium compositions?

24 A. Uh-huh.

25 Q. Were those lanthanum, calcium, copper oxide

- 1 compositions that were tested?
- 2 A. Lanthanum, calcium, copper oxide, right.
- 3 Q. When were those results obtained, do you recall?
- 4 A. I couldn't recall. I think a similar time at  
5 that time.
- 6 Q. Okay. Would you personally have kept records of  
7 the lanthanum, calcium, copper oxide testing?
- 8 A. I couldn't recall I have that, because we just  
9 make very few sample, and then we know it that's  
10 not good.
- 11 Q. Were you responsible for preparing those samples?
- 12 A. Yes.
- 13 Q. I'm going to ask you -- we have today what I  
14 believe is your calculation notebook.
- 15 A. Uh-huh.
- 16 Q. I would ask you to confirm that is in fact your  
17 notebook?
- 18 A. No, I may not write inside at that time. Some of  
19 them.
- 20 Q. Let me ask the question, first, Dr. Meng. You  
21 have anticipated my question.
- 22 Would the results of the calcium testing be  
23 reflected in the notebook that I placed before  
24 you?
- 25 A. I couldn't recall, sir. It has been six years -

- 1           seven years. I haven't take a look at that.
- 2       Q.     Could I ask you to take a look at that notebook
- 3           and see if the calcium results are in there?
- 4       A.     I couldn't recall where to look, but I think we
- 5           have make one or two sample and at the time the
- 6           notebook, we didn't do it. Sometime I just do it
- 7           in a hurry, the paper.
- 8       Q.     So, is it your belief that you would have written
- 9           that sample preparation down somewhere?
- 10      A.     I couldn't remember.
- 11      Q.     Is it normally your practice, Dr. Meng, to
- 12           prepare a written record of the samples that you
- 13           prepare?
- 14      A.     I beg your pardon?
- 15      Q.     Do you have a normal practice, a regular
- 16           practice --
- 17      A.     Right.
- 18      Q.     -- in the laboratory --
- 19      A.     Right.
- 20      Q.     -- of maintaining a written record?
- 21      A.     I do. And I have two undergraduate student at
- 22           that time.
- 23                           MR. COX: Ms. Meng, you'll need to
- 24                           let Mr. Kelber completely finish his
- 25                           question --



1 THE WITNESS: Okay.

2 MR. COX: -- before you answer.

3 THE WITNESS: Okay.

4 MR. KELBER: I appreciate that.

5 MR. COX: I thought that you would.

6 When you reach a convenient break  
7 point --

8 MR. KELBER: Sure. Let me ask  
9 actually one more question and we'll be  
10 right there.

11 Q. (By Mr. Kelber) Do you have any current memory of  
12 whether the graduate students that worked with  
13 you would have kept records of that calcium  
14 testing that you referred to?

15 A. That's undergraduate student.

16 Q. I am sorry.

17 A. Not graduate student.

18 Q. Okay, I understand.

19 These students, do you have any current  
20 memory as to whether they would have kept records  
21 of that calcium testing that you referred to?

22 A. I couldn't remember, because at that time, too  
23 busy.

24 Q. Okay.

25 A. Sometime some of the student we assign the work

1 and then they didn't run the material right.

2 MR. KELBER: Take a break now?

3 MR. COX: Yes.

4  
5 (Recess Taken)

6  
7 EXAMINATION (Continued)

8  
9 MR. KELBER: We're back on the  
10 record?

11 MR. COX: Yes.

12 Q. (By Mr. Kelber) Let me direct your attention, Dr.  
13 Meng, to Paragraph 13 of your Declaration, which  
14 is on Page 7.

15 Do you see the reference to a conversation,  
16 or discussion, excuse me, which was attended by  
17 yourself and M.K. Wu and others? Do you recall  
18 who the others at that discussion were?

19 A. Yeah. The team member in our group.

20 Q. Can you name them for me?

21 A. Dr. Wu, and Peyher, and Caoli, C-a-o-l-i, Caoli.

22 Q. Okay.

23 A. H-o-i, Hoi.

24 Q. And Dr. Chu was there?

25 A. No.

- 1 Q. Who made the -- who described the concept of the  
2 substitution of yttrium for lanthanum during that  
3 discussion?
- 4 A. I couldn't recall very well, but I remember it's  
5 a member in our group in UH. The people in UH  
6 group.
- 7 Q. So there were three of you there?
- 8 A. Yes. Either me, or Paul.
- 9 Q. Okay.
- 10 A. You don't recall if you said it or not?
- 11 A. No. I couldn't remember who is the first one. I  
12 couldn't remember.
- 13 Q. Did Dr. Wu contribute to that discussion at all?
- 14 A. Definitely not.
- 15 Q. Why was it described to him?
- 16 A. We are completely open to him from the very  
17 beginning the lanthanum, barium copper sample  
18 make. He is the first one we sent a sample to  
19 him, because Dr. Chu want him to get involved  
20 this high Tc. So, everything for him we are  
21 open. We consider his team of our member, team  
22 member, so we open discuss it with him.
- 23 Q. Do you recall, did anybody keep notes of that  
24 discussion?
- 25 A. No.

1 Q. Do you recall anything else being discussed at  
2 that meeting?

3 A. Not really, but we discuss something about  
4 strontium result -- lanthanum, strontium copper  
5 oxide result and other thing, also. I couldn't  
6 recall.

7 Q. But this particular one sticks in your mind?

8 A. Yes.

9 Q. Any idea why?

10 A. Because we up to the testing of the strontium,  
11 the important phase of what is next, that's why.  
12 That's the main part that we are discussing at  
13 that time.

14 Q. Now, as I understand it from our discussions  
15 today just before the break, the next step would  
16 be the substitution of calcium.

17 A. No. In that time, it's -- I couldn't recall. It  
18 seems that we really make the sample, and it's  
19 Bell Lab or which lab have the result earlier, I  
20 couldn't recall.

21 MR. COX: B-e-l-l-

22 THE WITNESS: Lab.

23 A. I'm not sure, okay? I couldn't remember very  
24 sure. Maybe they have the result of the calcium  
25 or we have the result of the calcium, I can't

1           remember very well, so we know that this calcium  
2           doesn't help.

3       Q.     So you made the calcium before you made the  
4           strontium?

5       A.     No, no, after; but I couldn't remember if Bell  
6           Lab first make the calcium, and I couldn't  
7           remember that. I am not quite sure. I don't  
8           know.

9       Q.     Dr. Wu and James Ashburn brought the strontium --  
10           lanthanum, strontium, copper oxide sample to  
11           Houston in the period after Christmas, correct?

12      A.     Yes.

13      Q.     Sorry, after Christmas of 1986, is that correct?

14      A.     Uh-huh.

15      Q.     And, it was during that time that this discussion  
16           occurred, correct?

17      A.     Yes.

18      Q.     By this discussion, let me be clear for the  
19           record. I mean the discussion referred to in  
20           Paragraph 13 of your Declaration, is that  
21           correct?

22      A.     Yes.

23      Q.     Now, had the group at the University of Houston  
24           prepared a lanthanum, calcium, copper oxide  
25           sample by the time of that discussion?

- 1       A.       I couldn't remember well, it has been so long,  
2               but I believe we do the calcium before the  
3               discussion, but I am not quite sure now. Now, I  
4               just say I couldn't remember if Bell Lab had the  
5               result, or we had the result early, but at that  
6               time we had impression calcium does not increase  
7               the transition temperature.
- 8       Q.       That information must have come to you between  
9               mid December and Christmas, correct, of '86?
- 10      A.       I am not quite sure now. I couldn't remember  
11              that.
- 12      Q.       Let me turn your attention back to Paragraph 8 of  
13              your Declaration, which is on Page 5. Is my  
14              understanding correct that the discussion that is  
15              referenced in Paragraph 8 between Dr. Chu and  
16              yourself is the same discussion referred to in  
17              Paragraph 7 as occurring in mid December, 1986?
- 18      A.       Which one?
- 19      Q.       Okay. In Paragraph 7, you refer to a discussion  
20              by telephone in mid December, 1986. Do you see  
21              that.
- 22      A.       He called back twice a day, so I couldn't recall  
23              exactly what day, what time, what is the content.
- 24      Q.       But the discussion that is referred to in  
25              Paragraph 7 is the same discussion that is

1 referred to in Paragraph 8, is that correct?

2 A. Almost all of the telephone call we discussing  
3 the same thing, but I cannot tell which day is  
4 discussing calcium, which day is discussing  
5 anything; but all of the telephone call, he call  
6 every other -- every four hour, maybe twice a  
7 day, all talking about, you know, what is the  
8 next step, what is the result, what shall we do?

9 Q. So, that the discussion by telephone referred to  
10 in Paragraph 7 and 8, may have embraced several  
11 discussions, is that correct?

12 MR. COX: Meaning several separate  
13 telephone calls?

14 A. Numerous calls.

15 Q. Numerous calls?

16 A. Everyday have two telephone call.

17 Q. Do you recall how long Dr. Chu was out of town?

18 A. One years. He is on leave. His service over  
19 there for one years.

20 Q. Oh, in Washington?

21 A. Yeah, but he came back every week, but he called  
22 back lunch times and evening, everyday.

23 Q. I see. When did his service in Washington -- I'm  
24 sorry. When did he return to Houston full-time,  
25 do you recall?

1 A. I couldn't recall. Do you remember?

2 MR. KELBER: That's all right.

3 He'll ask if he's got a way of asking.

4 A. He's better remember than me.

5 Q. Okay. Had he returned by January 30, 1987 to  
6 Houston full-time? Had Dr. Chu returned to  
7 Houston full-time?

8 A. Oh, no, no, not full-time, but he did come back  
9 on that day.

10 Q. I see, okay.

11 A. He usually come back on weekend or sometime if we  
12 had emergency, call him back, but I couldn't  
13 recall it.

14 Q. Okay. So, as of mid December, 1986 -- well maybe  
15 we can pin that.

16 Would it be correct to place that between,  
17 let's say, December 10 and December 20 of 1986?

18 You see Paragraph 7 refers to mid December?

19 A. Uh-huh.

20 Q. And I realize that you can't remember the exact  
21 date of these calls, but can you give me a  
22 description of a range of dates what you meant by  
23 mid December?

24 A. I couldn't recall exactly the day.

25 Q. I understand that, but would it be correct to say



1           that it had to happen between December 10 and  
2           December 20?

3       A.     Maybe.

4       Q.     Okay. In mid December, Dr. Chu was suggesting to  
5           you the substitution of strontium and calcium for  
6           barium in the lanthanum, barium, copper oxide  
7           system, correct?

8       A.     Say that again.

9       Q.     In mid December, Dr. Chu suggested to you by  
10          phone the substitution of calcium for barium in  
11          the lanthanum barium calcium -- I'm sorry. In  
12          the lanthanum, barium, copper oxide system, is  
13          that correct?

14      A.     Yes.

15      Q.     He wouldn't have been suggesting it to you if he  
16          knew that it did not improve transition  
17          temperature, would he?

18                   MR. COX: Well, I object to that  
19                   question on the ground it asks Ruling to  
20                   figure out what was in Dr. Chu's mind in  
21                   the making of the suggestion, and the  
22                   reasons he had to suggest it.

23                   MR. KELBER: Fair enough.

24      Q.     (By Mr. Kelber) Did Dr. Chu suggest to you during  
25          the conversations that occurred in mid December

1           between you and Dr. Chu, that the replacement of  
2           barium with calcium in the lanthanum, barium  
3           copper oxide system would increase the transition  
4           temperature for superconducting behavior?

5       A.     I think it's not fair for me to remember exactly  
6           what day, but the basic idea I think is very  
7           clear. From the lanthanum, barium, copper oxide,  
8           after apply the pressure and we see the  
9           transition temperature increasing, then naturally  
10          we consider we have to replace the element.  
11          First step replace the strontium, and the  
12          strontium result is very promising.  $T_c$   
13          increasing, transition increasing; and second  
14          step, definitely we consider replace calcium even  
15          smaller.

16                 I couldn't recall, because at that time  
17                 things developed so fast. I didn't have time to  
18                 do the other things, all of the things going on,  
19                 so I couldn't recall. So we have to resolve in  
20                 the case calcium is lower, or Bell Lab, I am not  
21                 quite sure at that point, but we did make a  
22                 calcium sample.

23       Q.     You did make a calcium sample?

24       A.     Yes, definitely we did, but I couldn't recall if  
25           Bell Lab have the result and then indicate that

1 the calcium is 25 or not -- I am not quite sure,  
2 I couldn't remember well; but actually we pretty  
3 soon we found out that calcium is not going to  
4 raise the temperature, transition temperature any  
5 more; so therefore, naturally idea replace the  
6 first element. We have the numerous conversation  
7 back and forth, back and forth, sometime argue  
8 and different along the line. So I couldn't  
9 remember which day, which day he talked to me,  
10 which element, and I couldn't remember that  
11 exactly.

12 Q. But, my understanding is that in the program at  
13 Houston, the natural course of testing,  
14 preparation and testing, would have been to  
15 prepare the strontium substituted oxides, test  
16 them, and then prepare the calcium substitute  
17 oxides and test them, is that correct?

18 A. I believe we might do it simultaneously, but I am  
19 not quite sure. Because at that time I have a  
20 lot of required for the lanthanum, barium, copper  
21 oxide sample, so my main effort was put on that;  
22 and, we would consider Wu was doing the strontium  
23 sample.

24 Q. Do you recall yourself personally, not the rest  
25 of the members of group, ever preparing a calcium

1 sample?

2 A. If any sample making for undergraduate students  
3 under my supervision, but I couldn't recall that  
4 exactly.

5 Q. You don't recall ever directing any student to  
6 make a calcium sample?

7 A. Again, we have make that. I remember we make it  
8 that, but I couldn't remember exactly.

9 Q. Do you recall what those students' names were?

10 A. One is called, a Vietnamese boy -- one called  
11 Daniel Campbell; and, one is a Vietnamese boy I  
12 couldn't remember. Hoi, or -- Hoi.

13 Q. Okay. Would it have been logical, in your memory  
14 now, would it have been logical at the time  
15 between mid December of 1986, and the end of  
16 December, 1986, to have made and have tested the  
17 calcium substituted oxide, or have read the  
18 results of somebody else making that substitution  
19 before moving on to substitution for lanthanum?

20 MR. COX: Objection, ambiguous. The  
21 question is indefinite in terms of would it  
22 have been logical.

23 MR. KELBER: Dr. Meng has testified  
24 several times that first you make the  
25 strontium, then you make the calcium. Now,

1 I understand that Dr. Meng's memory as to  
2 when each of those was made is not  
3 particularly clear, but first and second  
4 implies a logical order, a numerical order.

5 Q. (By Mr. Kelber) Would it have been consistent,  
6 Dr. Meng, with that numerical order of  
7 first/second to have first made and tested, or  
8 obtained information with regard to the strontium  
9 substituted sample, then the calcium substituted  
10 sample before moving on to substitution of  
11 lanthanum in the lanthanum, barium, copper oxide  
12 system?

13 MR. COX: Same objection.

14 MR. KELBER: You're objecting to the  
15 term consistent with that progression of  
16 first and second?

17 MR. COX: Well, Dr. Meng has also  
18 said that with regard to at least to  
19 strontium/calcium, they might have been  
20 simultaneously prepared.

21 MR. KELBER: That's not what I asked  
22 Dr. Meng, though. I am not asking her what  
23 she did, or what anybody else in Houston  
24 did. I am asking -- let me go back and  
25 make sure we establish the right frame

1 work.

2 Q. (By Mr. Kelber) Is my understanding that because  
3 the application of pressure to the lanthanum,  
4 barium, copper oxide system indicated an increase  
5 in superconducting transition temperature, that  
6 the idea was to substitute elements of smaller  
7 atomic radius in order to improve superconducting  
8 transition temperatures at ambient pressure, is  
9 that correct?

10 A. Right.

11 Q. Consistent with that understanding -- let me ask  
12 it a different way.

13 What is the alkaline earth element? Is  
14 there an alkaline earth element with a smaller  
15 atomic radius than barium?

16 A. Yes.

17 Q. Is there more than one?

18 A. More than one.

19 Q. What is the atomic earth element most closely  
20 related to barium with an atomic radius smaller  
21 than that of barium?

22 A. Strontium.

23 Q. Okay.

24 A. Followed by calcium.

25 Q. Thank you, Dr. Meng.

1 Dr. Chu, according to Paragraph 8 of your  
2 Declaration, suggested substitution of barium by  
3 both strontium and calcium in mid December, 1986,  
4 is that correct?

5 Did you discuss with Dr. Chu at any time  
6 which system to prepare first?

7 A. Since he talked to me and right after that he  
8 called me to stop prepare the strontium because  
9 Dr. Wu was going to do it.

10 Q. Did you move onto -- did he also instruct you to  
11 stop work with regard to the calcium  
12 substitution?

13 A. Not for the calcium. He said strontium first one  
14 he hopefully have high transition temperature  
15 than the barium; and, since he already subject  
16 Dr. Wu to do it, he asked me don't do it. He  
17 doesn't want over effort.

18 Q. Okay. I understand that you don't remember any  
19 specific results obtained between mid December,  
20 '86, and the end of '86, with regard to the  
21 calcium material, but do you recall the  
22 publication of any articles in that period  
23 between mid December, '86, and December 28th,  
24 1986 discussing the the superconducting  
25 transition temperature of lanthanum, calcium,

1 copper oxide systems?

2 A. I couldn't recall there is a publication or not,  
3 but one thing I remember, there is a Bell Lab or  
4 our group, our lab have the result is transition  
5 temperature around 20 to 25.

6 Q. Let me turn your attention, Dr. Meng, to  
7 Paragraph 14 of your Declaration.

8 During the period after Christmas of 1986,  
9 and through January 28, 1987, you made about 85  
10 different copper oxide samples, is that correct?

11 MR. COX: I think I will object to  
12 the question. It's ambiguous. If you will  
13 rephrase it to at least about 85, I mean,  
14 the paragraph here that you've referred Dr.  
15 Meng to refers to certain specific kinds of  
16 compositions. Not to suggest that there  
17 might not have been others made that would  
18 add to the total of '85 is my point,  
19 Counsel.

20 MR. KELBER: I will accept the  
21 rephrasing.

22 Q. (By Mr. Kelber) During the period after Christmas  
23 of '86, and continuing through January 28 of  
24 1987, you made at least 85 different copper oxide  
25 samples, is that correct?



- 1 A. Yes.
- 2 Q. That's a lot of work, isn't it?
- 3 A. Yes.
- 4 Q. Were you, in the course of your study of  
5 superconducting compositions, copper oxide  
6 compositions that were expected, or suspected to  
7 exhibit superconducting behavior, was it  
8 customary for you to make so many samples in such  
9 a short period?
- 10 A. I don't understand your question.
- 11 Q. Well --
- 12 A. You mean in such short a period make such --
- 13 Q. In that period of time.
- 14 A. Right.
- 15 Q. In a period a little -- of approximately thirty  
16 days.
- 17 A. Right.
- 18 Q. You made 85 samples.
- 19 A. Yes.
- 20 Q. During the period November '86 through March of  
21 '87 --
- 22 A. Right.
- 23 Q. -- did you customarily produce samples at that  
24 rate?
- 25 A. In that time, it is a very unusually time, so we

1 worked day and night.

2 Q. Okay.

3 A. And, many sample we work simultaneously, not one  
4 after the other. So, it is not that difficult to  
5 have 85 sample, and more than that sample made.

6 Q. But still you personally made those 85 samples,  
7 or more, correct?

8 A. Yes. And, with the help of some undergraduate  
9 student to grinding the material.

10 Q. Why so much concentrated activity in that period  
11 that you worked day and night? Was there  
12 something specific driving that concentrated  
13 activity?

14 A. Oh, sure. Higher transition temperature is our  
15 dream, and the past thirteen years the transition  
16 temperature has not move; and now we find  
17 superconducting at about 35, we are very excited.

18 In addition, we have saw some trait of  
19 higher transition temperatures. That's I told  
20 you, we saw transition in 77 degree once or  
21 twice, but we cannot stabilize it. Of course, I  
22 try to optimize the condition to see how I can do  
23 the best result, even push up the transition  
24 temperature or not.

25 Q. Okay. Let me turn your attention to Paragraph 15

1 of your Declaration, which starts on Page 7 and  
2 continues on to Page 8.

3 Why was it necessary to complete the work  
4 on the lanthanum, strontium, copper oxide  
5 compositions before beginning the work on the  
6 yttrium, barium copper oxide compositions?

7 A. In fact, that's two reason. Number one, we are  
8 the first group to make this material in the  
9 United States. Many demand from outside the lab.  
10 So, we have provide variety of sample to other  
11 lab.

12 Secondly, in our university, the facility  
13 at that time is very limited. Some of the  
14 property, we may not able to test it, so we  
15 really happy to send sample out to other people  
16 to do other testing; so therefore, I had very  
17 high demand for that.

18 Number two, due to a high -- several  
19 undergraduate student, they consider grinding is  
20 simple, but in fact, they do a wrong job. So, at  
21 certain time I cannot reproduce the result, but  
22 that's very important for me. I got to keep my  
23 sample in high quality, so that's what I mean. I  
24 cannot jump to other things, but if this sample I  
25 cannot do it properly, so that means it's not

1 complete, but at that time that's number one; and  
2 number two, for the yttrium, barium, copper  
3 oxide, we expect they may have high transition  
4 temperature, but nobody say sure, that's a high  
5 temperature. Of course, I would draw means, and  
6 so and so, but at that time I expect they should,  
7 they may, but --

8 Q. Okay.

9 A. It is not really certain yet.

10 Q. Okay. It was possible to make the lanthanum,  
11 barium, copper oxide and lanthanum, strontium,  
12 copper oxide samples at the same time. The work  
13 on preparation of samples of those two copper  
14 oxide systems proceeded simultaneously, correct?

15 MR. COX: I'm sorry, could I have  
16 the question back? That's confusing to me

17

18 (The Reporter Read Back)

19

20 Q. (By Mr. Kelber) That's the question. Did work on  
21 those two copper oxide systems proceed  
22 simultaneously?

23 A. Yes, you can, but it depend on your capability  
24 for lab, my facility, and at that time is very  
25 limited. We borrow the furnace from other group,

1 so kind of limit. You can do a lot of work in  
2 the same time.

3 Q. All right. Let me ask to you turn to Paragraph  
4 18 in your Declaration.

5 Between January 15 and January 28, of 1987,  
6 can you describe for me the work that you  
7 undertook with respect to samples of lanthanum,  
8 strontium, copper oxide samples?

9 A. Can you repeat your question again?

10 Q. Okay. During the period January 15, 1987,  
11 through January 28, 1987, what type of work did  
12 you perform with respect to the preparation and  
13 investigation of samples of lanthanum, strontium,  
14 copper oxide?

15 MR. COX: Again, this is Ms. Meng  
16 personally?

17 MR. KELBER: Ms. Meng personally.

18 A. We tried to optimize the sinterized condition for  
19 the lanthanum, strontium, copper oxide.

20 Q. Specifically in the period January 15, and  
21 January 28th --

22 A. Yes.

23 Q. -- what did you do?

24 A. We optimized the sintering condition, such as  
25 temperature, oxygen content, and sintering time.

1 Q. Okay. Did you make samples in that time frame?

2 A. Yes.

3 Q. And, did you test samples -- did you personally  
4 test samples in that time frame?

5 A. I did not test the sample myself.

6 Q. Okay. Dr. Meng, earlier today your counsel made  
7 available to me original materials from which  
8 exhibits to your Declaration -- from which  
9 exhibits to your Declaration had been drawn.  
10 Those exhibits include a red colored notebook  
11 with the label "Calculation" on it; a sheet of  
12 graph paper, and what I think is commonly  
13 referred as a stenographic notebook, together  
14 with some additional what look to be computer  
15 produced graphs and charts of information. What  
16 I would like to ask you to do is to tell me if  
17 any of these sets of documents which are before  
18 you now, would have records of the work that you  
19 did on the lanthanum, strontium, copper oxides  
20 between January 15th and January 28th, 1987?

21 MR. COX: Maybe we have should take  
22 a little break and give her a chance to do  
23 this.

24 MR. KELBER: Sure.

25

1 (Recess Taken)

2

3

EXAMINATION (Continued)

4

5 Q. (By Mr. Kelber) Dr. Meng before we took a break,  
6 you had been leafing through the materials that  
7 were produced for me by Mr. Cox this morning in  
8 response to our request, looking for materials  
9 that reflected the work that you might have done  
10 on the lanthanum, strontium, copper oxide  
11 materials between January 15, and January 28,  
12 1987; and, I believe you've marked those  
13 materials with these yellow sticky pads, is that  
14 correct?

15 A. Yes.

16

17

18

19

20

21

MR. COX: If I may, just for a  
moment, Counsel, and it may be because of  
the limits of your question, as Dr. Meng  
understands it, but I don't see any sticky  
yellow pads in what I call the graph  
sheets.

22

23

MR. KELBER: Why don't I let Dr.  
Meng respond to that?

24

25

A. I already tell you. This was he pick up from my  
notebook partially what he want, but not the

1 whole thing; so at the time it's not completely,  
2 so that's why I am missing the information.

3 Q. It's my understanding that Dr. Meng did look  
4 through these materials.

5 MR. COX: Well, okay. Off the  
6 record for just a second.

7 MR. KELBER: If you want to ask  
8 questions about it, why don't you ask it in  
9 yours?

10 MR. COX: Okay.

11 A. Let me say one more thing. I did not look very  
12 carefully page by page, but I expecting they may  
13 not have, because the whole book is very thick.  
14 He only pull out some of them, so I didn't look  
15 at very carefully for this chapter.

16 Q. I understand.

17 Let me start with the collection of charts  
18 that, just for the purposes of the record, has  
19 the identifying stamp H471 through H479 at the  
20 bottom right-hand corner; and, I am going to ask  
21 you to turn to the pages that you have marked,  
22 Dr. Meng, by the yellow sticky pad, and my  
23 question to you is with respect to the page  
24 bearing H476 in the bottom right-hand corner, how  
25 do you know that work was done between January 15



- 1                   and January 28th?
- 2       A.       I do that here, that calculation. (Indicating)
- 3       Q.       The pages you are referring to me now come out of
- 4                   your calculation notebook, is that correct?
- 5       A.       Yes.
- 6       Q.       And, the pages up to page that bears the label
- 7                   H26 in the bottom right-hand corner, those were
- 8                   done on what date, do you know?
- 9       A.       This was before January 28th.
- 10      Q.       Okay. I am sorry, pages H20 through -- should be
- 11                   H19, I believe, through H26.
- 12      A.       That's after January 14th. That should be 15th.
- 13                   During this period.
- 14      Q.       So, those pages cover more than January 14th?
- 15      A.       No, no. After January 14th before January 28th.
- 16      Q.       So the work, for instance, on the page bearing
- 17                   the label in the lower right-hand corner H22 --
- 18      A.       Okay.
- 19      Q.       -- that would have been done after the 14th, but
- 20                   before the 26th?
- 21      A.       Yes.
- 22      Q.       Was it customary for you to date the pages as you
- 23                   worked? In other words, you have certain pages
- 24                   with dates on them in your calculation notebook.
- 25      A.       I usually should put the dates on, at least.

- 1                   Sometime I forgot.
- 2       Q.       Okay. Now, these, what is reflected on these  
3                   pages H19 through H26, are compositional  
4                   calculations, correct?
- 5       A.       Uh-huh.
- 6       Q.       Is it possible you did all of those on January  
7                   14th?
- 8       A.       Not likely I finish this sample in January 14th.
- 9       Q.       I am not talking about preparation of -- would  
10                  you do all of the calculations before making the  
11                  sample, or would you do one calculation and make  
12                  one sample?
- 13      A.       Sometime do few of them, sometime do one. Not  
14                  necessary one day do all of them, no.
- 15      Q.       Do you have any feeling for how long it took you  
16                  to do those calculations?
- 17      A.       The question is how long to take me to do the  
18                  calculation?
- 19      Q.       What period --
- 20      A.       Take me to do the calculation only ten minutes.
- 21      Q.       So -- I'm sorry.
- 22      A.       That was your question --
- 23      Q.       Yes.
- 24      A.       -- how long it going to take me to do the  
25                  calculation? For each formula, the calculation

- 1           only ten minutes and finish.
- 2       Q.     So, if you had done them consecutively, you could
- 3           have done all of those calculations on January
- 4           14th, is that correct?
- 5       A.     Not necessary. Because I have two different
- 6           conversation in the different day; and then
- 7           that's the 14th I do this sample, labeled it one,
- 8           two, three, four, five and six, seven, eight,
- 9           nine, and obviously, this one I didn't follow the
- 10          label. This is the second day. I'm not quite
- 11          sure as to which day, but it's before 28th.
- 12          Before this one.
- 13       Q.     But you're not sure which date that occurred?
- 14       A.     Yeah, but according to the book so you can see
- 15          the sequence over here.
- 16       Q.     The only date on that sequence of pages you
- 17          pointed to is the January 14th, is that correct?
- 18       A.     Yes. After January 14th, before January 28th.
- 19       Q.     Before you close that book, let me ask you to
- 20          turn to the page marked H27 in the bottom
- 21          right-hand corner. That bears the date of
- 22          January 26th, 1987, is that correct?
- 23       A.     Yes, 26th.
- 24       Q.     Was it customary for you in the preparation of
- 25          this notebook to go back at times after the date

1 and fill in additional material on a page?

2 Let me ask it a different way.

3 Is it always the case that whatever  
4 information appears on this page must have been  
5 put on on January 26th, 1987?

6 A. Let me repeat your question again. It's what  
7 this thing put down this paper is in this day?

8 Q. Uh-huh.

9 A. Yeah.

10 Q. Let me direct your attention, for instance, to  
11 the very bottom of the page. You see the numbers  
12 that are written in black ink at the bottom of  
13 the page? There are four numbers left to right  
14 across the bottom of page H27. Do you see those  
15 numbers?

16 A. This number?

17 Q. Yes. Are those in your handwriting?

18 A. Yes.

19 Q. And, were those done on January 26th, 1987?

20 It looks like you came back and did  
21 something after -- you have a sequence of work  
22 that's in blue ink, and then you have some  
23 numbers at the bottom that are not -- I'm sorry,  
24 I don't want to characterize, but you have some  
25 numbers on the bottom in black ink. Is it

- 1 possible that you came back later and added those  
2 numbers to that page?
- 3 A. That I couldn't remember what it is the number.
- 4 Q. Is it possible that from time to time in your  
5 laboratory notebook you would come back to a page  
6 after having reflected your work for that date  
7 and add information to it?
- 8 A. That's not usually. I usually not do that, but  
9 this number I couldn't remember what it is, no.
- 7  
10 Q. You didn't do it usually. Is it possible that  
11 you did it sometimes?
- 12 A. Not likely.
- 13 Q. Okay. Would other people have made entries in  
14 your calculation notebook?
- 15 A. What do you mean?
- 16 Q. People other than yourself. Would there have  
17 been reason for anybody else beside yourself to  
18 make entries, to write in your calculation  
19 notebook?
- 20 A. Only give my permission they can write in my  
21 calculation notebook.
- 22 Q. Okay.
- 23 A. If I ask someone to help me, okay, and then he  
24 can write it down in my notebook, but not anyone  
25 come on just randomly and write.

- 1 Q. Okay. Let me ask you to look at the page that is  
2 marked H50 in your notebook. Do you see the  
3 entry marked 26 in the circle on that page?
- 4 A. Yes.
- 5 Q. That's not in your handwriting, is it?
- 6 A. No.
- 7 Q. Do you know whose handwriting it is?
- 8 A. Yes. My colleague's.
- 9 Q. Colleague?
- 10 A. Uh-huh.
- 11 Q. I see. Would that be in Hayhor?
- 12 A. No. Nada Wang. W-a-n-g.
- 13 Q. Okay. Let me go back and finish some unfinished  
14 business. With regard to these charts that you  
15 have identified as occurring between January 15th  
16 and January 28th, do those charts reflect testing  
17 on samples that you might have prepared? Do  
18 those charts reflect testing results?
- 19 A. Yes. And, also sintering condition.
- 20 Q. I see. Did you conduct the sintering?
- 21 A. Yes.
- 22 Q. Do you see how there are some entries in red ink?  
23 Most of the entries are in blue ink, is that  
24 correct?
- 25 A. Right.

- 1 Q. But there is some entries in red ink on page  
2 marked H476?
- 3 A. Yes.
- 4 Q. Were those entries made at the same time the  
5 entries in blue ink were made?
- 6 A. Let me try to remember. The P's indicate a -- B  
7 and P I couldn't remember. They indicate the  
8 pressure atmosphere, or so-and-so on. They might  
9 make them the same day, but in order to  
10 distinguish the different, it just tell the  
11 different condition.
- 12 Q. Was the same individual making those, the blue  
13 ink indications and the indications in red ink?
- 14 A. Yes. The B are put in blue and the P are put in  
15 red.
- 16 Q. Any reason why?
- 17 A. I couldn't remember why B and why P. Must be  
18 some reason, but I have to think about it. It's  
19 8 years, I couldn't remember. For atmosphere B,  
20 or what was P?
- 21 Some of this I remember, it's metal to  
22 semi-conductor, and metal to super-conductor,  
23 infinity, but the B and P must be something. I  
24 couldn't remember that.
- 25 Q. Is there any reason for use of the red ink to

- 1 mark the P?
- 2 A. Yeah. In order to distinguish the B and P, must  
3 be, but I couldn't recall that now.
- 4 Q. Okay. You have anticipated my next question.  
5 Turning to the page marked H477, do you see that  
6 there is black ink and red ink on that page?  
7 There are entries in black ink, and also entries  
8 in red ink on the chart marked H477?
- 9 A. Uh-huh.
- 10 Q. Does that reflect two different individuals  
11 making entries?
- 12 A. No. This page all my handwriting, but sometime I  
13 pick up one pen and I just put it on. In my  
14 drawer, I have more than ten pens. Sometimes I  
15 pick up one that's red color and sometimes blue  
16 and sometimes a dark color. That is not really  
17 something that indicated anything. I don't think  
18 that indicated anything for this color and this  
19 color.
- 20 Q. Did you see what appear to be a couple of columns  
21 of numbers at the very bottom of the right-hand  
22 side of the chart of page H477?
- 23 A. Yes.
- 24 Q. What is the significance of those numbers?
- 25 A. The transition temperature onset and offset from



1 37 degree Kelvin to 27.3 Kelvin.

2 Q. Now, were those entries made on the day the rest  
3 of the entries were made?

4 MR. COX: The rest of the entries?

5 MR. KELBER: I'm sorry. The rest of  
6 the entries, all of the other entries on  
7 page H477.

8 MR. COX: For all of the other  
9 compositions, or for those compositions to  
10 which those numbers are specific.

11 MR. KELBER: Let me rephrase my  
12 question.

13 Q. (By Mr. Kelber) There is a series of numbers made  
14 in regular rows on not only numbers, but  
15 compositional figures. There is a series of  
16 entries made in regular rows on the chart of page  
17 H477, is that correct?

18 A. Yes.

19 Q. And then there are two columns of numbers that  
20 you just testified with respect to at the bottom  
21 right of page H477, is that correct?

22 A. This three?

23 Q. Those two sets of columns.

24 A. Yes.

25 Q. Now, do those numbers correspond to the entries

- 1 in the left-hand page?
- 2 A. Exactly, right.
- 3 Q. Okay.
- 4 A. That is indicates this field sample may not be  
5 good, or transition temperature low or so on.  
6 And this one is indicate correspondent this  
7 sample. In this column the sintering condition,  
8 and transition temperature onset/offset resistant  
9 is a function of temperature behaving metallical,  
10 or semi-conductor.
- 11 Q. Okay, thanks. I think you cleared up a lot of  
12 them. I don't think we need to make copies.
- 13 MR. COX: Okay.
- 14 Q. Dr. Meng, looking at Paragraph 18 of your  
15 Declaration. On January 29th, you turned your  
16 attention to the preparation of a list of samples  
17 for yttrium, barium copper oxide compositions, is  
18 that correct?
- 19 A. Yes.
- 20 Q. The list that is Exhibit "G" to that paragraph,  
21 were those all done on January 29, 1986?
- 22 A. Say that again.
- 23 Q. Okay. I am looking you see the reference to  
24 Exhibit "G" in Paragraph 18 first?
- 25 A. Right.

- 1 Q. I am looking at Exhibit "G", I believe it's  
2 Exhibit "G", and do you see the date at the top  
3 of the page?
- 4 A. All right.
- 5 Q. What is the date at the top of the page?
- 6 A. 29 January, 1987. Not '86.
- 7 Q. Okay. What notebook did this come from, Dr.  
8 Meng?
- 9 A. Here. (Indicating)
- 10 Q. And that's the page we just looked at a few  
11 minutes ago, page H50?
- 12 A. Yeah, H50.
- 13 Q. Was anybody else responsible for identifying  
14 compositions, or as is stated in Paragraph 18,  
15 list from samples of yttrium, barium, copper  
16 oxide compositions in the University of Houston  
17 group beside yourself at that time?
- 18 A. No. Basically Dr. Chu talked to us, and then we  
19 have to follow the previous experiments, so we  
20 decide a formula.
- 21 Q. Okay.
- 22 A. And then I ask one of my colleague's help.
- 23 Q. Okay. Now, you weren't focusing exclusively on  
24 the yttrium, barium compositions at that time,  
25 were you?

1 A. Yes. We started at that time.

2 Q. But on January 29 of that year, you were looking  
3 at lots of different possible combinations,  
4 weren't you?

5 A. Right.

6 Q. Is there anything on this page that is Exhibit  
7 "G" of your Declaration to indicate whether one  
8 type of composition would be investigated before  
9 another? I am sorry, let me rephrase that.  
10 That's really unclear.

11 There are at least three or four different  
12 types of compositions reflected, and by types I  
13 mean different elemental selections on this page  
14 that is Exhibit "G", correct?

15 A. Uh-huh.

16 Q. Do you have a memory as of -- do you have a  
17 recollection today whether when you made this  
18 list of samples, any particular elemental  
19 combination was expected to perform to exhibit a  
20 higher Tc than any other set?

21 A. As I remember, we concentration on Yb and Lu.

22 Q. Okay.

23 MR. COX: Yb, Lu?

24 A. Not B, I'm sorry. Yttrium and lutetium.

25 Q. Okay.

- 1 A. Not Yb, I'm sorry. I got to correct that. Not  
2 Yb, Y.
- 3 Q. Okay. There is some -- I wanted to double-check  
4 with you. There is some listings of binary  
5 compositions on this page, compositions numbered  
6 9 through 17, and 22 through 25. Is my reading  
7 of those correct, that those are binary?
- 8 A. No. I just left a couple off that.
- 9 Q. I see, okay.
- 10 A. I didn't write it down.
- 11 Q. Okay. So, those were also to be investigated at  
12 this time?
- 13 A. Right.
- 14 Q. Do you recall anything happening on January 29th,  
15 to focus the attention of your group on the  
16 yttrium, barium, copper oxides that are reflected  
17 on this Exhibit "G"?
- 18 A. I am not quite understand your question.
- 19 Q. Okay. On January 29th --
- 20 A. Right.
- 21 Q. -- of 1987, you had set forth compositions of  
22 several different types --
- 23 A. Right.
- 24 Q. -- of hopefully super-conducting copper oxide  
25 samples?

- 1 A. Right.
- 2 Q. On February 1, you prepared, and continuing on  
3 through February 2 and 3, you prepared a host of  
4 yttrium, barium, copper oxide samples, is that  
5 correct?
- 6 A. Uh-huh.
- 7 Q. You didn't prepare samples of any of the other  
8 types of compositions that are reflected on this  
9 Exhibit "G", did you, in that period of February  
10 1, 2, 3?
- 11 A. Uh-huh. Why?
- 12 Q. I guess my question is why?
- 13 A. We did not start to make the yttrium 1,2,3 before  
14 the 29th. The reason is, we do not have rare  
15 oxide in my lab. We placed order January 12,  
16 placed order for my lab, go to the chemistry  
17 department, and it took two week to get the  
18 material; and then by this period, we do the  
19 calculation weight of the materials, but we do  
20 not have the oxide, rare oxide in our lab, we  
21 place the order in the processing. So, during  
22 the periods of 15 to 29, we are continue work  
23 other system, lanthanum, strontium; and then the  
24 rare elements finally get there. I couldn't  
25 remember which day, but near to 28, 29, that

1 time. It took two week for us to receive the  
2 material. Okay, that's one reason we started  
3 highly concentration to do it, that is the number  
4 1 reason.

5 And number 2 reason is due to -- well, in  
6 fact we had do it in the daytime already in 29th  
7 before we got the material. So, we do all of the  
8 calculation, and prepare the sample, and the same  
9 day, 29, I think Dr. Chu get the phone call from  
10 Dr. Wu, and he said he got the material, have the  
11 higher transition about 77 something; and then  
12 further confer our thinking, the two resistant  
13 superconductor was about a liquid nitrogen  
14 temperature. So, therefore in the next day, he  
15 come to our lab in January 30th.

16 Q. I am sorry, Dr. Meng.

17 A. Dr. Wu. Dr. Wu, with his sample.

18 MR. COX: I think you have answered  
19 his question. You got another question,  
20 Counsel?

21 MR. KELBER: Wait a second. I don't  
22 want to get feisty, but the the witness was  
23 in the middle of her answer.

24 Q. (By Mr. Kelber) Was your answer to my question  
25 complete, Dr. Meng?

1 A. I would like to listen to my answer.

2

3

(The Reporter Read Back)

4

5 Q. (By Mr. Kelber) Dr. Meng, I apologize for the  
6 interruption.

7 A. That is okay.

8 Q. The reporter read back the question. The answer  
9 that you had given me that follows, is that  
10 answer complete?

11 You had described, and correct me if I am  
12 wrong, but you described obtaining the rare earth  
13 oxides?

14 A. Uh-huh.

15 Q. And not present in your lab. You had described  
16 the fact that you began the compositional  
17 analysis calculations before receiving the rare  
18 earth oxide. You had described a phone call that  
19 Dr. Chu received. You had described the -- you  
20 mentioned a visit by Dr. Wu to your laboratory.

21 A. Yes.

22 Q. Is your answer complete?

23 A. Yes. He has come to visit -- no, he bring his  
24 sample to confer is it superconducting or not in  
25 the January 30th.



1 Q. And did you in fact make that confirmation?

2 A. After he's arrive, so we know his sample is  
3 basically yttrium, barium copper oxide, so  
4 therefore we would first -- we want to further  
5 improve the sample quality he have, because his  
6 sample is not to zero resistance.<sup>at</sup> It's not to --  
7 what temperature, I couldn't remember.

8 Q. But did you test Dr. Wu's sample that you  
9 testified he brought?

10 MR. COX: Objection. Exceeds the  
11 scope of direct examination. I have been  
12 fairly liberal, but --

13 MR. KELBER: That's absolutely  
14 necessary.

15 MR. COX: I am not instructing her  
16 to not to answer. I'm preserving my  
17 record. There is nothing in her  
18 Declaration about a Dr. Wu visitation in  
19 the time period that we're speaking to now.

20 MR. KELBER: That's correct.

21 MR. COX: And so quite clearly, what  
22 is coming out now is in excess of the scope  
23 of the direct testimony.

24 MR. KELBER: Obviously I disagree  
25 just for the record. The question that

1                   prompted this testimony and follow on  
2                   question was why -- what is reflected in  
3                   the Declaration and nothing else, but I  
4                   will take, if it's suitable, a continuing  
5                   objection to anything further with regard  
6                   to that.

7                   MR. COX: I will listen to your  
8                   questions another one or two times and if  
9                   you continue to stay in this vein, then,  
10                  we'll take a runner just to preserve a  
11                  little time.

12        Q.        (By Mr. Kelber) Okay. Did you in fact test the  
13                  sample that Dr. Wu brought?

14                  MR. COX: Objection, exceeds the  
15                  scope of direct. You may answer subject to  
16                  the objection.

17        A.        I remember we did.

18        Q.        Do you recall what the results of that testing  
19                  were?

20                  MR. COX: Objection. Exceeds the  
21                  scope of direct.

22        A.        Not exactly but, my impression is --

23                  MR. COX: I caution the witness not  
24                  to guess.

25        Q.        Do you have records of that testing?

1 MR. COX: Objection. Exceeds the  
2 scope of direct, and I take it you're going  
3 to continue along this line?

4 MR. KELBER: The last question.

5 MR. COX: Okay.

6 Q. (By Mr. Kelber) Do you have records of the  
7 testing that was done at the University of  
8 Houston on, I believe you testified, January  
9 30th?

10 A. Uh-huh.

11 Q. On Dr. Wu's sample, or the sample -- I'm sorry.  
12 The sample that Dr. Wu brought with him.

13 MR. COX: Objection. Exceeds the  
14 scope of direct examination.

15 You can answer subject to that. I  
16 have not instructed you not to answer.

17 Q. You can answer.

18 A. I think we measure his sample.

19 Q. All right. I promised that was the last  
20 question, but I'm not sure that was responsive to  
21 the question. My question is, do you have at the  
22 University records of that testing?

23 MR. COX: Objection. Exceeds the  
24 scope of the direct.

25 A. That I am not quite sure.

1 Q. Okay. I am going to request production of any  
2 records that are available of that particular  
3 testing.

4 Thank you for your patience, Dr. Meng.

5 A. Thank you.

6 Q. Let me ask you to turn to Paragraph 20 of your  
7 Declaration, Dr. Meng.

8 A. Do you see -- I am sorry, I directed you to the  
9 wrong paragraph. Bear with me for a second.

10 It was Paragraph 19, I apologize, Dr. Meng.  
11 Do you see the very last two lines of that  
12 paragraph there is a reference to page H65 of  
13 Exhibit "H". Do you see that reference, Dr.  
14 Meng?

15 A. Uh-huh.

16 Q. I am going to ask you to turn to page H65, and  
17 you may wish to use Counsel's, your attorney's  
18 exhibit because for the record, I didn't find in  
19 the copy you have a page H65, so you may want to  
20 use the original, or your rendering of the  
21 original.

22 MR. COX: I see where you're going.

23 Q. Is there a H65 to the best --

24 MR. COX: It looks like a number got  
25 interpolated from 56 to 65.

1 MR. COX: There is an H56.

2 Q. Okay. Without regard to the calculation notebook  
3 for a minute, Dr. Meng, looking at the  
4 Declaration, is there an H65 of Exhibit "H"?

5 MR. COX: If you prefer the witness  
6 to respond, that's fine, but I think we  
7 could stipulate for the record that there  
8 appears to be no page to Exhibit 8 which  
9 exceeds an H number, the number H61.

10 MR. KELBER: I will accept that  
11 stimulation. Dr. Meng, you don't have to  
12 answer.

13 We are naturally, given that  
14 stipulation, going to object to the  
15 statements in Paragraph 19 that refer to  
16 H65.

17 MR. COX: Which would be the  
18 parenthetical page H65.

19 MR. KELBER: It really is the last  
20 sentence of Paragraph 19.

21 MR. COX: Fine. I mean I understand  
22 what you are saying. If there was any  
23 confusion on Counsel's part by reason of  
24 the typographical error, I can also  
25 represent for the record that the page H56

1 is the page which contains the Yb-102  
2 designation which this paragraph refers to.

3 Q. (By Mr. Kelber) Okay. Dr. Meng, let me ask you  
4 to stay with Exhibit "H", for a minute, of your  
5 Declaration, and if you'd look at the very first  
6 page of Exhibit "H". Do you see the circled  
7 acronym to the very left -- I'm sorry.

8 A. Which page?

9 Q. Very first page of Exhibit "H" has the date  
10 29-30, January 1987.

11 MR. COX: I've got a copy. I have  
12 dividers in mine. Maybe I can help you.

13 MR. KELBER: Please feel free to go  
14 either way. If you refer to use yours,  
15 that's fine.

16 Q. (By Mr. Kelber) Okay, there we are.

17 Do you see a horizontal line drawn just  
18 about the middle of the page?

19 A. Okay.

20 Q. And just underneath that on the left-hand side  
21 there is a circled LYb-1. Do you see that  
22 indication there that's in a circle?

23 A. Here?

24 Q. No, on the left-hand side of the page.

25 A. Okay.

- 1 Q. Is that your handwriting?
- 2 A. No.
- 3 Q. Whose handwriting is that?
- 4 A. As I told you, Wang.
- 5 Q. So, on more than one occasion he would write in  
6 your calculation notebook?
- 7 A. In that time he help me to do the calculation. I  
8 put the formula on and then he do the  
9 calculation.
- 10 Q. And the writing to the right-hand margin above  
11 the horizontal line, is that also your  
12 colleague's?
- 13 A. No, this my handwriting.
- 14 Q. That's your handwriting, okay.
- 15 Do you see the Paragraph 21 of your  
16 Declaration, which is W-1, and I suppose if you  
17 would include in your review also of Paragraph  
18 22.
- 19 Those results must have been exciting for  
20 you, is that correct?
- 21 A. Yes.
- 22 Q. Was Dr. Chu present for the testing that's  
23 reflected in Paragraph 21 and 2?
- 24 MR. COX: Present in Houston?
- 25 Q. I am sorry, present in Houston to witness the

1 testing?

2 A. I remember he does. I remember he does at the  
3 time. Probably, I just --

4 Q. Okay. Was a publication discussing these results  
5 ever authored by you and others? The results  
6 that are reflected in Paragraphs 21 and 22?

7 A. Uh-huh.

8 Q. Do you recall who the other authors of that  
9 publication were?

10 A. Yes. We have two paper. One paper was -- I  
11 think we had two paper. They all have our team  
12 member, and Dr. Wu's team member.

13 Q. Okay. Do you have any personal knowledge, now,  
14 nothing that you might have heard from somebody  
15 else, but any personal knowledge of whether  
16 anybody in the University of Houston group ever  
17 prepared a patent application directed to the  
18 results that are reflected in Paragraphs 21 and  
19 22?

20 A. I remember student --

21 MR. COX: Well, I'm going to object  
22 to the question, because it exceeds the  
23 scope of direct. There is nothing in her  
24 direct testimony about any patent  
25 application whatsoever.



1 I am not instructing the witness not  
2 to answer.

3 MR. KELBER: All right, sir.

4 A. I remember I had saw one patent application, but  
5 I'm not sure which was end of the '86, but I  
6 couldn't remember exactly.

7 Q. Okay. That was before these results were  
8 conducted, is that correct?

9 MR. COX: Same objection.

10 A. I couldn't remember.

11 Q. Did you ever suggest pursuing a patent  
12 application on the basis of these results?

13 MR. COX: Objection. Exceeds the  
14 scope of direct.

15 A. Not by myself.

16 Q. Let me focus on Paragraph 22. The sample of the  
17 composition Y sub 1.2 Ba sub 0.8 CuO sub 4. That  
18 particular composition was subjected to some  
19 additional testing at elevated -- at various  
20 pressures, is that correct?

21 A. Yes.

22 Q. Were any of the other yttrium, barium, copper  
23 oxide samples that you prepared in that time  
24 frame subjected to similar testing?

25 MR. COX: The time frame of --

- 1 Q. I'm sorry. I suppose to be fair, the February 1,  
2 2 and 3.
- 3 A. As I remember, maybe not because that's only one  
4 system. Running the pressure experiments take a  
5 long time.
- 6 Q. Why that particular composition?
- 7 A. We make the sample, and then this is composition.  
8 We reach the temperature as Paragraph  
9 twenty-first only describe it.
- 10 Q. I am sorry, Dr. Meng, I didn't understand your  
11 last answer.
- 12 A. In the Paragraph twenty-first, we already  
13 describe the result we have.
- 14 Q. Okay. I am sorry. Maybe I wasn't clear. Out of  
15 all of the yttrium, barium, copper oxide  
16 compositions that you prepared on February 1, 2  
17 and 3, why was only this particular formulation  
18 selected for testing at the various pressures  
19 indicated?
- 20 A. Because at that time this sample we had the  
21 result first come out.
- 22 Q. Okay. So, this one was the one that was prepared  
23 first and tested first?
- 24 A. Yes. Compared with other sample. Yes, that's  
25 the best sample at that time we had.

- 1 Q. That's the best sample at that time?
- 2 A. At that time, that day.
- 3 Q. Was there a correlation between pressure and  
4 electrical resistance versus temperature?
- 5 A. Yes, but the effect is very small. The  
6 transition temperature does not increase a lot.
- 7 Q. Now, I just want to make sure my understanding is  
8 correct. In Paragraph 6, you described testing  
9 of the lanthanum, barium, copper oxide system  
10 under pressure, and found an increase --  
11 unexpectedly higher transition temperature for  
12 that system?
- 13 A. Right.
- 14 Q. Is it correct, then, that the impact of pressure  
15 on the lanthanum, barium, copper oxide system was  
16 different than the impact of pressure on the  
17 yttrium, barium, copper oxide system?
- 18 A. Correct.
- 19 Q. Okay, thank you.
- 20 Focusing on Paragraph 26, based on data  
21 acquired on this particular type of sample, this  
22 particular composition, an upper critical field  
23 was determined. Why was it important to  
24 determine the upper critical field?
- 25 A. That's important to see. For the superconducting

1 material there are three criteria: One is  
2 transition temperature. Second one is the  
3 critical current density; and number 3, is  
4 critical magnetic field. Because, if this  
5 material in the future have any application, you  
6 have to certify these three criterias. Only a  
7 high temperature is not enough.

8 Q. Okay. One more series of questions. I really  
9 don't think they will take very long.

10 Let me ask you to turn, Dr. Meng, to the  
11 calculation notebook that is before you.

12 With the addition of the stenographic  
13 notebook that's before you, is that the only  
14 document or notebook in which laboratory records  
15 are kept by you?

16 A. I don't quite catch your question. You mean  
17 that's the only thing I have?

18 Q. In the period -- I'm sorry, I should have nailed  
19 it down. The period of mid December, 1986 --

20 A. Right.

21 Q. -- through February 3, 1987 --

22 A. Uh-huh.

23 Q. -- would you have kept notes of your own  
24 laboratory work in any other notebook besides the  
25 calculation notebook and the stenographic

- 1 notebook?
- 2 A. No.
- 3 Q. Do you still use a similar loose-leaf binder
- 4 notebook?
- 5 A. Yes.
- 6 Q. Is it possible to insert pages at any point in
- 7 this notebook? For instance, could you prepare a
- 8 page and then insert it at a different location?
- 9 A. Basically we would not do that, but you mean just
- 10 put in from page to page? Basically we would not
- 11 do that.
- 12 Q. But it is possible, right?
- 13 MR. COX: Mechanically possible?
- 14 Q. Mechanically possible.
- 15 The numbering that appears at the bottom
- 16 right-hand corner of each of these pages, did you
- 17 put that numbering in?
- 18 A. This number?
- 19 Q. Yeah, for instance, H48, H49?
- 20 A. No.
- 21 Q. Do you know who did?
- 22 A. Mr. Cox do that.
- 23 Q. Okay, I see. Is there any way for you to tell if
- 24 pages are missing from your notebook?
- 25 A. I remember if that's years ago I can tell, you're

- 1 missing one piece of paper, I can tell, because I  
2 know what I am doing and then I know all of the  
3 information in my mind.
- 4 Q. So, looking at that notebook now, you could tell  
5 if pages were now?
- 6 A. But now, after 8 years I'm not guarantee I can  
7 remember that.
- 8 Q. Okay.
- 9 A. But if at that year you asked me, sure, but now  
10 I'm not guarantee it.
- 11 Q. We may have covered this ground before and if we  
12 did, forgive me, but is it ever your custom to  
13 return to the notebook -- return to a notebook  
14 page after you have completed your entries in  
15 that and make additional entries on that page?
- 16 A. I don't quite catch what you mean.
- 17 Q. Okay. For instance, this page is dated 13  
18 January, 1987?
- 19 A. Right.
- 20 Q. Am I correct that this work would have been --  
21 this reflects work that was done on or about  
22 January 13th?
- 23 A. Right.
- 24 Q. Just using that page as an example, and not  
25 suggesting anything about this page in

1 particular --

2 A. Right.

3 Q. -- later on, was it consistent with your practice  
4 to come back and add additional information if  
5 you obtained it relevant to the work that's  
6 reflected there?

7 A. Not in the calculation book. I have another book  
8 with the result. Okay, that it might happen,  
9 because like if I make a sample today for 3  
10 sample, the result may not come out the same day,  
11 so it might happen, but not in the calculation  
12 book. Basically one calculation. Calculation as  
13 I do the calculation that day, but the result  
14 book you might have to depend on what kind of  
15 result come out first. It may happen.

16 Q. Okay. Let me ask you again to turn to page H49,  
17 which I just turned you away from.

18 Do you see how the date at the top of that  
19 page is 15 June, 1986, and then then it's  
20 scratched out and 1987?

21 A. Yes.

22 Q. And that was just a customary thing happens when  
23 you change the year?

24 A. Yes.

25 Q. See how that date is boxed in on that page, that

- 1 particular date? There's kind of an irregular  
2 box around that date?
- 3 A. Yeah.
- 4 Q. Was it customary for you to do that?
- 5 A. Sometime I did, sometime I don't. It is not  
6 randomly. I am not really keep records, so  
7 sometime I do that and sometime not. Some of the  
8 day I even forget to write a date. It happen.
- 9 Q. Do you see the entry, it begins with an open  
10 parenthesis, Y sub 0.6, Ea 0.4, close  
11 parenthesis, sub 2 CuO sub 4 written on that  
12 page?
- 13 A. Uh-huh.
- 14 Q. See how it's written in darker ink than the  
15 remaining compositions above and below it?
- 16 A. What do you mean?
- 17 Q. Does it appear to you that that writing that I  
18 have just referred to that appears in darker ink  
19 than the pages above -- than the writing above  
20 and below it?
- 21 A. I don't see that way, because also -- no, I don't  
22 think so. It depend -- it depend on how you  
23 write it in here. You can darker, too. I don't  
24 think so.
- 25 Q. So, that's Dr. Chu's writing?



1 A. No, no.

2 MR. COX: Darker, too.

3 Q. Oh, darker. Okay, great.

4 Do you see how that particular entry does  
5 not have an acronym, or a two letter alphabetical  
6 followed by a hyphen, followed by an Arabic  
7 number next to it?

8 A. Uh-huh.

9 Q. All of the other entries do, don't they?

10 A. Yes.

11 Q. Any reason for that?

12 A. I couldn't remember what the reason. Maybe I  
13 just missing. Possible. If I remember, that's  
14 two, that's three, SB 1 or -- I couldn't recall  
15 why.

16 Q. That wouldn't be SB 1, would it?

17 A. I don't know. I didn't write SB 1,2. This one  
18 is SB 2, that's SB 3. I don't know why I didn't  
19 write that. I couldn't remember.

20 Q. What is the meaning, if there is a meaning, what  
21 is the meaning of SB?

22 A. B is barium. S -- I couldn't remember why we  
23 label S in the beginning. I couldn't remember  
24 why label an S. Basically we according the  
25 element, like Yttrium with Y, and strontium S,

1 but I couldn't recall why I put X, okay?

2 Q. In fact, in YS, S stood for strontium, didn't it?

3 A. Yes. But X in second syllable is strontium, but  
4 this one put a number one is not strontium.

5 I have to say at the beginning I didn't  
6 really pay it a lot of attention about, you know,  
7 keep this thing and really in a good system.

8 Q. But on the same page on H49 when you were  
9 referring to yttrium strontium compositions, you  
10 gave them the designations YS, isn't that  
11 correct?

12 A. Right.

13 Q. And two yttrium barium compositions were given  
14 designations SB and the other one was not given  
15 any designation?

16 A. Yes.

17 MR. KELBER: Can we go off the  
18 record for a second?

19

20 (Discussion off the Record)

21

22 MR. KELBER: We are going to request  
23 at this time that the original of the  
24 document from the calculation notebook that  
25 bears the legend in the right-hand bottom

1 corner, H49 be forwarded to the Board of  
2 Patent Appeals and Interferences in  
3 connection with this proceeding prior to or  
4 consistent with the submission of the  
5 record.

6 And we're almost done with this part  
7 of the thing.

8 Q. (By Mr. Kelber) Focusing again on the calculation  
9 notebook, and consistent with the time frame that  
10 you were testing the yttrium, barium, copper  
11 oxide samples discussed, you also focused your  
12 attention on lanthanum, mercury, copper oxide  
13 systems, didn't you?

14 A. We do some sampling, not really -- I think we  
15 only mix few of the sample, but I don't think we  
16 really concentration on that.

17 Q. Okay. Well, you tested those samples, didn't  
18 you?

19 MR. COX: Since you're going with a  
20 prior question, during February 1 through  
21 3?

22 MR. KELBER: No, it's synchronous,  
23 but it also extends beyond February 6.

24 A. When?

25 MR. COX: It extends beyond February

1 6?

2 MR. KELBER: Yeah. If you could let  
3 me take a look at that real quick, we  
4 should be able to find it or forget it.

5 THE WITNESS: I believe this sample  
6 is --

7 MR. COX: He hasn't asked you a  
8 question.

9 MR. KELBER: It's my obligation to  
10 find it.

11 Here it is.

12 Q. (By Mr. Kelber) I apologize. It's a little bit  
13 after that date. It's beginning apparently with  
14 the page dated February 11, 1987. It bears the  
15 designation in the lower right-hand corner H109.

16 MR. COX: Five.

17 Q. Oh, I'm sorry, H105. No wonder I was having  
18 problems.

19 It seems to reflect compositional values  
20 for lanthanum, mercury, copper oxides, is that  
21 correct?

22 A. Right.

23 MR. COX: I object.

24 MR. KELBER: Go ahead. I'll take  
25 your objection.

1 MR. COX: This exceeds the scope of  
2 direct examination. It's also irrelevant,  
3 since it pertains to a time which is  
4 subsequent to the filing date of the Chu  
5 involved application, and hence can have no  
6 relevance to the issues presented in this  
7 matter.

8 MR. KELBER: Let me suggest that it  
9 may or may not have relevance to the issue  
10 of derivation in light of testimony  
11 submitted by the party Wu, and take your  
12 continuing objection. It should only take  
13 two or three questions to determine if  
14 there is any relevance.

15 MR. COX: Still exceeds the scope of  
16 direct, so I'll take a continuing objection  
17 on those bases.

18 Q. (By Mr. Kelber) Okay. What was the reason for  
19 pursuing lanthanum, mercury compositions?

20 A. Well, so far is really nobody can predict what  
21 kind of material or what kind of formula would be  
22 at high transition temperature, unfortunately.  
23 If some theoretical people could point out the  
24 direction, that would be great, but so far is  
25 not; so therefore, we base it on some kind of

1 principle. We look for different element and  
2 different formula.

3 We do have some kind of rule to follow, but  
4 not exactly know which one this one definitely  
5 can tell that that one definitely have high  
6 temperature. I don't think we can predict it at  
7 that time.

8 Q. Subject to you your counsel's continuing  
9 objection, was there any reason for selecting  
10 mercury, in particular, as element in that  
11 composition?

12 A. I couldn't recall. I think that one reason is  
13 mercury can be -- have five valences -- one  
14 valence state, so they may change it to copper  
15 valence state. Maybe that's one of the reasons.  
16 I couldn't recall very clearly. I'm not quite  
17 sure. Possible that's the reason.

18 Q. Okay, one last question in this line, again,  
19 subject to your objection.

20 Is the atomic radius of mercury, if you  
21 know, smaller or greater than the atomic radius  
22 of barium?

23 A. Yes. It's great.

24 Q. Thank you. I've got no more questions on that  
25 line, and I don't think I have much left at all.

1 MR. KELBER: Okay. I don't have  
2 anymore questions for you Dr. Meng at this  
3 time. I do want to stay on the record with  
4 one thing. I really appreciate your  
5 patience.

6 This is really just for the record.  
7 We requested some documents and your  
8 counsel was kind enough to provide us with  
9 certain documents. Would it be  
10 sufficient -- well, maybe we should go down  
11 one by one. You mentioned, Dr. Meng, a  
12 test, a book, a laboratory notebook in  
13 which you might keep test results besides  
14 this calculation notebook.

15 MR. COX: Excuse me. I thought you  
16 had rested your questions.

17 MR. KELBER: All right. We had  
18 requested a -- we had requested production  
19 of any and all documents reflecting,  
20 relating to, or prepared in light of the  
21 testing and activities described in  
22 Paragraph 12 of the Declaration. Without  
23 asking any questions, I believe it's -- it  
24 is my understanding that Dr. Meng, during  
25 testimony, referred to a laboratory

1 notebook that may not have been produced,  
2 and I will renew my request for production  
3 of anything relevant to Paragraph 12 and  
4 that laboratory notebook at this time.

5 MR. COX: If Counsel would go off  
6 record a second, I can clear that one up.

7 MR. KELBER: Okay.

8

9 (Discussion off the Record)

10

11 MR. KELBER: We, for the record,  
12 withdraw the request for production of any  
13 additional laboratory test notebook that  
14 might be in possession of the Party Chu.

15 Once again, I thank you for your  
16 patience. I have nothing further at this  
17 time.

18 THE WITNESS: Thank you.

19 MR. COX: Let's take a little break  
20 and let me collect my thoughts to see  
21 whether I have any redirect. I think it's  
22 likely that I do not.

23

24 (Recess Taken)

25



1 MR. COX: I have no questions on  
2 redirect, but just to make sure we do our  
3 housekeeping for the record, we can stay on  
4 the record. Only two exhibits, I believe,  
5 have been made a part of this cross  
6 examining deposition, that's C-1 the Notice  
7 of Examination of the Witness, and W-1,  
8 which was the Declaration of Ruling Meng  
9 that was earlier filed.

10 MR. KELBER: That was my  
11 understanding.

12 MR. COX: Okay. And in terms of  
13 what has been requested, although this is  
14 not a response to the request, I just want  
15 to make sure I have that in a listing, my  
16 notes are always terrible. I understand  
17 that you have a requested copies of records  
18 of testing of materials that may have been  
19 brought by Wu to the University of Houston  
20 on January 30, '87?

21 MR. KELBER: That is correct.

22 MR. COX: Okay, that is a request.  
23 And I believe that request was reiterated  
24 later --

25 MR. KELBER: Yes.

1 MR. COX: -- toward the close of the  
2 deposition, so it's still just but one  
3 request to this point. And then there was,  
4 of course, the request for forwarding the  
5 original of H49 to the Board prior to, or  
6 with submission of the record, so that we  
7 have only two outstanding requests.

8 MR. KELBER: That is my  
9 understanding yes.

10 MR. COX: And just for the purposes  
11 of the record, H49 would correspond to  
12 Exhibit "F" of the Ruling Meng Declaration,  
13 although the designator H49 does not appear  
14 on that copy because it's overlaid with the  
15 Chu Exhibit "F", Wu et al, versus Chu  
16 Interference Number 102447.

17 MR. KELBER: Correct.

18 MR. COX: Okay. That is all. I  
19 don't know if you have got anything.

20 MR. KELBER: The rules require that  
21 Dr. Meng review the Declaration, sign it in  
22 front of a notary, or a Declaration, return  
23 it to the reporter and whatnot. I have no  
24 preference. If you would prefer to forward  
25 it to the Board yourself, that's fine.

1 MR. COX: Okay. Of course, we do  
2 want Dr. Meng to review it.

3 MR. KELBER: Oh, absolutely, and I  
4 suspect there will be an errata sheet.

5 MR. COX: Right, I imagine. Depends  
6 on how good Larry's ear attuned to the  
7 accent, but can it be signature before any  
8 notary?

9 MR. KELBER: Yes. In fact, if it is  
10 a problem, I would be glad to waive the  
11 notary requirement. I don't see that is  
12 essential.

13 MR. COX: Because the Rules allow us  
14 to do it as a declaration or under a notary  
15 acknowledgement, I will be happy to forward  
16 it.

17 MR. KELBER: Okay.

18 MR. COX: Since this is the cross  
19 examination of Ruling Meng of the direct  
20 testimony offered by her Declaration, then,  
21 this transcript of this proceeding is part  
22 and parcel of the Declaration.

23 MR. KELBER: That would be my  
24 understanding, yes.

25 MR. COX: Are we finished?

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MR. KELBER: I am finished. That's  
it for me.

MR. COX: You can close the record.

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Ruling Meng

THE STATE OF TEXAS

SUBSCRIBED AND SWORN TO BEFORE ME, THE  
UNDERSIGNED AUTHORITY, on this the \_\_\_\_ day of  
\_\_\_\_\_, 1993.

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Notary Public i and for  
The State of Texas

1 STATE OF TEXAS:

2 I, Larry Carroll, a Certified Shorthand  
3 Reporter and Notary Public in the State of Texas, do  
4 hereby certify that the facts as stated by me in the  
5 caption hereto are true, that the above and foregoing  
6 answers of the witness, RULING MENG, to the  
7 interrogatories as indicated were made before me by the  
8 said witness after being first duly sworn to testify to  
9 the truth, and same were reduced to typewriting under my  
10 direction; that the above and foregoing deposition as  
11 set forth in typewriting is a full, true and correct  
12 transcript of the proceedings had at the time of taking  
13 said deposition; that the deposition was taken at the  
14 offices of Pravel, Hewitt, Kimball & Krieger, 1177 West  
15 Loop South, Houston, Texas, in the presence of Charles  
16 M. Cox and Steven B. Kelber, attorneys for the  
17 respective parties hereto.

18 I further certify that I am not, in any  
19 capacity, a regular employee of the party in whose  
20 behalf this deposition is taken, nor in the regular  
21 employ of its attorney, and that I am not interested in  
22 the cause, nor of kin or counsel to either of the  
23 parties.

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GIVEN under my hand and seal of office on  
this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_\_.

\_\_\_\_\_  
Larry Carroll, CSR and Notary Public  
for the State of Texas

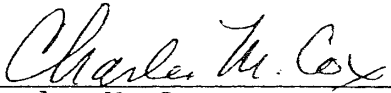






CERTIFICATE UNDER 35 CFR 1.8 (a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on April 16, 1993.

  
Charles M. Cox  
Registration No. 29,057

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing NOTICE OF EXAMINATION OF WITNESS and CERTIFICATE OF CONFERENCE UNDER 37 C.F.R. § 1.673(g) was served on counsel of record for the party Wu et al. via first class mail on April 16, 1993 to the following:

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