NIST Names 5 Focused Programs for ATP Funding

The Commerce Department's National Institute of Standards and Technology has named five R&D areas for industry development through the department's Advanced Technology Program—healthcare information infrastructure, DNA analysis technologies, manufacturing of composite structures (see related article in this section), component-based software, and CIM for electronics. Over the next five years, NIST plans to channel $745 million, leveraged with an equal investment by industry, into these areas. Actual funding for FY 1995 and beyond, of course, depends on future appropriations for the ATP, but the Administration plans to significantly boost federal spending to support technologies it considers cutting-edge.

The five focused program areas were selected from 550 white papers submitted by industry and evaluated against the following criteria: (1) potential for U.S. economic benefit, (2) strength of the technical ideas, (3) evidence of strong industry commitment, and (4) the opportunity for ATP funds to make a significant difference. According to NIST Director Arati Prabhakar, the areas are also ones that most people don't think industry can develop with its own investments.

Program recommendations are still being evaluated, and NIST representatives said additional program suggestions are welcome at any time. NIST plans to announce as many as six additional focused programs this November, and as many as two dozen over the next few years.

For information about upcoming general competitions, ongoing focused program competitions, and free public meetings, or to obtain a proposal preparation kit, contact: Advanced Technology Program, Room A430, Administration Building (Bldg. 101), National Institute of Standards and Technology, Gaithersburg, MD 20899-0001. Phone: 1 (800) ATP-FUND. Fax (301) 926-9524. E-mail: atp@micf.nist.gov.

5 Technologies Selected for Focused Support Under ATP

- Tools for DNA Diagnostics—a five-year, $145 million program to develop compact, low-cost, automated DNA technologies and equipment to enable fast, inexpensive detection and diagnosis of human, animal, and plant diseases.
- Information Infrastructure for Healthcare—a five-year, $185 million program to develop critical information infrastructure technologies to enable enhanced, more fully integrated medical information systems across the healthcare industry, greatly reducing costs and errors in handling medical information.
- Manufacturing Composite Structures—a five-year, $160 million program to reduce the high initial costs of using advanced composite materials, traditionally found only in military and sports applications, to enable the use of the materials in large-scale commercial applications such as bridges and automobiles.
- Component-Based Software—a five-year, $150 million program to develop the technologies necessary to enable systematically reusable software components, that is, small, carefully engineered software elements suitable for automated assembly in a broad array of applications.
- Computer-Integrated Manufacturing for Electronics—a five year, $105 million program to develop a flexible, software- based framework needed to promote greater manufacturability, productivity and product variety in the electronics industry, allowing U.S. firms to more easily scale up and reconfigure their manufacturing operations.

BES Solicits Proposals for University-Industry Research Grants

The Department of Energy's Office of Basic Energy Sciences (BES) is soliciting proposals for its collaborative university-industry grant research program. The program is intended to support university investigators to carry out precompetitive scientific or engineering research that is commensurate with academic thesis requirements and that is also of industrial importance.

Collaboration can take the form of personnel interchanges, such as university personnel carrying out a portion of their research at an industrial site, or other significant forms of interaction. A letter of intent from the industrial collaborator that explains the collaborator's role in the research and how the research is important to that industry should be a part of all proposals.

Proposals can be submitted throughout the year, but they must be received by BES at least nine months before the proposed start date of the research.

A report detailing the kinds of programs funded for fiscal year 1993 is available by calling the Division of Materials Sciences at (301) 903-3427. A grant application guide is available by calling the same number or by contacting: Acquisitions and Assistance Management Division, U.S. Department of Energy, Office of Energy Research, ER-64/GTN, Washington, DC 20585. Phone (301) 903- 4335.

$160 Million Slated for ATP Focused Program on Manufacturing of Polymer-Matrix Composites

NIST's recently announced five-year ATP on the manufacturing of polymer-matrix composites targets the application of both advanced and engineered composites in large structures used in commercial transportation vehicles, in infrastructure (e.g., bridges) construction and renewal, and in deep-water (>600 m) oil production platforms. Advanced composites include carbon, aramid, and high-strength glass fibers; engineered composites include continuous fibers, chopped strands, fabric, and other forms. Thermoset and thermoplastic resin systems are also considered to be within the scope of the program.

First-year ATP funding anticipated for this competition, the first of three solicitations planned for the focused program on the manufacturing of polymer-matrix composites, is approximately $25 million, with an estimated $160 million projected for the full five-year program.

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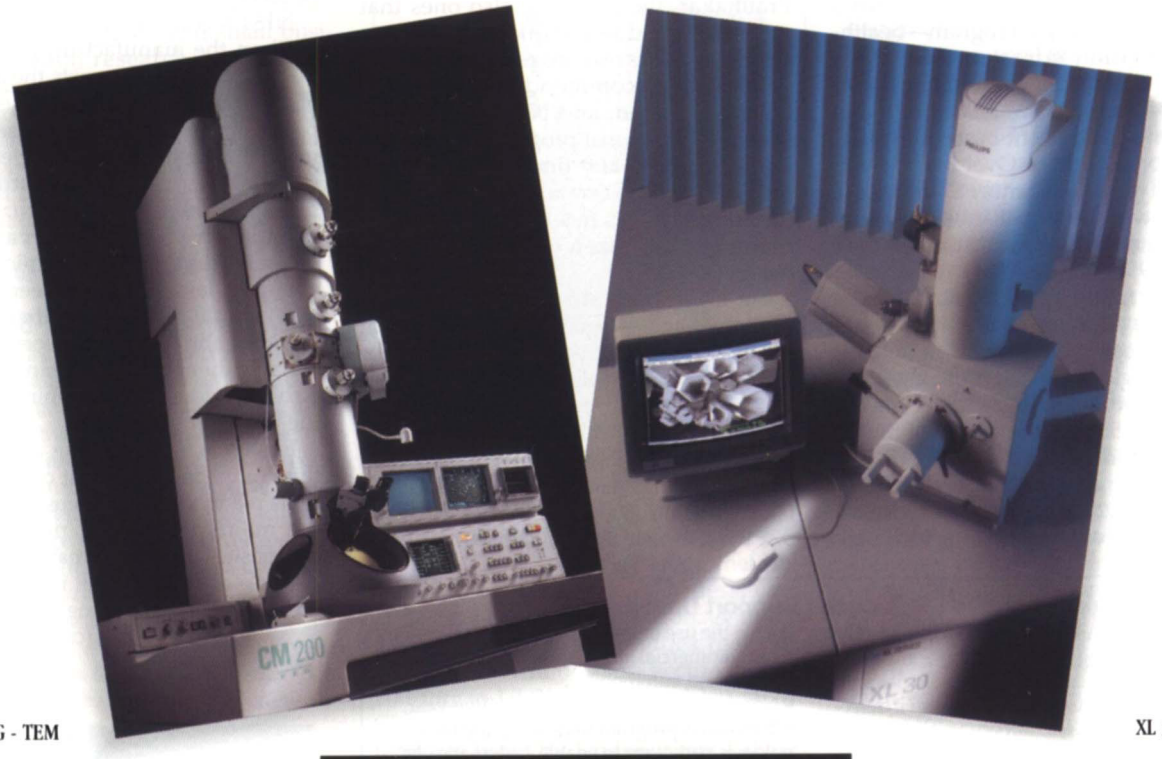

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The first two solicitations are expected to attract mostly generic technical developments in the three areas cited, with some technical demonstrations in low-cost manufacturing. The final solicitation will emphasize commercialization paths and cost competitiveness.

This solicitation (94-02) spotlights high-risk, generic research and development projects that specifically and directly relate to commercial opportunities and to the business objectives identified in the solicitation. Proposals should focus on

- Manufacturing—commercial processes that enable low-cost, large-scale, complex, modular, or continuous shape production in either fixed or on-site facilities;
- Theoretical approaches to performance prediction—integrated design simulations that accurately address life prediction, failure modes, and manufacturing process variables so that it is easier to choose the right materials; and
- Sensor technology—both intrinsic and extrinsic, for monitoring manufacturing processes and structures in order to reduce risks resulting from variability in the materials and from service loading in often harsh environments.

The goal is to overcome barriers to rapidly introducing the composites into promising commercial markets. These barriers have been identified as (1) the initial cost of the manufactured parts (also cited as the most significant barrier); (2) complexity in the design and performance qualification of these materials; and (3) risks associated with using polymer-matrix composites.

Potential commercial products for consideration can be:

- Surface transportation vehicles, such as automobiles, buses, electric vehicles and rail carriers;
- Bridges and marine structures; and
- Production risers, tethers, subsea flowlines, and platform structures for deepwater oil production tension leg platforms.

Business objectives consist of demonstrating specified commercial benchmarks with enough cost and performance detail to allow business decisions:

Full proposals for Competition 94-02 (Manufacturing Composite Structures) must be received at the ATP office by **July 6, 1994**. An application package (description of the competition, copy of the ATP proposal preparation kit, and other general information) is available from: Advanced Technology Program, Competition 94-02, Room A430, Administration Building (Bldg. 101), National Institute of Standards and Technology, Quince Orchard and Clopper Roads, Gaithersburg, MD 20899. Phone 1(800) ATP-FUND. Fax (303) 926-9524. E-Mail: atp@micf.nist.gov.

NMAB Update

Strategic Planning. NMAB has started the biennial updating of its strategic plan. A key part of this effort involves determining which materials and processing issues and technologies will be important to the United States during the next five to seven years. The trend of linking R&D funding to application areas is expected to continue. The NMAB invites ideas and suggestions: National Materials Advisory Board, National Research Council, 2101 Constitution Avenue NW, Washington, DC 20418. Phone: (202) 334-3505. Fax: (202) 334-3718. Internet: nmab@nas.edu

New Members. In July 1993, five new members were appointed to the National Materials Advisory Board for three-year terms: John V. Busch, IBIS Associates; Harry E. Cook, University of Illinois at Champaign-Urbana; Robert J. Eagan, Sandia National Laboratories; Carolyn M. Hansson, Queen's University; and Elsa Reichmanis, AT&T Bell Laboratories. I. Melvin Bernstein, Tufts University, was reappointed for a three-year term.

Schafrik Named Acting Director of Manufacturing Studies Board. Robert Schafrik has been appointed acting director of the Manufacturing Studies Board, concurrent with his duties as director of the NMAB. The two boards are expected to develop a closer relationship.

Newly Issued Reports.

- Commercialization of Materials for a Global Economy (1993). NMAB-465. ISBN 0-309-04734-X.
- Materials Research Agenda for the Automotive and Aircraft Industries (1993). NMAB-468. ISBN 0-309-04985-7.
- Microwave Processing of Materials (1994). NMAB-473. ISBN - to be determined.

A free catalog of publications is available by contacting the NMAB. See address listed under "Strategic Planning." □

GRADUATE STUDENT AWARDS
at the 1994 MRS Fall Meeting

MRS Graduate Student Awards are intended to honor and encourage graduate students whose academic achievements and current materials research display a high order of excellence and distinction. Several awards are available for graduate students conducting research on topics to be addressed in the symposia at the 1994 Fall Meeting.

A group of finalists will be identified based on information provided in the award applications. Graduate Award recipients will be chosen from among the finalists, based on the results of a special student presentation session during which each finalist presents a 10-minute talk on his/her work.

All finalists will have their meeting registration fees paid, which also entitle them to MRS membership. Award recipients also receive a $250 cash prize and a plaque which will be presented at the Awards Session during the meeting.

The deadline for completed applications is **August 26, 1994**. Finalists will be notified by October 12, 1994. Application forms and information are available from: John B. Ballance, Executive Director, Materials Research Society, 9800 McKnight Road, Pittsburgh, PA 15237-6006, USA. Phone (412) 367- 3003; fax (412) 367-4373.

SEND BULLETIN NEWS TO:

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