R.M. Laine and C. Viney Join University of Washington MSE Department

Dr. Richard M. Laine has joined the University of Washington in Seattle, Washington as a research professor in the Department of Materials Science and Engineering, and as director of the Polymeric Materials Laboratory of the Washington Technology Center. Laine will be involved in working on catalysts for the synthesis of imorganic polymers that are precursors to ceramics and in using molecules as building blocks to make materials, including ceramics.

A member of the Materials Research Society, Laine received his PhD from the University of Southern California in 1973. He was previously employed at SRI International in California as associate director of inorganic and organometallic chemistry programs.

Dr. Christopher Viney comes to the University of Washington as an assistant professor of materials science and engineering. He will teach classes and perform research in the Washington Technology Center's Advanced Materials Technology Program. Viney, a member of the Materials Research Society, received his BA, MA, and PhD from Cambridge University, United Kingdom. He was previously a visiting scientist at IBM Almaden Research Center, San Jose, California and held junior teaching and research posts at Cambridge University.

S.L. Sarkar Receives Grant to Develop Clinker for Cement

Prof. Shondeep L. Sarkar of the University of Sherbrooke, Quebec, Canada, was recently awarded a grant of C$558,630 to develop a clinker for Portland cement that can achieve high strength within 24 hours. The grant was awarded by the National Engineering and Science Research Cjouncil of Canada (NESRCC) and Ciment St.-Laurent, Quebec. Beginning May 15, 1988, the project will last three years.

Ohio Commits Funds to Plan Aerospace Institute

The state of Ohio's FY 1989-90 capital budget includes a commitment of $500,000 to plan an Ohio Aerospace Institute to be located at or near the NASA Lewis Research Center in Cleveland. Plans are for the institute to fulfill three criteria: (1) serve as a research institute where academics would spend time in residence and conduct research to solve critical NASA technical problems; (2) serve as a graduate and continuing education center where Lewis Research Center and other government and industry personnel interested in aerospace-related subjects could take courses leading to advanced degrees; and (3) be a technology distribution center where state and regional industry could receive assistance in applying NASA/university-developed technology.

D.A. Jeannotte Elected Chairman of ASTM Committee

Dexter A. Jeannotte, senior engineer, IBM Corporation, Hopewell Junction, New York, was elected chairman of the American Society for Testing and Materials Committee B-4 on Metallic Materials for Thermostats and Electrical Resistance, Heating, and Contacts. He will lead the 90-member standards writing committee for two years.

Jeannotte has been with IBM for over 20 years, holding several positions before he received his present title in 1979. He holds a BS in mechanical engineering from Marquette University and an MS and PhD in metallurgy from Columbia University. Jeannotte is a member of many professional organizations, including the IEEE, AAAS, International Society for Hybrid Microelectronics, International Electronic Packaging Society, and the Materials Research Society.

International Workshop Begins on Fusion Reactor Design

The United States, the European Community, Japan, and the USSR have begun a three-year collaborative project to develop a conceptual design for a fusion engineering test reactor by the end of 1990. Work on the International Thermocuclear Experimental Reactor also includes validating research and development conducted by the four national fusion programs.

Teams of 10 people from each party arrived in Garching, West Germany in early May 1988 to begin joint work at a new design center provided by the European Community on the campus of the Max Planck Institute for Plasma Physics. The U.S. team, headed by John Gilleland of Lawrence Livermore National Laboratory in California, consists of personnel from the Livermore laboratory, Oak Ridge National Laboratory in Tennessee, the Princeton Plasma Physics Laboratory in New Jersey, and Argonne National Laboratory in Illinois.

The four parties have agreed to contribute equally to the work which will be conducted under the auspices of the International Atomic Energy Agency. The U.S. Department of Energy expects to devote about $50 million over the next three years.

University of Illinois Breaks Ground for Engineering and Computer Sciences Building

On June 1, 1988 the University of Illinois at Chicago (UIC) held groundbreaking ceremonies for a $24.9 million engineering and computer sciences building that will help increase the flow of federal and private research dollars to the institution.

Dr. David M. France, associate professor of mechanical engineering and chairman of the faculty committee that oversaw the building's design, explained that the growth of the college and the increase in research created a critical need for additional and more sophisticated facilities. "For example," said France, "I had an opportunity to do some reasearch under a new federal program, but I didn't go after the work because I didn't have the space to do it properly." France explained that the college's demands for facilities are high because the research conducted by faculty and students is diverse, including work in robotics, heat transfer, fluid mechanics, and materials research and design work ranging from microelectronics to major structures.

The 100,000 ft^2 building will include classrooms, laboratories, faculty and departmental offices, conference rooms, video studio, machine shop, and a Class I clean room for fabricating microchips for the college's 3,000 graduate and undergraduate students and 112 faculty members.

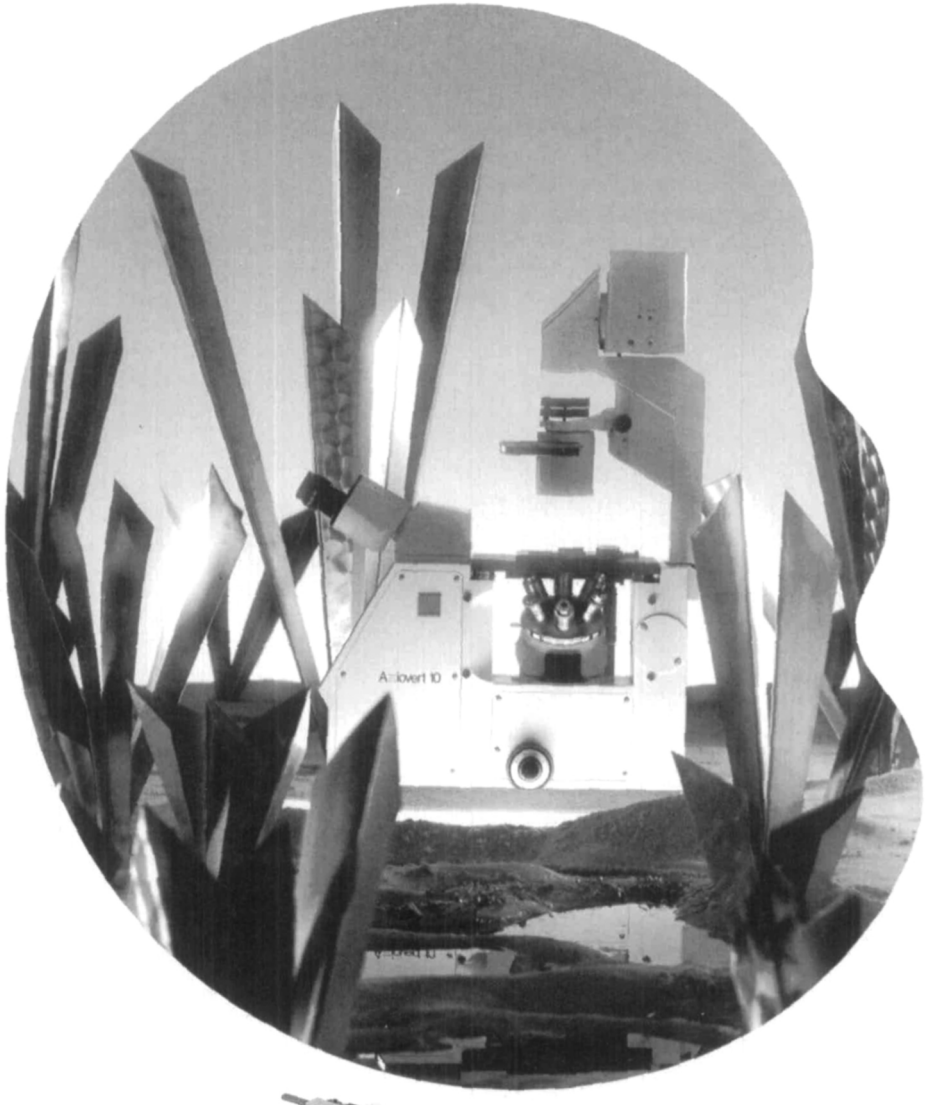
R.E. Barks Named Director of Los Alamos Industrial Applications Office

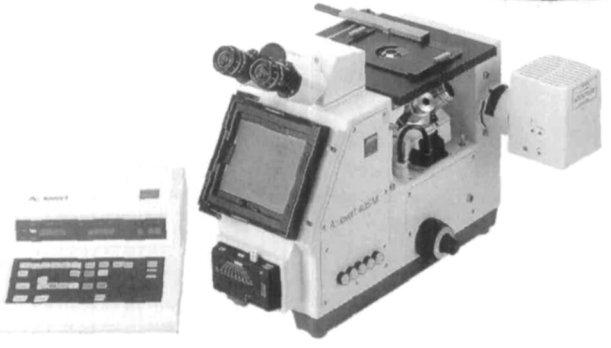
Ronald E. Barks has been named director of the Industrial Applications Office at Los Alamos National Laboratory. The Industrial Applications Office is the laboratory's main contact with industry. It provides the direction and initiatives needed to launch cooperative R&D ventures, and helps commercialize the laboratory's scientific and technical products.

A PhD geochemist, Barks has more than 20 years of experience in research and development, technology transfer, and business management. His research interests include materials science, ceramics, and crystal growth. Barks is a member of the Materials Research Society.

FOR MATERIALS TESTING: AXIOVERT™ WITH ICS OPTICS

THE NEW GENERATION OF INVERTED MICROSCOPES. FROM CARL ZEISS.





Zeiss *Axiovert* Microscopes

For routine inspection, quality control or critical research in the material sciences, the new *Axiovert* microscopes carry microscopy to previously unattained levels of excellence.

The newly computed ICS* optics provide exceptionally long working distances with brilliant images, highest contrast and true color fidelity.

The unique, ergonomic SI** design and patented 3-point stage support ensure exceptional stability and fatigue-free operation. All components for contrast-enhancing techniques can be integrated. Accessories, such as for quantitative microscopy, turn any *Axiovert* microscope into a full-fledged workstation.

No matter which model you select, from the *Axiovert 10* with MC100 camera to the advanced photomicroscope *Axiovert 405 M* with motorized nosepiece, documentation is a snap in 35 mm, large format 4 x 5″, instant photography or video.

*Infinity Color-Corrected System

**System Integrated

The new invertoscopes from Zeiss: Building on a tradition of superb performance.

Carl Zeiss, Inc.

One Zeiss Drive
Thornwood, NY 10594
914 · 747 · 1800

ZEISS
West Germany

https://doi.org/10.1557/S0883769400065192 Published online by Cambridge University Press

R.K. Quinn Named Director of Los Alamos Exploratory R&D Center

Rod K. Quinn was recently named director of the new Exploratory Research and Development Center at Los Alamos National Laboratory. The center will promote interactions with industry, other laboratories and universities. The center also encompasses the laboratory's Superconductivity Pilot Center, a U.S. Department of Energy-designated facility that was created in April 1988 to foster collaborative research between DOE laboratories and industry.

Quinn joined Los Alamos two years ago, following a 19-year career at Sandia National Laboratories in Albuquerque, New Mexico. He has been an associate division leader and program manager in the Chemical and Laser Sciences Division at Los Alamos and, since March 1988, the laboratory's program coordinator for high temperature superconductivity.

Quinn is a member of the American Chemical Society, a Fellow of the American Institute of Chemists, and an active member of the Materials Research Society. He was a meeting chair for the 1986 MRS Spring Meeting and chair of the MRS Program Committee in 1986 and 1987.

NRC Committee Reviews NASA's Microgravity Program

An expert committee of the National Research Council did not see an immediate future for manufacturing in space but did urge the National Aeronautics and Space Administration to continue supporting basic research in microgravity. The committee recommended that NASA "focus on basic materials science, processing research, and in-space processing technology, rather than on manufacturing." NASA had asked the committee to review its microgravity program and evaluate its potential applications to industry.

NASA should encourage both manned and unmanned experiments and use "creative approaches" to get automated microgravity experiments into space, the committee said. To achieve this goal, it recommended that NASA develop free-flying orbiting vehicles dedicated to microgravity research. Research projects could also be placed on sounding rockets similar to those used for atmospheric sciences research and "piggybacked" on satellites launched for other purposes, the committee said. The committee also called for development of a mixed fleet of space vehicles to provide dependable access to space.

The committee concluded that the microgravity program would benefit from industrial participation, and it called on NASA to increase opportunities for firms to take part, either as individual companies or consortia.

Cooperation with other nations was also recommended because "as the magnitude of the space project grows, there will be goals that no single nation can meet with its own resources." Japan, Germany, France, the European Space Agency, the USSR, and China are also engaged in microgravity research.

To maintain vigor in the microgravity program for the benefit of a wide range of interested parties, the committee recommended that the federal government establish a senior-level national microgravity research board composed of representatives from industry, academia, and relevant government agencies. A similar body was proposed in President Reagan's "Space Policy and Commercial Space Initiative to Begin the Next Century."

The NRC report, *Industrial Applications of the Microgravity Environment*, is available from the Space Applications Board of the Commission on Engineering and Technical Systems, telephone (202) 334-3272.

Catholic University of Louvain Begins International Program in Physics of Microelectronics and Materials Science

Beginning with the 1988-89 academic year, the Catholic University of Louvain and the Interuniversity Micro-Electronics Center (IMEC vzw) will offer a new international postgraduate program in the Physics of Microelectronics and Materials Science. The one-year program is open to foreign and Belgian students with a master's or equivalent degree in engineering or science. Depending on the number of courses taken, it can lead to either a certificate or the degree of Master in Physics of Microelectronics and Materials Science.

The main purpose of the program is to provide interfaculty study training on a broad but high scientific level. The program recognizes the need for an interdisciplinary approach to current research problems in physics, electronics, and materials science. As such it is different from the traditional programs available at the Catholic University of Louvain. The program is based on the research activities of internationally recognized laboratories at the university (Department of Metallurgy and Materials Engineering, Department of Electrical Engineering, and Department of Physics) and IMEC vzw. The lecturers wil be from these laboratories and will also include scientists from outside the university.

The lectures, taught in English only, will include 10 courses of three semester hours each in a two-semester period. Laboratory sessions and seminars will also be provided. The courses include the following: Advanced Solid State Physics, Thermodynamics, Kinetics and Related Topics in Materials Science, Physics of Advanced Microdevices, Fundamentals of Defects in Materials, Physics of Beam-Solid Interactions, Materials Characterization Techniques, Continuum Modeling of Materials Properties, Basics of VLSI Processing, and Design and Analysis of Experimentation.

For information and application forms contact: Prof. F. Delmartino, Katholieke Universiteit Leuven, Office for International Relations, Naamsestraat 22, B-3000 Leuven, Belgium; phone (32) (16) 28 20 27; telex 25715 kulbib: fax (32) (16) 20 40 14.

NAE Committee Calls for New Approaches to Strengthen U.S. Industry

After a review of the role of technology and engineering in improving U.S. economic competitiveness, a National Academy of Engineering committee concluded that new approaches to the use and management of technology are needed if U.S. industry hopes to keep up with its key rivals in the world economy. The key ingredients to strengthen the U.S. position, the committee found, are high quality products; continuous improvement in goods and services; an integrated team approach to design, development, and production; and strong employee involvement. The committee stressed that the response of the nation to the problem has so far "lacked the needed urgency."

The committee recommended a more cooperative working relationship between industry and government and a broader definition of the federal government's role in supporting the success of U.S. industries is essential. To improve cooperation between government and industry, the committee recommended that a single government agency or council be designated to respond to industry initiatives and serve as a liaison to industry and other private groups.

Because universities are such an essential part of the technical enterprise in the United States, the committee recommended an assessment of how U.S. universities have been affected by joint research ventures with commercial entities and how the knowledge generated in universities is transferred to industry. The

https://doi.org/10.1557/S0883769400065192 Published online by Cambridge University Press

challenge, said the committee, is to devise a system that maximizes the effectiveness of university contributions to industrial competitiveness but that does not "compromise the primary functions of universities in research and teaching or lead to a reduction in open communication of academic research."

The report, *The Technological Dimensions of International Competitiveness,* is available from the National Academy of Engineering, Office of Public Awareness, 2101 Constitution Avenue NW, Washington, DC 20418; telephone (202) 334-2210.

NMAB Announces Upcoming Studies

The National Materials Advisory Board, a unit of the National Research Council, recently announced it will conduct the following studies:

Superhard Materials—A new NMAB committee will be convened to assess the state of the art in superhard materials and to identify the scientific, technical, and economic impediments to the quick exploitation of these technologies by the defense and commercial sectors. The superhard materials to be studied include diamond, diamond-like carbon structures, and cubic boron nitride. Other nitrides and carbides, some of which experience a supermodulus effect, will also be considered.

Liquid Crystalline Polymers—An NMAB study sponsored by the U.S. Department of Defense and the National Aeronautics and Space Administration will examine and assess the opportunities for using these materials for structures and devices of interest to them.

Materials with Submicron-Sized Microstructure—A committee will examine the extent of understanding of the systhesis, characterization, and behavior of materials with ultrafine (<100 nm) structures. The objective is to derive research needs based on the recognition of the limitations in the theoretical understanding of structure, processing, and property relationships. The materials of interest include metals, ceramics, coating, composites, superhard materials, and cermets but not semiconductors. Potential engineering applications will be identified.

Life Prediction Methodologies for Composite Materials—A committee will evaluate the current status and development of life prediction methodologies for fiber-reinforced polymer composites under various loading conditions. Some of the issues to be examined are test methodologies and data base; life prediction; failure mechanisms in fibers, polymers, and composites; damage accumulation; and nondestructive evaluation.

High Performance Synthetic Fibers—A new NMAB committee will review fiber-based materials, products, and applications, delineating the scope of materials and products currently available and also those in late developmental stages. The study will review performance characteristics, amount of materials and products produced, costs, projections, and manufacturers.

Competitiveness of the Minerals and Metals Industries—A steering committee and associated panels will be convened to study technological opportunities for improved competitiveness of the U.S. minerals industry. For each mineral in the study, the committee will consider (1) if there are significant opportunities for new technologies to improve minerals production and processing, and (2) if those innovations would yield a significant competitive advantage.

For more details about these studies, see the *NMAB Newsletter,* December 1987. □

https://doi.org/10.1557/S0883769400065192 Published online by Cambridge University Press