between the alloy and overlayer structures. The behavior of the patterns also responds to temperature changes.

Specific Chemical Reactions Induce Reorientation of Nanoscale Liquid Crystals

Nicholas L. Abbott of the University of Wisconsin—Madison and Rahul R. Shah of the 3M Corp. (formerly of University of Wisconsin) have devised a portable chemical sensor that relies on liquid crystals formed from molecules weakly tethered to a nanotextured surface. As reported in the August 17 issue of *Science*, the device consists of an ultrathin gold film with nanoscale corrugation. The surface of the gold film is then dotted with protruding chemical receptors that weakly anchor the liquid crystal in a well-defined orientation along the film's surface. When these receptors are exposed to the specific chemical that is the object of detection, however, they bond more strongly with that target chemical than they do with the liquid crystal. The liquid crystal is then displaced into a new orientation that is controlled by the underlying surface texture, changing the sensor's color or brightness. On a surface with carboxylic acid receptors, for example, exposure to a vapor of the chemical hexylamine caused the liquid crystal to shift from an orientation perpendicular to the gold film's corrugations to an orientation that was parallel with the corrugations. According to the researchers, the "competitive binding" mechanism also allows the sensor to tolerate nontargeted compounds, such as water, which can interfere with detection in other types of sensors. In this case, the nontarget forms an even weaker bond with the receptor than the liquid crystal, and is unable to dislodge it.

Elasticity of Hexagonal Close-Packed Iron at Earth's Inner Core Characterized

Researchers have been puzzled as to why, based on seismological measurements, elastic waves generated by earthquakes travel through the inner core faster along directions parallel to Earth's polar axis than in other directions. The cause of this difference has not been well understood, partly because the elastic properties of iron at the high pressure and temperature of Earth's center are not known. A research team from the University of Michigan, Carnegie Institution of Washington, California Institute of Technology, National Institute of Standards and Technology, and the University of Pennsylvania has used supercomputer simulations to study changes in the crystal structure of iron at high pressure and very high temperatures of 4000–7000 K. As reported in the September 6 issue of *Nature*, their results support the hypothesis that the directional behavior in seismic wave propagation reflects the alignment of crystals in the inner core. The strong temperature-dependence of the average seismic wave velocity in iron and an almost perfect agreement of such properties with those of the inner core at a temperature of 5700 K have also led the researchers to infer that this is the temperature in the center of the Earth.

Developing a method that uses a first-principles treatment of the electronic structure with an efficient model of the lattice vibrations, the researchers were able to characterize the structure and elasticity of dense hexagonal close-packed (hcp) iron at high temperatures. They calculated the elastic-constant tensor by applying small magnitude finite strains to

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the lattice and evaluating the resulting changes in the Helmholtz free energy as a function of volume and temperature. Although only a small change in the axial ratio was calculated with increasing temperature, they said that the change in the axial ratio with temperature is significant because of its direct influence on the elastic anisotropy. The researchers said that the behavior of iron differs from other hcp transition metals that demonstrate little change in correlation with the temperature. For example, they said, titanium shows the largest such change with a decrease of 13% up to a temperature of 1075 K, about half its melting point.

"Our results suggest that absolute temperature rather than the temperature relative to melting controls anisotropy," they reported. The researchers said that other scientists should be able to apply this new understanding of the high-temperature elasticity of iron to refine models of the dynamics in Earth's inner core.

FOR MORE RESEARCH NEWS ON MATERIALS SCIENCE . . .

. . . access the Materials Research Society Web site:

www.mrs.org/gateway/matl_news.html

Correction:

In the September 2001 issue of *MRS Bulletin*, the department RESEARCH/RESEARCHERS published news about nitrogen-doped ultrananocrystalline diamond films that exhibited high room-temperature *n*-type conductivity. The research was published in the September 3 issue of *Applied Physics Letters*. *MRS Bulletin* provided only a partial list of the researchers involved. Participants of this research team were S. Battacharyya, O. Auciello, J. Birrell, J.A. Carlisle, L.A. Curtiss, A.N. Goyete, D.M. Gruen, A.R. Krauss, J. Schlueter, A. Sumant, and P. Zapol.

News of MRS Members/Materials Researchers

Chunli Bai, vice president of the Chinese Academy of Sciences, has been awarded the **2001 Society of Chemical Industry International Medal**, for which he prepared the award lecture, "Scientific Progress in China: The Case of Nanotechnology."

John A. Barnard has been appointed chair of the Department of Materials Science and Engineering (MSE) at the University of Pittsburgh.

Craig R. Barrett, president and chief executive officer of Intel Corp., has been selected for the **2002 J. Herbert Hollomon Award of Acta Materialia** for outstanding contributions to understanding the relations between materials technology and society, as well as contributions to materials technology that have had a major impact on society. He will be presented with the award during ASM International's Annual Awards Dinner on October 7, 2002, in Columbus, Ohio.

Sir John Cadogan has been awarded the **Society of Chemical Industry (SCI) Society Medal**, which is awarded in recognition of services to applied chemistry.

Robert W. Cahn, emeritus professor and Distinguished Research Fellow in the Department of Materials Science and Metallurgy at the University of Cambridge, has been awarded the **2002 Acta Materialia Gold Medal** for outstanding contributions and leadership in materials research. The Medal will be presented on April 10, 2002, during the Institute of Materials Congress dinner in London.

George Celler has been appointed to SOITEC's newly created position of chief scientist, assisting the company's team, customers, and partners with technical and scientific issues and with promoting visibility for the company.

Swapan Chattopadhyay has been named associate director for the Accelerator Division at the Thomas Jefferson National Accelerator Facility where responsibilities consist of all aspects of Jefferson Lab's CEBAF accelerator and Free Electron Laser facilities, including research and development, operations, maintenance, and upgrades.

J.H. Clark, **D.J. Macquarrie**, and **K. Wilson** (University of York, England) have been awarded an **EPSRC Interdisciplinary Research Networks at the Materials/Chemistry Interface grant** to run a Network in the area of "Chemically

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Modified Mesoporous Inorganic Solids—Synthesis, Characterization, and Applications," known as MIS Network. The main aim of the Network is to facilitate and encourage research to provide a springboard to make the jump from bench-scale research to the commercial application of chemically modified mesoporous inorganic solids as heterogeneous catalysts and as selective absorbents.

Raymond P. Goehner and **Joseph R. Michael** of Sandia National Laboratories

Cornell, Ketterle, and Wieman Named 2001 Nobel Laureates in Physics

Eric A. Cornell of JILA and National Institute of Standards and Technology (NIST), **Wolfgang Ketterle** of Massachusetts Institute of Technology (MIT), and **Carl E. Wieman** of JILA and University of Colorado have been jointly awarded the 2001 Nobel Prize in Physics "for the achievement of Bose-Einstein condensation in dilute gases of alkali atoms, and for early fundamental studies of the properties of the condensates".

The Bose-Einstein condensate (BEC), a new extreme state of matter, was first predicted in 1924 by physicist S.N. Bose. Cornell and Wieman have produced a pure BEC of about 2000 rubidium atoms at 20 nK and, independently of their work, Ketterle has performed corresponding experiments with sodium atoms. The condensates Ketterle produced contained more atoms and could therefore be used to investigate the phenomenon further. Using two separate BECs which were allowed to expand into one another, he obtained very clear interference patterns. This experiment showed that the condensate contained entirely coordinated atoms. Ketterle also produced a stream of small "BEC drops" which fell under the force of gravity. This can be considered as a primitive "laser beam" using matter instead of light. The "control" of matter that this technology involves is expected to bring revolutionary applications in such fields as precision measurement and nanotechnology. More information on this research can be accessed at URL www.nobel.se/physics/laureates/2001/public.html.

Cornell received his PhD degree in 1990 from MIT. He is a senior scientist at NIST and Professor Adjoint at the University of Colorado. Ketterle received his PhD degree in 1986 from Ludwig-Maximilians-Universität München and Max-Planck-Institut für Quantenoptik, Garching. He is a professor of physics at MIT. Wieman received his PhD degree in 1977 from Stanford University and is currently a professor of physics at the University of Colorado.

Fred D. Rosi, Professor Emeritus at the University of Virginia's Department of Materials Science and Engineering, and a Fellow of the American Physical Society and the American Institute of Metallurgical Engineers (AIME), died on May 7, 2001, from complications following a year-long battle with prostate cancer. His work and leadership in the materials science of semiconductors pioneered and advanced this field, and he had a significant role in the founding of the Materials Research Society.

Fred was born in Meriden, Connecticut, on January 13, 1921, the son of poor Italian immigrants. He received a BE degree from Yale University in 1942, then served as a lieutenant in the U.S. Navy as Engineering and Minesweeping Officer in the Pacific during the second World War, and completed his education at Yale University, receiving an ME degree in 1947, an MS degree in physics in 1948, and a PhD degree in 1949.

A major part of Fred's career (over 20 years) was spent at RCA Laboratories in Princeton, NJ, where he became Vice President of Materials and Device Research. He moved to Richmond, Virginia in 1975, accepting the position of General Director of Research and Development for the Reynolds Metals Co. Fred completed his career at the University of Virginia, as Executive Director of the Energy Policies Studies Center, and Professor, Department of Materials Science and Engineering, until 1995. He served as consultant to the NASA Marshall Space Flight Center, the Central Intelligence Agency, and several corporations. He was also a member of numerous committees, including the National Academy of Science Committee on Electronic Materials and Devices, and the National Materials Advisory Board. Fred served as chair of the Board of Trustees of Trenton State College, and on the New Jersey Board of Higher Education. He held 12 issued U.S. patents, published 47 articles, and received the David Sarnoff Gold Medal in Science at RCA Laboratories.

To fully appreciate Fred's contributions, we must first turn back the clock 50 years. At that time, the revolution in semiconductors had begun, but the science of electronic materials had not really been born yet as a distinct and recognized field; no society yet existed concerning this field. The people in the field were few, consisting mostly of metallurgists. Fred was a founder of the Electronic Materials Committee of the AIME, perhaps the first group to focus on electronic materials and to hold annual meetings in this field. He gave numerous talks to groups in the AIME, universities, government, and industrial laboratories, emphasizing the importance of materials aspects in semiconductors. He also focused on the need to form interdisciplinary teams to achieve new and improved devices, a concept that is now widespread.

Fred's leadership initiating and guiding research projects was remarkable. His group at RCA Laboratories grew and broadened, influencing a generation of scientists there. His early emphasis on III–V compounds led to a leadership position for RCA scientists in this field, with key contributions to the materials aspects of GaAs. For example, he led the team that defined many key properties of GaAs, including the discovery that silicon was the main donor in GaAs, which had a dramatic effect on further work in the field. Later work by this group provided the first vapor-phase synthesis of aluminum nitride (AlN), paving the way to the present blue light-emitting diodes.

Another example is the work at RCA Laboratories on silicon-germanium alloys. Following discovery of the importance of these alloys for thermoelectric devices in 1960, Fred initiated, inspired, and guided the interdisciplinary team to develop these alloys from a laboratory curiosity to a practical device. In just four years after he assumed leadership, the SNAP-10A system employing these thermoelectric devices for power generation was successfully launched. These power generators are critical elements that enabled the Voyager 1 and 2 spacecrafts launched in 1977, the Galileo spacecraft launched in 1989, and the Cassini mission launched in 1996, among other spacecraft.

Still another example is that, during the same five-year period when the silicon-germanium alloys were being developed, Fred also initiated and led a multidisciplinary program on superconductors. In 1960, the first success of the program was a new chemical vapor deposition system for the preparation of Nb_3Sn tape. By 1964, his team produced the world's largest superconducting solenoid with a field of 107 KG over a 1-in. bore. By 1966, RCA Corp. was selling superconducting ribbon. Today such superconducting solenoids dominate nuclear magnetic resonance research tools, and are the basis of a major development in medical tomography.

Fred Rosi epitomized what an industrial research leader should be, namely, not only recognizing the importance of the research itself, but also emphasizing the importance of achieving practical applications. His leadership included the ability to inspire and encourage both those who worked for him and those who worked with him; he was loyal and sensitive, and exciting to be with. The now flourishing field of materials science has lost an outstanding leader, pioneer, and innovator. For all of us who worked or interacted with Fred, his charisma, enthusiasm, intelligence, and personal kindness will not be forgotten.

LEONARD R. WEISBERG, Alexandria, Virginia
GEORGE D. CODY, Princeton, New Jersey

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have received the **2001 J.D. Hanawalt Award** for excellence in the field of x-ray powder diffraction from the International Centre for Diffraction Data.

Sir Harold Kroto (University of Sussex) has been awarded **Honorary Membership of the Society of Chemical Industry**.

Vute Sirivivatnanon of CSIRO Sustainable Materials Engineering has received the Canada Centre for Minerals & Energy Technology and The American Concrete Institute (CANMET/ACI) **Mohan Malhotra Award** for Supplementary Cementing Materials in recognition of his development of useful applications of fly ash, slags, and silica fume.

Pierre Wiltzius has been selected as director of the Beckman Institute for Advanced Science and Technology at the University of Illinois at Urbana-Champaign, effective September 21, 2001. He replaces Jiri Jonas who has served as director since 1993 and is retiring. In addition, Wiltzius will hold appointments in the Departments of Materials Science and Engineering and Physics.

Knowles, Noyori, and Sharpless Named 2001 Nobel Laureates in Chemistry

William S. Knowles, retired from Monsanto Company, St Louis, and **Ryoji Noyori** of Nagoya University have been selected for the 2001 Nobel Prize in Chemistry "for their work on chirally catalyzed hydrogenation reactions." They share half the prize with **K. Barry Sharpless** of Scripps Research Institute, La Jolla, Calif., who was selected "for his work on chirally catalyzed oxidation reactions."

Molecules that appear in two forms that mirror each other are called "chiral." This year's Nobel Laureates in chemistry have developed molecules that can catalyze important reactions so that only one of the two mirror image forms is produced. The catalyst molecule, which itself is chiral, speeds up the reaction without being consumed. One of these molecules can produce millions of molecules of the desired mirror image form. Knowles discovered that transition metals could be used to make chiral catalysts for hydrogenation, thereby obtaining the desired mirror image form as the final product. His research quickly led to an industrial process for the production of the L-DOPA drug which is used in the treatment of Parkinson's disease. Noyori has led the further development of this process to general chiral catalysts for hydrogenation. Sharpless developed chiral catalysts for oxidation. With these developments, the researchers have opened a field of research in which molecules and materials can be synthesized with new properties. More information on their research can be accessed at URL www.nobel.se/chemistry/laureates/2001/public.html.

Knowles received his PhD degree in 1942 from Columbia University and retired from Monsanto in 1986. Noyori received his PhD degree in 1967 from Kyoto University. Sharpless received his PhD degree in 1968 from Stanford University.

The **American Chemical Society** (ACS) has announced its 2001 awards.

Alexis T. Bell (University of California-Berkeley) received the **ACS Award for Creative Research in Homogeneous or Heterogeneous Catalysis**;

Daniel J. Brunelle (GE Corporate Research and Development, Schenectady, NY) received the **ACS Award in Applied Polymer**;

Charles T. Campbell (University of Washington—Seattle) received the **ACS Award in Colloid or Surface Chemistry**;

F. Albert Cotton (Texas A&M University) received the **ACS Award in Organometallic Chemistry**;

David A. Tirrell (California Institute of Technology) received the **ACS Award in Polymer Chemistry**;

Tobin J. Marks (Northwestern University) received the **ACS Award in the Chemistry of Materials**;

J. Michael White (University of Texas-Austin) received the **Arthur W. Adamson Award for Distinguished Service in the Advancement of Surface Chemistry**;

Helmut Schwarz (Institut für Organische Chemie, Technische Universität, Berlin, Germany) received the **Frank H. Field and Joe L. Franklin Award for Outstanding Achievement in Mass Spectrometry**;

Martin T. Zanni, a student at the University of Pennsylvania, and **Daniel M. Neumark**, the preceptor at the University of California—Berkeley, were honored with the **Nobel Laureate Signature Award for Graduate Education in Chemistry**; and

William A. Klemperer (Harvard University) received the **E. Bright Wilson Award in Spectroscopy**.

ASM International has announced its **2001 Fellows**:

Sreeramamurthy Ankem (University of Maryland) for contributions to modeling microstructure evolution and deformation behavior of two-phase materials in general, and in titanium alloys;

Frank G. Arcella (AeroMet Corp., Eden Prairie, Minn.) for outstanding contributions to the development of a new laser-based process for the fabrication of aerospace structures, and for leadership in industry;

Ian Baker (Dartmouth College) for outstanding contributions to the understanding of the deformation of metals, intermetallics, and ice;

Arlan O. Benscoter (Lehigh University) for outstanding teaching and contributions to the art and science of light optical microscopy;

William J. Brindley (Rolls-Royce Corp., Indianapolis, Ind.) in recognition of work in developing the understanding of thermal-barrier coating performance and multidisciplinary solutions to coating problems;

Jacob Crane (Olin Corp., New Haven, Conn.) for development of materials for piston and jet engines, nuclear fuels and shield material, and copper-base alloys for wide-ranging industrial applications;

Daniel Eliezer (Ben-Gurion University of the Negev, Be'er Sheva, Israel) for extensive contributions to hydrogen effects on metals, corrosion behavior of metals, and the science and technology of magnesium alloys, and for leadership in international materials science;

Ali Erdemir (Argonne National Laboratory) for sustained pioneering contributions to surface engineering and tribology of solid lubricants and thin films;

B. Lynn Ferguson (Deformation Control Technology, Inc., Cleveland, Ohio) for applying analytical modeling methods to further the understanding of thermomechanical processing and transferring this technology to the forging and powder metallurgy industries;

Robert L. Fleischer (Union College, Schenectady, NY) for seminal contributions to understanding mechanical properties of crystalline materials, for development of solid-state particle track detectors, and for insightful analyses of the physical and mechanical properties of intermetallic compounds;

Jeffrey A. Hawk (Department of Energy) for outstanding contributions to the processing of advanced materials for severe wear and wear-corrosion environments;

Joachim V.R. Heberlein (University of Minnesota) for advancing the fundamental understanding of applied materials processing research via plasma technologies;

Dennis W. Hetzner (The Timken Co., Canton, Ohio) for outstanding contributions to the enhancement of high-speed steel wear resistance by use of laser glazing, and for inventing new high-speed steel alloys;

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Joseph A. Horton Jr. (Oak Ridge National Laboratory) for contributions to the understanding of fracture behavior and alloying effects in ordered intermetallics and other alloys;

Maurice A.H. Howes (IIT Research Institute, Chicago, Ill.) for contributions to advancements in tribology, heat treatment, and performance of carburized steels, and control of distortion during heat treatment;

Osman T. Inal (New Mexico Institute of Mining & Technology) for making important and sustained contributions over a broad range of materials;

Albert Kay (ASB Industries, Inc., Barberton, Ohio) for commercialization of emerging spray technologies such as HVOF and cold spray leading to cost reduction and improved performance;

James R. Keiser (Oak Ridge National Laboratory) for fundamental research in mechanisms of corrosion and erosion of diverse metal and ceramic systems, and for leadership that has translated these results into engineering solutions;

Ray Y. Lin (University of Cincinnati) in recognition of outstanding contributions in the field of materials processing applied to processing of coatings and metal-matrix composites;

Frederick J. Lisy (Orbital Research, Inc., Cleveland, Ohio) in recognition of outstanding contributions to the development of high-pressure and high-temperature sensors and flow control devices;

Stephen Liu (Colorado School of Mines) for the application of fundamental engineering principles to the investigation of welding and joining phenomena, especially in harsh environments;

Alan T. Male (University of Kentucky) in recognition of research on understanding of friction, lubrication, and microstructure/property effects in metalworking;

Terry R. McNelley (Naval Postgraduate School, Monterey, Calif.) for outstanding contributions to the understanding of superplasticity and grain refinement in aluminum alloys, and to the development of materials education programs;

Amit Prakash (Goodyear Tire and Rubber Co., Akron, Ohio) for highly innovative contributions to the development of 4 GPa ultrahigh strength steel and its subsequent use in automobile tires;

Edmund F. Rybicki (University of Tulsa) for developing methods to evaluate residual stresses in metals and debonding of composite materials with applications in the aerospace, automotive, defense, and electric power generating industries;

Rajiv K. Singh (University of Florida) for outstanding contributions to the fundamentals and technology application of laser-solid interactions in emerging materials and engineering problems of current industrial need;

Darrell F. Socie (University of Illinois at Urbana-Champaign) for outstanding and sustained contributions to the understanding and control of fatigue and failure of engineering materials and systems;

John G. Speer (Colorado School of Mines) for fundamental and applied contributions to the development and use of improved steel products;

James R. Strife (United Technologies Corp., East Hartford, Conn.) for important contributions to the field of composites and for excellence in leading multidisciplinary research and development efforts;

Peter W. Voorhees (Northwestern University) for seminal research in the thermodynamics and kinetics of phase transformation, and for outstanding teaching and mentoring of students;

Ronald A. Wallis (Wyman-Gordon Co., North Grafton, Mass.) for outstanding research in heat-treating superalloys, especially development of computer models to predict heat transfer, cooling rates, and resulting properties; and

Tong-Yi Zhang (Hong Kong University of Science and Technology) for significant contributions to knowledge of hydrogen diffusion, fracture of piezoelectric ceramics, intercalated graphite, and thin-film systems using both analytical and state-of-the-art experimental techniques.

The **National Science Foundation** has announced the first **Director's Awards for Distinguished Teaching Scholars**. The 2001 recipients, who will each receive $300,000 over the next four years to continue their work, include

Arthur B. Ellis (University of Wisconsin-Madison) in recognition of his research on electro-optical properties of materials;

Gretchen Kalonji (University of Washington) for theoretical studies of the structure and properties of defects in crystalline solids;

Eric Mazur (Harvard University) for research in experimental ultrafast optics and condensed matter;

H. Eugene Stanley (Boston University) for work in applying statistical mechanics to physics, chemistry, engineering, biology, and medicine; and

Carl E. Wieman (University of Colorado-Boulder) for distinguished work in the field of laser spectroscopy and atomic physics.

R&D Magazine has announced its **100 Awards** in the categories of Analytical Instruments, Bioscience, Consumer, Electronics, Energy, Environmental, Materials, Mechanical, Microscopy, Optical Imaging, Process, Software, Test & Measurement, and Vacuum/Thin Films. Some of the awards went to

Massachusetts Institute of Technology (Cambridge, Mass.), **Battelle** (Richland, Wash.), **Westinghouse Savannah River Co.** (Aiken, S.C.), and **MIT Plasma Science and Fusion Center** (Cambridge, Mass.) for development of the **MilliWave Viscometer**, a high temperature, on-line viscosity sensor that employs real-time process control in the manufacture of glass, metals, and other melter-produced materials;

METSS Corp. (Columbus, Ohio) for **GeoMelt ADF**, a non-glycol aircraft deicing/anti-icing fluid;

NASA Glenn Research Center (Cleveland, Ohio), **Pratt & Whitney** (East Hartford, Conn.), **General Electric** (Schenectady, NY), and **Solar Turbines, Inc.** (San Diego, Calif.) for **Silicon/ Mullite/BSAS** and **Silicon/Mullite+BSAS/BSAS EBCs (Environmental Barrier Coatings)** to protect silicon-based ceramics from harsh environmental attacks, most notably water vapor and molten salts;

Battelle (Columbus, Ohio) and **Ameritherm, Inc.** (Scottsville, NY) for **Cure On Demand Bonding System** to join thin plastic films or paper board substrates with an adhesive that can be pre-applied to the films to be bonded and then selectively activated to produce aesthetically pleasing and functional bonds at a later time;

Idaho National Engineering and Environmental Laboratory (Idaho Falls) for **Super Hard Steel**, which can be applied as a coating using conventional thermal-spray technology onto a wide variety of conventional metal surfaces on existing industrial parts, devices, and machines;

NASA Langley Research Center (Hampton, Va.) for **TEEK**, a low-density, flame-resistant polyimide foam providing thermal and acoustic insulation and high-performance structural support;

Yinnel-Tech, Inc. (South Bend, Ind.), **Technion—Israel Institute of Technology** (Haifa, Israel), **Sandia National Laboratories** (Livermore, Calif.), **Fisk University** (Nashville, Tenn.), and **Lawrence Berkeley National Laboratory** (Calif.) for the portable **Solid-State Radiation Materials and Detectors Based on II–VI Semiconductors**, which detects x-ray and gamma-ray radiation with high efficiency and identifies the isotopes responsible for the emitted radiation;

The Dow Chemical Co. (Midland, Mich.) for **STRANDFOAM EA Polypropylene Foam**, which absorbs large amounts of impact energy with minimal foam thickness;

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The Dow Chemical Co. (Freeport, Texas) for **INSPiRE Performance Polymers**, a propylene-based material;

McCook Metals LLC (McCook, Ill.), **Lockheed Martin Aeronautics Co.** (Fort Worth, Texas), and **NASA Langley Research Center** (Hampton, Va.) for **Aluminum-Lithium Alloy 2098**, a low-density, high-strength, and high-fracture toughness alloy used for thin plate and sheet applications;

NASA John H. Glenn Research Center at Lewis Field (Cleveland, Ohio) and **Dynacs Engineering Co., Inc.** (Cleveland, Ohio) for **Environment Conscious Ceramics**, a class of materials fabricated by pyrolysis of natural wood or wood sawdust or their combinations; the manufacturing process is suitable for producing dense or porous ceramics of non-oxide and oxide systems; and

NASA Glenn Research Center (Cleveland, Ohio) for **Sylramic-iBN Silicon-Carbide (SiC) Fiber**, a treatment for commercial Sylramic fiber that significantly improves intrinsic and surface fiber properties and provides ceramic composites with the highest available thermostructural properties.

The full list of awards can be accessed at http://www. rdmag.com.

The **Society for Biomaterials** has announced 2001 Awards.

Samuel Hulbert (Rose-Hulman Institute of Technology) received the **Founders Award** for "The Teaching of Biomaterials";

Ren-Ki Li (Toronto General Hospital) received the **Clemson Award for Applied Research** for "Creation of a Viable Graft Material Through Cell Engineering for Congenital Heart Surgery";

Antonio Mikos (Rice University) received the **Clemson Award for Contributions to the Literature** for "Synthetic Biodegradable Polymers for Tissue Engineering";

Kinam Park (Purdue University) received the **Clemson Award for Basic Research** for "Superporous Hydrogels for Biomedical and Pharmaceutical Applications";

Liping Tang (University of Texas) received the **Young Investigator Award** for "The Role of Adsorbed Proteins on the Persistence of Implant-Associated Bacteria";

Walter Aughenbaugh (University of Pennsylvania) received the **Undergraduate Student Award** for "*In Vitro* Controlled Release of Vancomycin from Silica Xerogel";

Ulrike Klueh (University of Connecticut) received the **MS Degree Student Award** for "Uses of Collagen-Related Peptides and Bacterial-Related Peptides to Bind and Orient Fibronectin on Surfaces";

Mark Ruegsegger (Case Western Reserve University) received the **PhD Degree Student Award** for "Reduced Protein Adsorption and Platelet Adhesion Controlled Variation of Oligomaltose Surfactant Polymer Coatings";

Norbert Weber (University of Tübingen) received the **PhD Degree Student Award** for "Gene Monitoring of Surface-Activated Monocytes in Circulating Whole Blood by Using Duplex RT-PCR"; and

Connie Kwok (University of Washington) received the **PhD Degree Student Award** for "Insulin Release from a pHEMA-PEGDMA 400 Matrix Coated with an Ultrasound-Responsive, Self-Assembled Molecular Barrier."

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