tion and characterization of carbon nanotube optoelectronic devices made by using two different methods, both of which employ light-sensitive polymers and carbon nanotubes on silicon wafers. In one method, Au/Ti contacts were patterned on silicon wafers, and then a composite of polymer and nanotubes was deposited. In the second method, nanotubes were grown by chemical vapor deposition on a silicon wafer, then Au/Ti contacts were patterned, and finally the polymer was deposited. Both methods produced light-sensitive nanotube field-effect transistors (NT-FETs). However, NT-FETs fabricated by the second method also work as optoelectronic memories that can be controlled independently, as shown by the change in spectral response of the device using various polymers with unique light absorption characteristics.

Using the second method, a layer of either PmPV, poly{(m-phenylene-vinylene)-co-[2,5-dioctyloxy-*p*-phenlyene)vinylene]}, or P3OT, poly(3-octylthiolphene-2,5-diyl), was deposited over the contacts/nanotubes by drop-casting a solution of the polymer in $CHCl_3$. The optoelectronic memory device functions in a two-step sequence: The polymer layer absorbs incoming photons and converts them to excitons, after which the hole is transferred to the carbon nanotubes, preventing or delaying its recombination with the electron; these charged nanotubes then serve as electrodes to read and erase stored charge.

This novel research is a marked change from previously reported nanotube-based optical devices because the photons are directly absorbed by the polymer, as opposed to previous works that utilize the band absorption of nanotubes or photodesorption of molecular species. When devices are fabricated with both types of polymer, PmPV and P3OT, on neighboring devices, distinct and independent absorption behavior is observed, as shown in the current-versus-time response to light illumination of the modified NT-FETs (Figure 1). Therefore, depending on the type of light-sensitive polymer used for the coating, the nanodevices can be tuned independently.

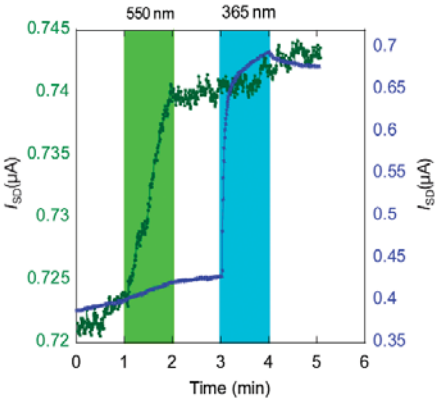

Figure 1. Optoelectronic response to light of nanotube field-effect transistors coated with PmPV (blue trace) and P3OT (green trace). Shaded regions (blue: UV light, λ = 365 nm; green: visible light, λ = 550 nm) and unshaded regions mark the light-on and -off periods, respectively. Reprinted in part with permission from Nano Lett. ***4*** *(9) (September 8, 2004) p. 1590. ©2004 American Chemical Society.*

Although the electronic properties of these devices exhibit long-term changes in state as a result of illumination, they can be reset electronically by sweeping the gate voltage. The researchers said that these optical sensors may find application as replacements for charge-coupled devices in high-speed cameras.

ADITI S. RISBUD

News of MRS Members/Materials Researchers

Siamak Akhlaghi, project scientist at Micralyne Inc. (Edmonton, Alberta, Canada), has received the **Silver Abner Brenner Award** from the American Electroplaters and Surface Finishers Society (AESF) for the best paper published in the *Plating and Surface Finishing Journal* during the year 2003. The award-winning article, "Effect of Processing Parameters on the Electroplating of Au-Sn Solders," focuses specifically on a co-electroplating process that has been developed for depositing Au/Sn alloys, from a slightly acidic, chloride-based solution using pulsed currents, onto patterned or blanket metallized ceramic and semiconductor substrates.

Robert J. Birgeneau, physicist and currently president of the University of Toronto, has accepted the position of chancellor of the University of California, Berkeley. He expects to begin his tenure in October. Outgoing chancellor Robert M. Berdahl has held the position for seven years and will join the UC–Berkeley faculty.

Howard E. Katz, 2004 MRS President, has accepted a position as a professor of materials science and engineering at Johns Hopkins University's Whiting School of Engineering, beginning this fall. Katz has been a Distinguished Member of Technical Staff at Bell Laboratories,

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where he began his independent career in 1982.

Jagdish (Jay) Narayan (North Carolina State University) has received the **2004 Edward DeMille Campbell Memorial Lecture and Prize** of ASM International. He will deliver the Campbell lecture, "New Frontiers in Thin-Film Growth and Nanomaterials," at the ASM International Meeting in October in Columbus, Ohio.

Kyoko Nozaki (University of Tokyo) has received the John Wiley & Sons Inc. and the Society of Polymer Science, Japan (SPSJ), **2004 SPSJ–Wiley Award** for the article "Asymmetric Synthesis of Optically Active Polymers Catalyzed by Metal Complexes."

Bob R. Powell (GM Research and Development Center) has received the **GM 2003 John M. Campbell Award** for "fundamental studies of creep deformation in magnesium alloys."

Takeo Sasaki (Science University of Tokyo) has received the John Wiley & Sons Inc. and the Society of Polymer Science, Japan (SPSJ), **2004 SPSJ–Wiley Award** for the article "Photorefractive Effect of Liquid-Crystalline Materials."

Robert L. Snyder (Georgia Institute of Technology) has received the **2004 J.D. Hanawalt Award** from the International Centre for Diffraction Data (ICDD) in recognition of excellence in the field of x-ray powder diffraction.

Winnie Wong-Ng (National Institute of Standards and Technology) has received the **2004 McMurdie Award** from the International Centre for Diffraction Data (ICDD) in recognition of her contributions to the computer-aided evaluation of x-ray powder patterns and editing of the Powder Diffraction File, as well as her work in enhancing the accuracy of powder methods of x-ray crystallography.

The National Academy of Engineering (NAE) announced its list of innovative young engineers (ages 30–45) performing cutting-edge engineering research and technical work in a variety of disciplines selected to participate in the 10th annual Frontiers of Engineering symposium held in September, including MRS members:

Cameron Abrams, Drexel University

Valerie Leppert, University of California, Merced

John Muth, North Carolina State University

Hock Hg, Bell Laboratories, Lucent Technologies

Shawn Phillips, Air Force Research Laboratory Propulsion Directorate

Sujatha Ramanujan, Eastman Kodak Co.

Ainissa Ramirez, Yale University

Yang Shao-Horn, Massachusetts Institute of Technology

News of MRS Corporate Affiliates/Materials Institutions

The **Center for Biological and Environmental Nanotechnology** at Rice University (Houston, Texas) has received a $100,000 grant from the National Science Foundation to develop an introductory nanotechnology course titled "Nanotechnology: Content and Context," that is being offered jointly by the Departments of Chemistry and Anthropology this fall (*www.ruf.rice.edu/~cben*).

The **Center for Optical Materials Science and Engineering Technologies (COMSET)** at Clemson University was recently named a South Carolina Research Center of Economic Excellence and approved for a $10 million endowed professorship in optical materials (*http://comset.clemson.edu*).

The **Facilities for Materials Characterization** recently opened at Dalhousie University, Halifax, Nova Scotia, Canada, and are managed by the university's Institute for Research in Materials. The organization was developed to enhance the ability of academic, government, and industrial researchers to characterize materials (*www.irm.dal.ca/fmc.html*).

FEI Company announced that the **Ernst Ruska Center for Microscopy and Spectroscopy with Electrons** (Jülich, Germany) has selected it as a partner for developing the "next era of analytical microscopy" (*www.feicompany.com; www.er-c.org*).

Hysitron Inc. (Eden Prairie, Minn.) and **Lawrence Berkeley National Laboratory** (Livermore, Calif.) have been awarded a Department of Energy (DOE) Small Business Innovation Research (SBIR) grant for developing a quantitative *in situ* transmission electron microscope (TEM) nanoindentation apparatus. The purpose of this product is to quantitatively measure load and displacement with real-time TEM imaging in order to study the mechanical response of materials under stress or strain (*www.hysitron.com; www.llnl.gov*).

The **Oregon Nanoscience and Microtechnologies Institute (ONAMI)** held its grand opening in May 2004. ONAMI conducts research in nanoscience, materials characterization, microfluidics, and microfabrication and applies the research to both short- and long-term commercial opportunities. The institute is a combined effort of universities, high-tech industry, and national laboratories in Oregon. The facilities will be housed at the University of Oregon, Oregon State University, and Portland State University (*www.onami.us*).

Rapra Technology (Shrewsbury, U.K.), an independent polymer research and test house, has introduced a service called "polymer contents." There is no charge for this service, and it is custom-created to the needs of individual subscribers. Every month Rapra abstracts 400 journals, conference papers, and other publications. A digest of this information is available at http://www.polymercontents.com (*www.rapra.net*).

The **University of Oregon** (Eugene) has received a grant from the National Science Foundation to purchase a new scanning electron microscope configured for electron-beam lithography. The new system will upgrade and expand the capabilities of CAMCOR (the Center for Advanced Materials Characterization in Oregon), the university's nanoscience and materials science characterization and fabrication facility, which is open to researchers both on- and off-campus (*http://materialscience.uoregon.edu/*). □

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