

## With MatTec, Materials Policy Continues to Progress Despite Budget Impasses

For much of the first half of 1996, U.S. science policy planners were too caught up in the budget impasse between President Clinton and the Republican-dominated Congress to focus much attention on materials science and engineering research. The budgets, and even the existence, of various agencies had been challenged, making it difficult for long-term planning. Nevertheless, this spring's budget agreement for the rest of 1996 has allowed the National Science and Technology Council (NSTC) and its Materials Technology (MatTec) subcommittee, which oversees materials-related issues, to get back on track.

Publication of the report 1995: *The Federal Research and Development Program in Materials Science and Technology*, which was approved to be printed early in December 1995, was delayed by the lack of a budget agreement. In order to provide that document to the materials community as quickly as possible, Sam Schneider, executive secretary of MatTec, and his colleagues scheduled the report to be available on the Internet in June ([www.Whitehouse.gov/WH/EOP/OSTP/html/OSTP\\_Home.html](http://www.Whitehouse.gov/WH/EOP/OSTP/html/OSTP_Home.html) or [www.mscl.nist.gov](http://www.mscl.nist.gov) or [www.doe.gov/html/doe/whatsnew/reports.html](http://www.doe.gov/html/doe/whatsnew/reports.html)), linking it to the homepages of the various agencies involved. It is also to be made available on CD-ROM and in hard copy, and can be obtained from Materials Technology Secretariat, Room B309, Materials Building, NIST, Gaithersburg, MD 20899-0001; 301-975-5655; fax 301-926-8349; e-mail [samuel.schneider@nist.gov](mailto:samuel.schneider@nist.gov).

A comprehensive account of materials research in the federal government has not been reported since 1993, and in the intervening years, federal efforts have shifted, with greater emphasis on research that concerns industry and economics, Schneider said. While previous administrations had begun stressing the need for interagency communication and coordination of research, the Clinton Administration has defined several technological objectives. They include the development of affordable, high-performance commercial and military aircraft; very fuel-efficient, nonpolluting cars; more efficient electronics systems; durable buildings, roads, and rails; and environmentally safe processes and products. Thus MatTec has been charged with identifying what materials research is needed to achieve those goals and to track materials work at the various federal agencies.

The report highlights the materials cycle, illustrating how integral MatTec

responsibilities are to every step of the production process—from obtaining raw materials, through the creation of industrial and then engineered materials, to product design and application, and finally to the recycling, reuse, and disposal of those products. The report then outlines activities in each federal agency with respect to materials, with descriptions of projects, facilities, and contacts.

On the heels of this comprehensive document will come a MatTec report on R&D needs in electronics in the next decade, *Beyond the Technology Road Maps: An Assessment of Electronic Materials Research and Development*. This document is based on workshops held last year and covers very large-scale integration (VLSI) microelectronics, radio frequency (RF) and microwave electronics, photonics, mass storage, and module interconnection. It is a further iteration of the "road map" that has been developed as part of the National Electronic Manufacturing Initiative and includes a list of relevant government and industry documents as well as an account of the specific needs and progress in materials characterization, development, and utilization. According to the report, the complexity of these areas will require continued and increased partnerships between companies and between industry and the federal government. Likewise a parallel report is in the works related to electronics packaging.

As part of federal efforts to safeguard the environment, MatTec has begun to evaluate the effect of materials manufacturing on the environment and to identify ways to reduce pollution due to manufacturing or to the products themselves, Schneider said. He and his colleagues work closely with the Federation of Materials Societies (FMS), which is organizing a summit between trade and professional associations concerned with materials in order to assess work being done to protect the environment. This meeting is scheduled in the fall. Schneider expects that meeting will lead to the beginnings of a road map, perhaps organized along various classes of materials, that will help organize efforts by the private sector and MatTec in setting priority areas for environmental protection.

While MatTec's efforts in electronics and in the environment are still in the policy-setting stage, work in the Partnership for a New Generation of Vehicles (PNGV) is a year or two ahead. A year ago, these priority-setting efforts identified weak links in the development of cars. Schneider said that new materials are not needed, but research to decrease the costs of composites, to increase the strength of aluminum structures, and to make the width of steel thinner

is needed. Funding has been identified, as have the proper agencies for coordinating the programs using that funding.

The same is true in building materials. As a result, a composite bridge is being built in California and the Advanced Technology Program of the National Institute of Standards and Technology is supporting development for composite materials for structural applications.

However, Schneider is not sure progress can continue at this pace. Materials research did well in this budget crisis, but with the science and technology budget expected to level off—and possibly decrease—more than MatTec is needed to make materials research continue to grow. "In the world of politics, materials is not well-represented," he said. Too few people are talking to Congress representatives specifically about materials work. To remedy that situation, scientists are being asked to take on advocacy roles in Washington, Schneider said. Already a few are establishing subsidiary lobbying organizations, but more pro-materials voices are needed.

## NRC Issues Second Review on PNGV

The Partnership for a New Generation of Vehicles (PNGV) has made significant progress, but research funding should be more focused on the most promising technologies and management should be strengthened to gain a competitive edge in the world market, according to a report by the National Research Council, *Review of the Research Program of the Partnership for a New Generation of Vehicles*. The report is the second in a continuing independent review of the PNGV program, a public-private partnership to develop a mid-size, affordable automobile with an equivalent fuel economy of up to 80 miles per gallon while meeting prevailing emissions and safety standards. PNGV's goal is to build concept vehicles by 2000, with production prototypes ready for manufacturing by 2004. A copy of the report may be obtained from the National Research Council, 2101 Constitution Avenue, N.W., Washington, DC 20418; 202-334-2138.

The latest PNGV program plan, dated November 29, 1995, and the PNGV document, *Inventions Needed for PNGV*, which describes contributions sought from outside participants, may be obtained from PNGV Secretariat, U.S. Department of Commerce, Herbert Clark Hoover Building, Room 4845, 14th Street and Constitution Avenue, N.W., Washington, DC 20230; 202-482-6260. For further information on this program, see the World Wide Web homepage (<http://picard.aero.hq.nasa.gov/index.html>) and the Public Affairs Forum in this issue of *MRS Bulletin*. □