molecular orbital gap of the organic semiconductor and a transverse electric field applied at the semiconductor–dielectric interface. Trapping of the transferred charge in the polymer results in a controllable and stable-in-the-dark shift of the field-effect threshold, they said.

According to the researchers, the observed effect outlines new aspects of stability of organic devices and opens new possibilities for "programming" OFET characteristics and lithography-free patterning of the conduction channel with light.

VIVEK RANJAN

Liquid Changes to Gel on Demand

Twisted nanostructures are an important biological motif, such as the DNA double helix or proteins with helical sections important to their function. Artificial helices would be useful in nanotechnological applications. A team of researchers headed by Myongsoo Lee at Yonsei University in Seoul, Korea, has now created a molecular system that can form helices "on demand," turning the initially liquid solution into a gel.

As reported in the September 12 issue of *Angewandte Chemie International Edition* (p. 5810; DOI: 10.1002/anie.200501270), the researchers developed, as the basic building block for their helices, a molecule with a base consisting of three aromatic rings which is bent like a boomerang. The central ring has a long, branched side chain hanging from it. When a silver salt is added to a solution of these molecules, complexes form between the molecules and the positively charged silver ions; the "boomerangs" latch onto the silver ions. If the negatively charged counterion in the silver salt is boron tetrafluoride (BF_4^-), the complexes pile up into long, twisted columns. The BF_4^- ions fit into the cavity that remains inside the "belly" of the helices and stabilize them, turning the liquid into a jelly-like mass. Upon further study, the researchers found that the helices aggregate into regular bundles of fibers that tangle to form an interwoven, three-dimensional network. The liquid trapped inside this fibrous framework forms into a gel. If a fluoride salt is then added to the gel, it liquefies. This is a result of the attraction of the fluoride ions (F^-) for the silver ions, which are lured out of their complexes. The fibrous aggregates collapse back into individual molecules. This effect is reversible if the fluoride ions are trapped by the addition of other salts.

If salts containing $C_2F_5CO_2^-$ ions are added to the gel, it also liquefies. Electron microscopy images show that in this case, the phenomenon has a different cause. The complexes do not fall apart into individual molecules, but form individual zigzagging bands. The reason for this change in structure is the difference in size of the anions: $C_2F_5CO_2^-$ is larger than BF_4^- and does not fit into the cavity inside the helices; therefore, the helices are not stabilized. The result, said the researchers, is an "intelligent" nanomaterial whose properties can be switched solely by the choice of counterion.

News of MRS Members/Materials Researchers

André-Jacques Auberton-Hervé, co-founder, president, and CEO of Soitec, has been appointed to SEMI's International Board of Directors, serving as the association's European representative.

Keith Bowen, director of technology at Bede, Durham, U.K., and **Brian Tanner**, co-founder of Bede and professor of physics at the University of Durham,

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have received the **Charles S. Barrett Award** for exceptional contribution to the field of powder diffraction.

Richard O. Claus, the Lewis Hester Chair of Engineering in Virginia Tech's College of Engineering, who holds a joint appointment in the Departments of Materials Science and Engineering and Electrical and Computer Engineering, has been recognized among the **2005 Virginia Outstanding Faculty Members**. The Outstanding Faculty Awards Program is the highest honor for faculty at Virginia's public colleges and universities.

Claus Daniel of Saarland University, Germany, has been awarded the **Eugene P. Wigner Fellowship** (2005–2007) by Oak Ridge National Laboratory.

Rebekah Drezek, Jason Hafner, and **Michael S. Wong** of Rice University have received the inaugural grants from the **Smalley/Curl Fund for Innovation** of Rice University's Center for Nanoscale Science and Technology. The one-year grants are designed to provide faculty with the seed funds they need to develop novel ideas that have the potential of affecting all areas of nanotechnology.

Larry R. Faulkner, president of the University of Texas at Austin since 1998, has announced on June 30 his plans to resign as president. Faulkner was appointed the university's 27th president on December 16, 1997, and officially took office on April 13, 1998, after serving as provost, dean of the College of Arts and Sciences and head of the Department of Chemistry during 25 years at the University of Illinois at Urbana-Champaign.

Siegfried S. Hecker, a senior fellow and director emeritus of Los Alamos National Laboratory, will join the Center for International Security and Cooperation at Stanford University as a visiting professor in 2005–2006. He will teach undergraduate students and pursue research and policy advising on nuclear proliferation and the security of nuclear weapons stockpiles.

Linda Horton has been named director of the Center for Nanophase Materials Science (CNMS) at Oak Ridge National Laboratory. **Doug Lowndes** has been appointed as scientific director.

Carol M. Jantzen of Savannah River National Laboratory, South Carolina, has received the **Albert Victor Bleininger Award** from the Pittsburgh Section of the American Ceramic Society for distinguished achievement in the field of ceramics. Jantzen was presented with the award at the Materials Science & Technology 2005 Conference and Exhibition in Pittsburgh on September 27.

David J. Lockwood of the National Research Council of Canada has received the **2005 Canadian Association of Physicists Brockhouse Medal** for Outstanding Achievement in Condensed Matter and Materials Physics for his major contributions to the elucidation of fundamental optical effects in low-dimensional systems, and for his seminal work on the light-emitting properties of porous silicon.

Peizhen Kathy Lu, assistant professor of materials science and engineering at Virginia Tech, has been awarded a **Ralph E. Powe Junior Faculty Enhancement Award** from Oak Ridge Associated Universities to advance her research to add electrical conductivity to ceramic materials by incorporating carbon nanotubes.

John D. Mackenzie, the first holder of

In Memoriam

D. Allan Bromley, renowned nuclear physicist, science advisor to the former Bush administration, and the former dean of engineering at Yale University, died February 10 at age 78.

"Allan Bromley was a great scientist and a great leader," said Richard C. Levin, president of Yale University. "In three successive careers, he built our physics department, served the nation with distinction, and thoroughly revitalized engineering at Yale. With intelligence, energy, and enthusiasm he inspired countless students and colleagues. Where he led, we willingly followed."

Bromley was founder and director of the A.W. Wright Nuclear Structure Laboratory at Yale from 1963 to 1989. He carried out pioneering studies on both the structure and dynamics of atomic nuclei and was considered the father of modern heavy-ion science, a major field of nuclear science. At Yale, he served as chair of the Physics Department (1970–1977), held the Henry Ford II Professorship in Physics (1972–1993), was the first Sterling Professor of the Sciences, and was dean of engineering from 1994 to 2000.

For more than two decades, Bromley was a leader in the national and international science and science policy communities. As chair of the National Academy of Sciences' physics survey in the early 1970s, he was central to charting the future of physics in the subsequent decade. As president of the American Association for the Advancement of Science and of the International Union of Pure and Applied Physics, he was a leading spokesperson for U.S. science and international scientific cooperation.

The first person to hold the Cabinet-level rank of assistant to the president for science and technology, Bromley oversaw a fivefold increase in both the staff and budget of the White House Office of Science and Technology Policy between 1989 and 1993, where he served under President George H.W. Bush. Bromley strengthened the link between the science community and government policy, partly by revitalizing the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) and the President's Council of Advisors on Science and Technology (PCAST). He reconstituted the FCCSET so that its membership included the secretaries or deputy secretaries from the relevant independent agencies such as the National Science Foundation, the National Aeronautics and Space Administration, and the Environmental Protection Agency.

During his tenure as the president's science advisor, Bromley coordinated planning in areas of science that cut across disciplines and funding agencies, including global climate change, high-performance computing, math and science education, materials science, and biotechnology. The FCCSET's Subcommittee on Materials carried out for the first time a total inventory of what the federal government was actually spending on materials science, enabling Bromley to work with the government on prioritizing activities in this field.

Among his numerous honors and awards, Bromley received the National Medal of Science in 1988, the highest scientific honor awarded by the United States.

Born in Westmeath, Ontario, Canada, Bromley received a BSc degree with highest honors in 1948 in the Faculty of Engineering at Queen's University in Ontario. For his graduate work in nuclear physics, he received an MSc degree from Queen's University in 1950 and a PhD degree from the University of Rochester in 1952. He was subsequently awarded 32 honorary doctorates from universities in Canada, China, France, Germany, Italy, South Africa, and the United States.

Bromley served on a number of presidential commissions and on the boards of directors of several private-sector corporations; he was a founding partner of the Washington Advisory Group LLC.

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the UCLA Nippon Sheet Glass Co. Chair, has been selected to give the inaugural **Nippon Sheet Glass Lecture** by the Henry Samueli School of Engineering and Applied Science at the University of California at Los Angeles.

Albert Polman was named head of the Center for Nanophotonics at the FOM Institute AMOLF in Amsterdam, the Netherlands, when it officially opened on April 7, 2005. On April 14, he was appointed as temporary director of AMOLF.

Sara Prins of CSIR National Metrology Laboratory has been honored by the South African Department of Science and Technology at the **Women in Science Awards** for her contribution to science in the development of national standards and guidelines in electron microscopy and alloy development of advanced materials for technological applications. The awards were presented by the minister of science and technology, Mosibudi Mangena, in Johannesburg on August 12, 2005.

Elias Towe, professor of electrical and computer engineering and materials science and engineering at Carnegie Mellon University, has been named director of the Center for Nano-Enabled Device and Energy Technologies, recently formed within the university's Institute for Complex Engineered Systems.

Ashley White, a materials science and engineering senior at Virginia Tech, was named to the ***USA Today*** **All-USA College Academic First Team** (February 2005) and was selected for a British Marshall Scholarship (November 2004).

C. Grant Willson, professor of chemical engineering and of chemistry and biochemistry and holder of the Rashid Engineering Regents' Chair in the College of Engineering at the University of Texas at Austin, and **Hiroshi Ito** of IBM's Almaden Research Center, have been selected to receive a **2005 Heroes of Chemistry** award from the American Chemical Society for co-developing light-sensitive materials that are used for printing circuitry patterns on all current microprocessors and memory chips.

News of MRS Corporate Affiliates/Materials Institutions

Nano Coalition Unveils Environmental Health and Safety Online Database

The International Council on Nanotechnology (ICON) and Rice University's Center for Biological and Environmental Nanotechnology (CBEN), located in Houston, Texas, have launched an online database of scientific findings related to the benefits and risks of nanotechnology. The database can be accessed at Web site http://icon.rice.edu/research.cfm. The mission of this environmental health and safety database is to integrate the vast and diverse scientific literature on the impacts of nanoparticles; plans are underway to update and enhance its capabilities over the next year.

The database is maintained by ICON as a free public service. ICON, a coalition of academic, industrial, governmental, and civil society organizations, is administered by CBEN.

Backing from AMRC Benefits Promising High-Tech Startups in Texas

Four up-and-coming high-tech companies that started in Texas are receiving technological and financial boosts from the Advanced Materials Research Center (AMRC), the joint advanced research and development effort involving SEMATECH and Texas universities.

The AMRC beneficiaries are Molecular Imprints, which provides enabling lithography systems for manufacturing applications in nanodevices, microstructures, advanced packaging, biodevices, optical components, and semiconductor devices (C. Grant Willson and S.V. Sreenivasan, University of Texas); OrganicID, which is developing a low-cost, organic electronic process technology designed to replace bar codes with printable electronic radio-frequency (RF) ID tags (Ananth Dodabalapur, University of Texas); Xidex Corp., which works toward applications of nanotechnology for semiconductor production (Keith Stevenson, University of Texas); and Zyvex Corp., which focuses on molecular nanotechnology.

Purdue's Oncological Center to Bring Together Medical and Engineering Specialists

Purdue University announced in July the formation of the Oncological Sciences Center, an interdisciplinary research facility that will increase the university's contribution to the battle against cancer.

"The creation of the Oncological Sciences Center offers a wonderful opportunity to bring together life scientists, engineers, and experts in communication and human behavior to assault the cancer problem," said Marietta Harrison, interim director of the center and a professor of medicinal chemistry in the College of Pharmacy, Nursing, and Health Sciences. The center is the newest facility to be announced at Purdue's Discovery Park, the university's interdisciplinary research and enterprise hub.

With the center's assistance, Harrison said, nanoparticles could be designed for radically improved imaging for early detection of tumors, and chip-based biosensors could be generated for ultrasensitive detection of cancer markers from serum and blood. Additionally, the development of molecules, particles, and devices that can deliver lethal chemicals and drugs to cancer cells could become a reality.

"Approaches to cancer therapeutics are changing rapidly with the dawn of the age of nanomedicine," said Harrison. "Cancer drug development traditionally has been driven by collaborative efforts among biologists and chemists to generate agents that stop cancer cells from growing. Now, the ability to integrate engineering concepts into early cancer detection, as well as the drug design and development process, opens possibilities that could only be imagined a decade ago."

USC Viterbi School of Engineering Receives $15 Million Gift from Mork Family

Energy entrepreneur John Mork and his family have given $15 million to the University of Southern California's Viterbi School of Engineering to name the newly merged Mork Family Department of Chemical Engineering and Materials Science, which includes petroleum engineering.

"Advances at the nano–bio–chemical interface will have a significant impact on many fronts, including our ability to develop a new means of energy production, for example, through fuel cells and new materials to facilitate the conversion of natural gas to hydrogen," said Mork, chief executive officer of the privately owned Energy Corporation of America (ECA), based in Denver.

"This gift is the largest ever naming gift for any academic department of the University of Southern California," said USC President Steven B. Sample, at the announcement ceremony held September 16, 2005. "We are deeply indebted to John Mork, who is a visionary alumnus and partner committed to academic endeavors of the highest caliber." USC said that the Mork family's naming gift will allow the department to strengthen its research and teaching in fields of vital importance to society, while enabling faculty and students to collaborate across disciplines. □

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