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THE WHITE HOUSE

Office of the Press Secretary

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The President's Superconductivity Initiative

Fact Sheet

The President has announced an eleven-point initiative to promote further work in the field of superconductivity and ensure U.S. readiness in commercializing technologies resulting from recent and anticipated scientific advances.

The U.S. has been a leader for years in the field of superconductivity -- the phenomenon of conducting electricity without resistance. U.S. private and Government researchers have also been at the forefront of recent laboratory discoveries allowing superconductivity to occur at higher temperatures and with greater current-carrying capacity than was previously possible.

The Federal Government has played a key role in these developments through the funding of basic research. The National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA) both provided funding for Dr. Paul Chu at the University of Houston in his landmark efforts in raising the temperature at which superconductivity occurs. In addition, the Department of Energy (DOE), which is the principal Federal supporter in the field of superconductivity, has been a leader in the search for the mechanism that produces high-temperature superconductivity and in research into the practical uses of these new materials. The Federal Government is currently spending approximately $55 million in superconductivity research, with more than one-half of that reallocated within the last six months.

The President's initiative reflects his belief that it is critical that the U.S. translate our leadership in science into leadership in commerce. While the U.S. private sector must take the lead, the Administration is taking important actions to facilitate and speed the process, including increasing funding for basic research and removing impediments to procompetitive collaboration on generic research and production and to the swift transfer of technology and technical information from the Government to the private sector.

The President's Superconductivity Initiative has three objectives:

1. Promoting greater cooperation among the Federal Government, academia, and U.S. industry in the basic and enabling research that is necessary to continue scientific breakthroughs in superconductivity;

2. Enabling the U.S. private sector to convert more rapidly scientific advances into new and improved products and processes; and

3. Better protecting the intellectual property rights of scientists, engineers, and businessmen working in superconductivity.

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The Superconductivity Initiative includes both legislative and administrative proposals. The former will be forwarded in a single bill. The major components of the Initiative are:

Legislative

1. Amending the National Cooperative Research Act (NCRA) to expand the concept of a permissible joint venture to include some types of joint production ventures. This is a particularly important step that would ease the risk of antitrust litigation perceived by U.S. businesses that could otherwise benefit from procompetitive joint ventures. If enacted, it could benefit not just developments using superconductivity, but other high technology products as well.

2. Amending U.S. patent laws to increase protection for manufacturing process patents. This would enable U.S. owners of process patents to obtain damages for infringement where products made with those processes are imported into the U.S.

3. Authorizing Federal agencies to withhold from release under the Freedom of Information Act (FOIA) commercially valuable scientific and technical information generated in Government owned and operated laboratories that, if released, will harm U.S. economic competitiveness.

Administrative

4. Establishing a "Wise Men" Advisory Group on Superconductivity under the auspices of the White House Science Council. This would be a small group of three to five people from industry and academia that would advise the Administration on research and commercialization policies.

5. Establishing a number of "Superconductivity Research Centers" (SRCs) and other similar groups that would: (1) conduct important basic research in superconductivity; and (2) serve as repositories of information to be disseminated throughout the scientific community.

   a. The Department of Energy will establish three SRCs, as well as a computer data base:

      -- Center for Superconductivity Applications at the Argonne National Laboratory;

      -- Center for Thin Film Applications at the Lawrence Berkeley Laboratory;

      -- Center for Basic Scientific Information at the Ames Laboratory; and

      -- Computer Data Base on Superconductivity at the DOE Office of Scientific & Technology Information.

   b. The Department of Commerce (DOC) will establish a Superconductivity Center at the National Bureau of Standards (NBS) laboratory in Boulder, Colorado. The center will focus on electronic applications of high temperature superconductivity.

   c. The National Aeronautics and Space Administration (NASA) is establishing a coordinating group on superconductivity activities at its office of Aeronautics and Space Technology.

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d. The National Science Foundation (NSF) will augment its support for research in high temperature superconductivity programs at three of its materials research laboratories. In addition, NSF is initiating a series of "quick start" grants for research into processing superconducting materials into useful forms including wires, rods, tubes, films, and ribbons.

e. The Department of Defense is developing a multi-year plan to ensure use of superconductivity technologies in military systems as soon as possible. DoD will spend nearly $150 million over three years.

DoD will build upon its long experience in superconductivity R&D to systematically: define the engineering parameters for high-temperature superconducting materials; develop the required processing and manufacturing capabilities; and accomplish the necessary development, engineering, and operational prototype testing of superconductors.

Small scale applications with commercial spin-off potential include sensors and electronics. Potential large-scale applications include compact, high-efficiency electric ship drive; electrical energy storage; pulsed power systems; and free electron lasers.

6. Urging all Federal agencies to implement quickly the steps outlined in Executive Order 12591 designed to: (1) transfer technology developed in Federal laboratories into the private sector; and (2) encourage Federal, university, and industry cooperation in research. The White House Science Advisor will report to the President by December 1, 1987 on progress in implementing the Executive Order, particularly with regards to superconductivity.

7. Directing the Patent and Trademark Office to accelerate the processing of patent applications and adjudication of disputes involving superconductivity technologies when requested by the applicants to do so.

8. Directing the NBS to accelerate its efforts to develop and coordinate common standards (e.g. measurement methods, standard reference materials, and supporting technical data) in the U.S. and internationally for superconductors and related devices.

9. Encouraging Federal agencies to continue to reallocate FY 1987 funds into superconductivity basic research, applied research in enabling technologies, and prototype development. Agencies are directed to place a high priority for this area in FY 1988 funding and FY 1989 planning.

10. Requesting that DoD accelerate prototype work in sensor, electronic, and superconducting magnet-based military applications and that the Department of Commerce accelerate development of prototype devices in detection and measurement of weak magnetic fields.

11. Taking advantage of the opportunity presented by the current negotiations for renewing the U.S. - Japan Agreement on Science and Technology to seek reciprocal U.S. opportunities to participate in Japanese government supported research and development, including superconductivity.

In April, the President issued Executive Order 12591 Facilitating Access to Science and Technology directed at encouraging increased commercialization of the U.S. science and technology enterprise.

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