


**David Hecht**

Guest Editor for this issue of *MRS Bulletin*

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Hecht is currently an engineer at TE Connectivity Touch Solutions, formerly Elo Touchsystems, where he is developing advanced acoustic and capacitive touch screens. He performed his PhD degree research at the University of California, Los Angeles, from 2003 to 2007, where he studied charge transport in nanoscale films and devices. He received his BS degree in physics in 2001 from the University of California, San

Diego. Prior to his work at Elo, Hecht was the first scientist at Unidym, where he worked on the commercialization of printable carbon nanotube films as an ITO replacement. He has also worked at Quantum Magnetics, where he built advanced magnetometers for biomedical and military applications, and the University of Wollongong studying DNA composite films. He is a Materials Creation Training Program Integrative Graduate Education and Research Traineeship fellow, a Pauley fellow, and recipient of the Harvard Book Award.


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Kaner is a professor at the University of California, Los Angeles (UCLA). He received a PhD degree in inorganic chemistry from the University of Pennsylvania in 1984, working with Professor Alan MacDiarmid (Nobel Laureate 2000). After carrying out postdoctoral research at the University of California, Berkeley, Kaner joined UCLA in 1987 as an assistant professor. He was

promoted to associate professor with tenure in 1991 and became a full professor in 1993. He has published more than 250 papers in peer-reviewed journals and holds 13 U.S. patents with a further 16 pending. Kaner has received awards from the Dreyfus, Fulbright, Guggenheim, and Sloan Foundations, as well as the Exxon fellowship in Solid State Chemistry, the Buck-Whitney Research Award, and the Tolman Medal from the American Chemical Society for his work on refractory materials—including new synthetic routes to ceramics, intercalation compounds, superhard materials, graphene, and conducting polymers. He has been elected as a Fellow of the American Association for the Advancement of Science (AAAS) and the Materials Research Society (MRS).


**Jonathan Coleman**

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Coleman is a professor of chemical physics in the School of Physics at Trinity College Dublin. He received both his BA degree in physics and his PhD degree from Trinity College. The focus of his research is liquid exfoliation of van der Waals bonded nanomaterials, such as carbon nanotubes, graphene, and inorganic layered compounds. Exfoliation of these materials allows them to be processed into functional materials.

Coleman's group works extensively in the areas of solution-processed thin films for transparent conducting applications and high strength nanostructured composites. He has published approximately 150 papers in international journals and was recently listed by Thomson Reuters among the world's top 100 materials scientists of the last decade.


**Yi Cui**

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Cui is an associate professor in the Department of Materials Science and Engineering at Stanford University and a David Filo and Jerry Yang Faculty Scholar. He earned a bachelor's degree in chemistry (1998) from the University of Science and Technology of China. He obtained his PhD degree in chemistry in 2002 from Harvard University. From 2002 to 2005, Cui worked as a Miller Postdoctoral Fellow at the University of California,

Berkeley. In 2005, he became an assistant professor in the Department of Materials Science and Engineering at Stanford University and was promoted to tenured associate professor in 2010. His current research is on designing nanomaterials for photovoltaic, batteries, supercapacitors, topological insulators, biology, and environment. Cui has received the Wilson Prize, the David Filo and Jerry Yang Faculty Scholar award, the Sloan Research Fellowship, the KAUST Investigator Award, the Office of Naval Research Young Investigator Award, the MDV Innovators Award, a Terman Fellowship, and the Technology Review World Top Young Innovator Award.


**Eric N. Dattoli**

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Dattoli is presently a National Research Council postdoctoral associate at the National Institute for Standards and Technology, Biochemical Science Division in Gaithersburg, MD. He received his PhD degree in electrical engineering from the University of Michigan in 2010, and his BS degree from the University of Florida in 2006. The focus of Dattoli's research has been on the use of metal oxide nanowires as the basis for improved sensors

and electronic devices. He has contributed to nine publications in journals such as *Nano Letters*, *Applied Physics Letters*, and *IEEE Electron Device Letters*.


**Sukanta De**

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De is a research fellow in the Center for Research in Adaptive Nanostructures and Nanodevices (CRANN) at Trinity College Dublin. He performed his PhD degree research at the Indian Association for Cultivation of Science—obtaining his degree from Jadavpur University, India, in 2006. During his PhD degree studies, De worked mainly on charge transport and optoelectronic

properties of intercalated polymer nanocomposites. He subsequently joined Professor J.N. Coleman's group at Trinity College Dublin as a postdoctoral researcher. His research at Trinity College focuses on the development of flexible, transparent electrodes from nanostructured materials.


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Elschner is a staff member at Heraeus, Germany. He was educated as a solid-state physicist at the University of Marburg (Germany), where he received his PhD degree with a thesis on laser spectroscopy on organic glasses in 1988. Following his postdoctoral year at Stanford University, he joined the Central Research of Bayer AG in 1990. At Bayer, his research on PEDOT started in the early 1990s. As a staff member of H.C. Starck (Heraeus since 2010),

Elschner's research is focused on organic electronics. Currently, he is responsible for testing and characterizing organic devices and conducting polymers.

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**Liangbing Hu**

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Hu is an assistant professor in the Department of Materials Science and Engineering at the University of Maryland. He was a postdoctoral research fellow with Professor Yi Cui at Stanford University. He earned his BS degree in applied physics from the University of Science and Technology of China in 2002. He did his PhD degree studies in experimental physics with

Professor George Gruner at the University of California, Los Angeles, with a focus on the charge transport and optoelectronic properties of carbon nanotube thin films. In 2006, he joined Unidym as a co-founding scientist. In Unidym, Hu's role was mainly on development of carbon nanotube ink, roll-to-roll coating, encapsulation, and device integrations in touch panels, LCDs, flexible OLEDs, and printed solar cells. Currently, Hu's research focuses on nanomaterials and nanostructures for energy storage and conversion applications such as silicon and paper batteries, energy textile, and novel transparent conductors.

**Wilfried Lövenich**

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Lövenich is a scientist with Heraeus, Germany. He received his diploma in chemistry from the Technical University of Aachen, Germany. He then went to the University of Durham, UK, to obtain his PhD degree, studying the effect of fluorine substitution on conjugated polymers. In 2002, Lövenich joined the electronic materials division of H.C. Starck, working on the development and pilot plant production of the conductive polymer PEDOT. In 2010, the business of conductive polymers was transferred from H.C. Starck to Heraeus.

**Wei Lu**

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Lu is an associate professor in the Electrical Engineering and Computer Science Department at the University of Michigan (UM), Ann Arbor. He received his BS degree in physics from Tsinghua University, Beijing, China, in 1996, and his MA and PhD degrees in physics from Rice University in 1999 and 2003, respectively. From 2003 to 2005, Lu was a postdoctoral research fellow at Harvard University. He joined the faculty of UM in 2005. His research interests lie in the application and fundamental understanding of nanostructures and nanodevices, including high-density memory and logic devices based on two-terminal resistive switches (memristors), semiconductor nanowire-based electronics, electrical transport in nanoscale structures, and nano-electromechanical systems. He is a co-editor-in-chief for *Nanoscale*, a member of the IEEE, American Physical Society, Materials Research Society, and an active member of two IEEE technical committees and several program committees. Lu also was a recipient of a National Science Foundation CAREER Award.

Lu is an associate professor in the Electrical Engineering and Computer Science Department at the University of Michigan (UM), Ann Arbor. He received his BS degree in physics from Tsinghua University, Beijing, China, in 1996, and his MA and PhD degrees in physics from Rice University in 1999 and 2003, respectively. From 2003 to 2005, Lu was a postdoctoral research fellow at Harvard University. He joined the faculty of UM in 2005. His research interests lie in the application and fundamental understanding of nanostructures and nanodevices, including high-density memory and logic devices based on two-terminal resistive switches (memristors), semiconductor nanowire-based electronics, electrical transport in nanoscale structures, and nano-electromechanical systems. He is a co-editor-in-chief for *Nanoscale*, a member of the IEEE, American Physical Society, Materials Research Society, and an active member of two IEEE technical committees and several program committees. Lu also was a recipient of a National Science Foundation CAREER Award.

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Niu has been the vice president of research and development at Unidym since 2008, where he directs R&D on transparent CNT conducting films. Niu received his MS degree in heterogeneous catalysis from Nanjing University and his PhD degree in solid-state chemistry from Brown University. He was a postdoctoral associate at Columbia University and Harvard University. Prior to Unidym, he served as the director

of chemistry at Nanosys for seven years and worked on semiconductor nanomaterials synthesis and applications. From 1993 to the end of 2001, Liu carried out research and development on MWNT at Hyperion Catalysis.

**Henning Rost**

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Rost is a senior project manager at PolyIC. He studied chemistry and earned his PhD degree at the University of Jena, Germany, studying functional conjugated polymers. After working as a postdoctoral researcher at the University of Cambridge, UK, he joined Osram Sylvania Inc. as a principal scientist. By the transfer of Siemens' polymer electronics activities, Rost joined the newly founded PolyIC company in 2003. He is a co-inventor on more than 70 patents and

co-author of more than 50 peer-reviewed papers.

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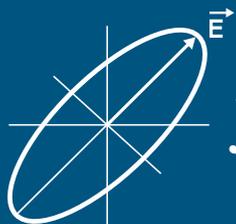
Woerle has been a research scientist at PolyIC since 2005. She studied chemistry and earned her PhD degree at the University of Freiberg, Germany, in 2005 for the synthesis of new semi-conducting materials used in OLEDs. Since 2007, she has been a group leader at PolyIC for materials and devices and is additionally responsible for the development of new product ideas.

**Hui Wu**

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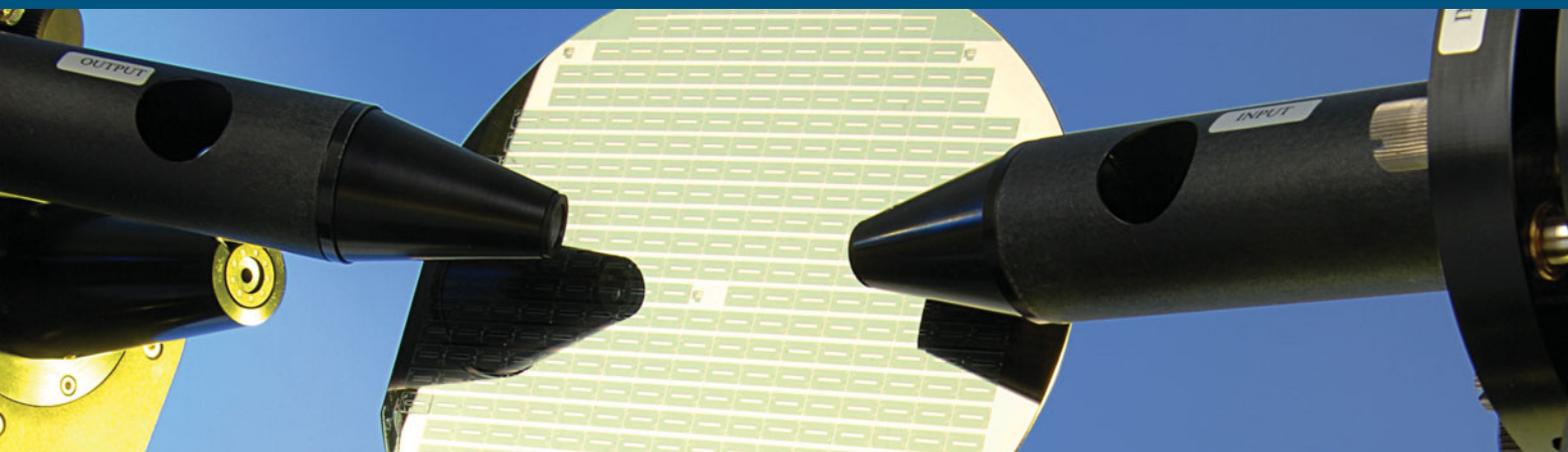
Wu has been a postdoctoral research fellow in Professor Yi Cui's group at Stanford University since 2009. He received his BS degree in polymer science in 2004 from Tsinghua University, Beijing, China. Wu earned his PhD degree in materials science in 2009 from Tsinghua University under the supervision of Professor Wei Pan, with a focus on the chemical synthesis and physical properties of functional polymer

and ceramic nanofibers. His research interests include electrospinning and solution synthesis of low-dimensional nanomaterials for applications in energy storage and conversion, flexible electronics, and transparent electrodes.



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