2 CONCERNS MAKE SAME DISCOVERY

G.E. and I.B.M. Announce Laser Feat Same Day

By ROBERT C. TOTH

In a striking coincidence, two companies announced independently yesterday the same scientific achievement, which, they said, promises to open the door to communication by light waves.

Both had raced with indus- of making a "laser" amplification device that could be operated by a simple electrical current rather than by an inefficient beam of intense light.

Compounding the coincidence was the fact that a third group of researchers, at a university laboratory, had reached similar success a week or less after one company.

It had been members of this university team who first reported the basic observation that intensified the technological race. In fact, one company feared the university team, not the other company, might win.

General Electric Research Laboratories announced that, for the "first time," its scientists had used an electric current to "pump" a semiconductor, a transistor-like device, to get it to emit coherent, or "in-step," light waves.

Dr. Robert N. Hall and four associates reported their accomplishment in the issue of the Physical Review Letters published today.

Both 'For First Time'

International Business Machines Corporation announced at a news conference yesterday that, "for the first time," its scientists had "succeeded in operating a new laser, using a semiconductor diode, that is powered directly by an electrical current rather than by an external light source."

Dr. Marshall I. Nathan and four associates reported their success in the issue of the Applied Physics Letter, also published today.

I.B.M. officials said they did not know of the G.E. announcement until invitations to the news conference had been telegraphed Monday. They said the devices were similar, "if not identical."

Both scientific journals are published by the American Institute of Physics. They have a rule that research reported previously in other journals or the general press will not be accepted for their pages. The announcements by the companies thus coincided with publication of the journals.

Credit for the achievement usually goes to the first published report. It will now depend on the date the reports were received by the journals.

G.E. said its report was dated Sept. 24. I.B.M. said its report was dated Oct. 4, but that its researchers had been working in the field for a year or more.

Beyond honors, patent rights may be involved in the incident. The competitive aspect of the development was apparent in a simultaneous announcement by G.E. that it would market experimental "laser" devices of this type in 30 days for $1,300.

Two men at Lincoln Laboratory of Massachusetts Institute of Technology, Robert J. Keyes and Theodore M. Quist, are credited with having reported first, on July 9, that a semiconductor diode would emit infrared light when an electric current of great energy was injected into it.

The light from the experimental diode, which was made of gallium arsenide, was incoherent. This means that it could not be varied, or "modulated," to carry information signals like those impressed on radio waves.

In response to a query to the laboratory, a spokesman said the two researchers there, along with several associates, had succeeded in making the light coherent. Their work is to be published soon in the Applied Physics Letters, he said.

He emphasized, however, that the Lincoln team was not claiming priority. G.E. achieved success "a couple days or a week" before the M.I.T. group, he said.

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