

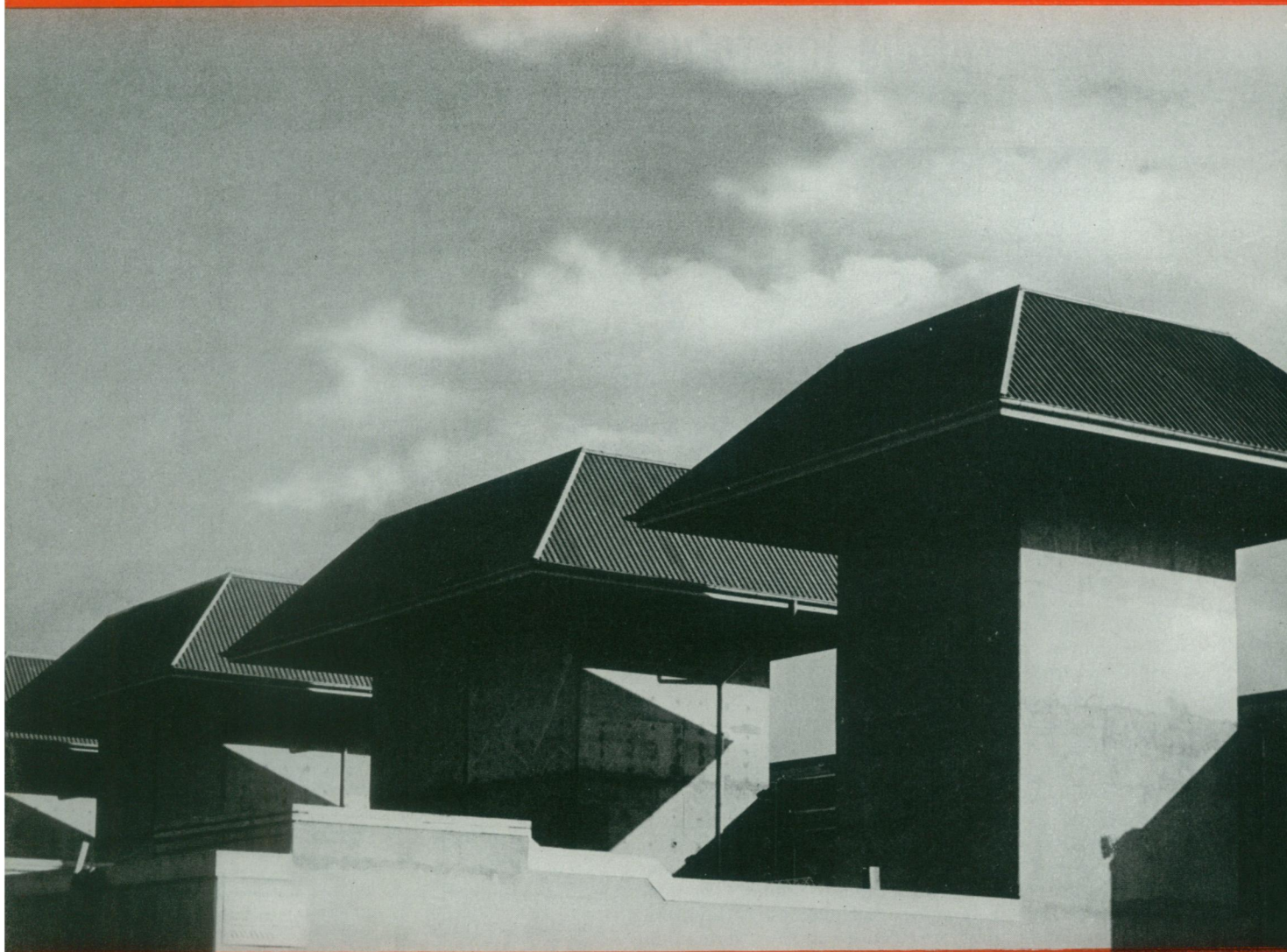
15¢

April 5, 1952

SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Muffling Jet Sounds

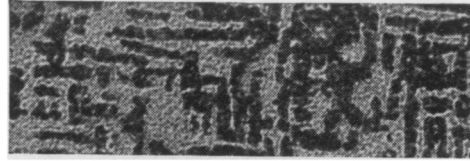
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A SCIENCE SERVICE PUBLICATION

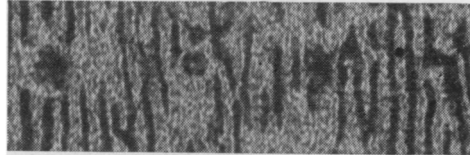
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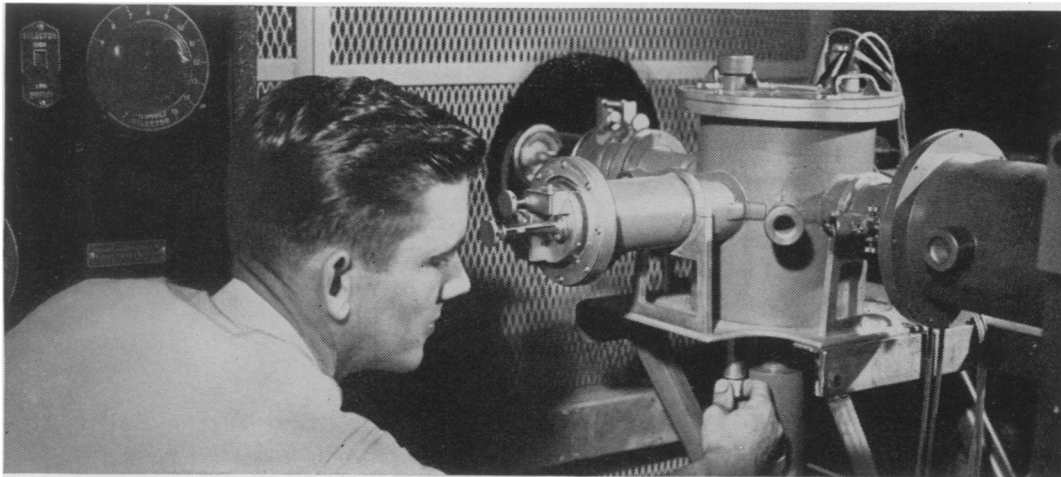
Electrons probe the future



1 Electron micrograph of an alloy of aluminum, nickel, cobalt and iron. Magnification 20,000 diameters.



2 Cooled from high temperature in a magnetic field, the alloy becomes a powerful permanent magnet. Note changed structure. Black bars reveal formation of precipitate parallel to the applied field. Each bar is a permanent magnet.



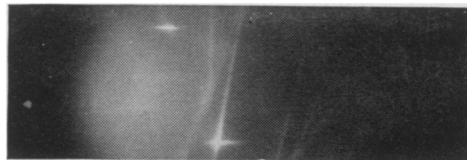
IN 1927, Bell Laboratories physicists demonstrated that moving electrons behave like light waves, and thus launched the new science of electron optics.

Now, through the electron beams of the electron microscope and electron diffraction camera, scientists learn crucial details about the properties of metals far beyond the reach of optical microscopes or chemical analysis.

At the Laboratories, electron beams have revealed the minute formations which produce the vigor of the permanent magnets used in telephone ringers and magnetron tubes for radar. The same techniques help show what makes an alloy hard, a cathode emit more electrons and how germanium must be processed to make good transistors.

This is the kind of research which digs deep *inside* materials to discover how they can be made better for your telephone . . . and for defense.

3 A Bell scientist adjusts electron diffraction camera. Electrons are projected on the specimen at glancing angles. They rebound in patterns which tell the arrangement of the atoms . . . help show how telephone materials can be improved.



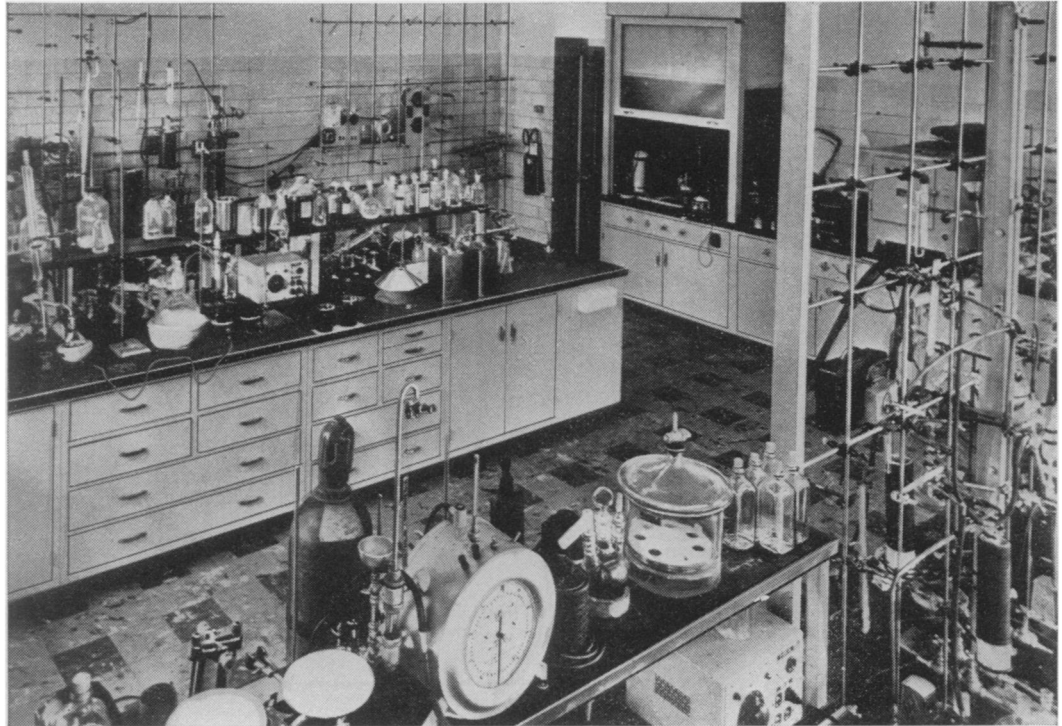
4 Diffraction pattern of polished germanium reveals minute impurities which would degrade the performance of a transistor.



Improving telephone service for America provides careers for creative men in scientific and technical fields.

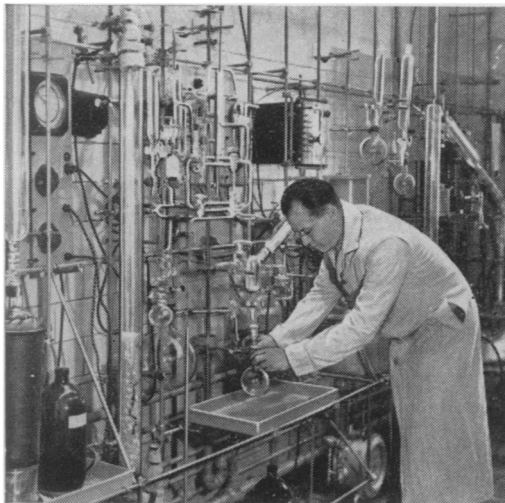
**BELL
TELEPHONE
LABORATORIES**

These Great Laboratory

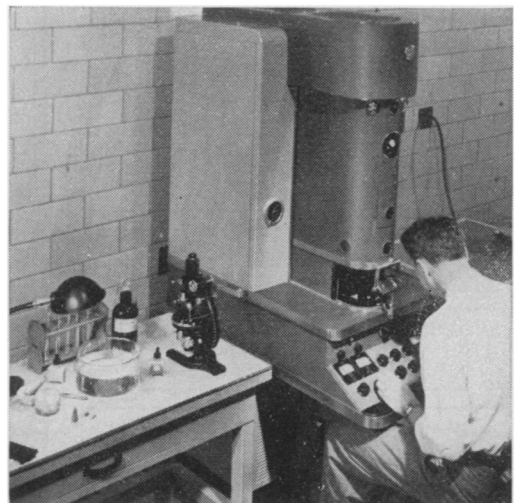


PETROCHEMICALS offer independent inventors great opportunity. Such synthetics as Nylon, Vinylite, Neolite are already indispensable to our expand-

ing economy—and new ideas in this area are at a premium today. If you have such an idea, the Sinclair Plan may help you develop it.



UNDER THE SINCLAIR PLAN, chemistry laboratories like these are now open to independent inventors.



ELECTRON MICROSCOPE, capable of magnifying 100,000 times, is typical of the equipment available.

Facilities Are Open to You

Many inventive people have responded to the Sinclair Plan's offer of laboratory facilities—to others who wish to do so, a suggestion: There is promise and profit in oil-based synthetics.

EIGHT months ago, Sinclair turned over a part of its great laboratories at Harvey, Illinois, to independent inventors who had promising ideas in the field of petroleum products but who did not have the facilities needed to develop or prove out their ideas.

To date nearly 5,000 people have submitted ideas to the laboratories, and the Plan is recognized as a valuable service to independent inventors. As a result we have made the Sinclair Plan part and parcel of the long-range operation of our company.

There may be inventive people interested in this Plan but wondering what sort of ideas or what areas would be profitable to explore. *To those people we suggest the field of petrochemicals. Such things as plastics, synthetics and new materials made from petroleum offer great opportunities for invention and reward.*

If you have an idea of this sort—or in the general area of petroleum products or applications—you are invited to submit it to the Sinclair Research Laboratories. In your own interest,

each idea must first be protected by a patent application or a patent.

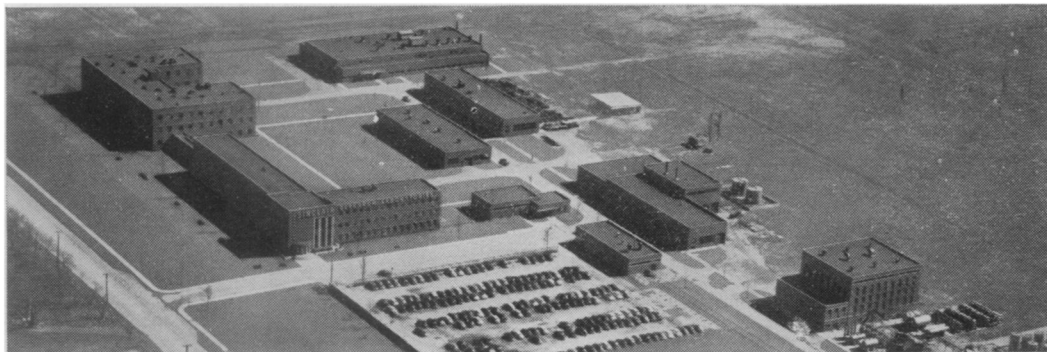
The inventor's idea remains his own property

If the laboratories select your idea, they will make a very simple arrangement with you: In return for the laboratories' work, Sinclair will receive the privilege of using the idea for its own companies, free from royalties.

This agreement in no way hinders the inventor from selling his idea to any of the hundreds of other oil companies for whatever he can get. Sinclair has *no control* over the inventor's sale of his idea to others, and has *no participation* in any of the inventor's profits.

HOW TO PARTICIPATE: Instructions are contained in an Inventor's Booklet available on request. Write to: W. M. Flowers, Executive Vice-President, Sinclair Research Laboratories, Inc., 600 Fifth Avenue, New York 20, N. Y.

IMPORTANT: *Please do not send in any ideas until you have sent for and received the instructions.*



SINCLAIR RESEARCH LABORATORIES—nine buildings containing the most modern testing equipment known—have contributed many of today's most important

developments in petroleum. Under the Sinclair Plan, part of these laboratories is available to work on the promising ideas of independent inventors.

SINCLAIR—for Progress