

# MRS Bulletin

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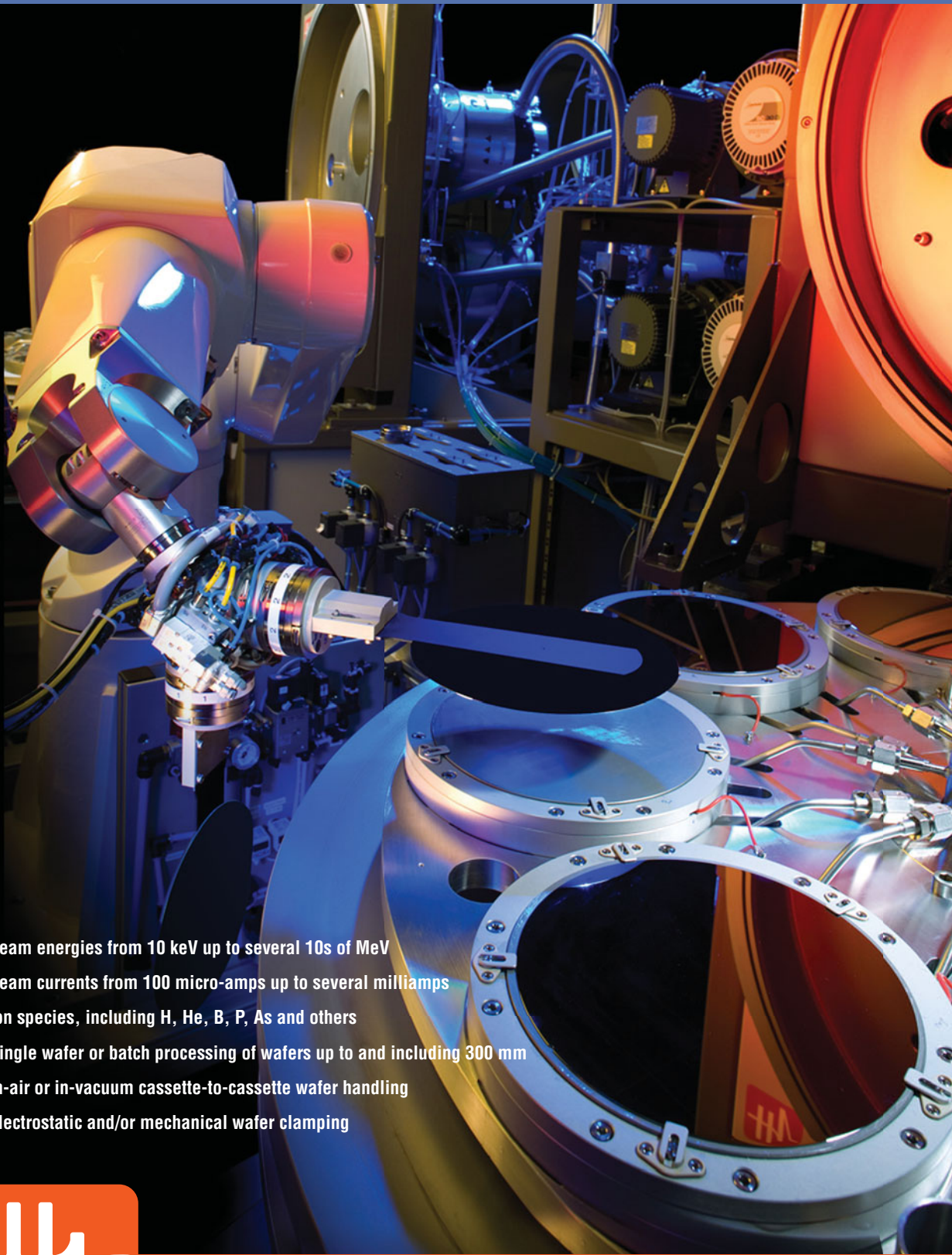
## Organic nanoparticles for drug delivery and imaging

### ALSO IN THIS ISSUE

A topological twist  
on materials science

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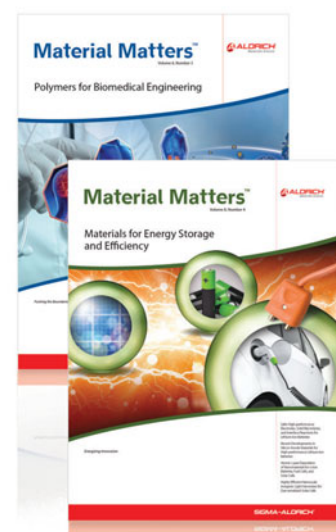
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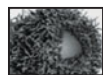


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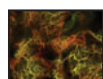
## CONTENTS

## ORGANIC NANOPARTICLES FOR DRUG DELIVERY AND IMAGING

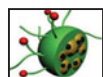


- 219 **Organic nanoparticles for drug delivery and imaging**  
Samir Mitragotri and Patrick Stayton, Guest Editors

224 **Meet Our Authors**



- 227 **Understanding nano-bio interactions to improve nanocarriers for drug delivery**  
Ryan M. Pearson, Hao-jui Hsu, Jason Bugno, and Seungpyo Hong



- 239 **Theranostic applications of organic nanoparticles for cancer treatment**  
Ji Young Yhee, Sohee Son, Namho Kim, Kuiwon Choi, and Ick Chan Kwon

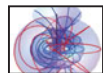


- 251 **Recent progress with multicompartmental nanoparticles**  
Sahar Rahmani and Joerg Lahann



- 259 **Clinical translational challenges in nanomedicine**  
Shiladitya Sengupta

## TECHNICAL FEATURE



- 265 **A topological twist on materials science**  
Sanju Gupta and Avadh Saxena

## Energy Quarterly



- 213 **Editorial**  
**Maintaining hope for sustainable energy**  
Sossina M. Haile

- 214 **Regional Initiative**  
**Israel makes an ambitious move on alternative fuels**  
Prachi Patel  
FEATURE EDITOR: Anat Bonshtien

- 216 **Interview**  
**Superconductivity to cosmology: K. Alexander Müller explores mysteries in energy**  
Interviewed by Anke Weidenkaff

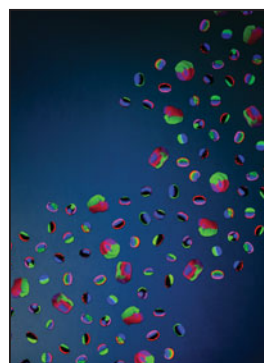
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## DEPARTMENTS



## OPINION

- 198 **Letter from the President**  
**The MRS mission and industry**  
Tia Benson Tolle and Shenda Baker



## ON THE COVER

**Organic nanoparticles for drug delivery and imaging.** A number of organic nanoparticles have been developed to encapsulate and deliver therapeutic and imaging agents. The articles in this issue of *MRS Bulletin* highlight applications of organic nanoparticles for therapeutic delivery and imaging, and focus on recent advances in this field. The cover shows one-, two-, and three-patch surfaces

of multicompartmental particles that, because of their unique characteristics, can be selectively surface-modified based on the incorporated functional polymers. Different fluorescent labeled molecules were used on the surface and within each compartment of the particles shown, which were then imaged with a confocal microscope. Such particles can be used for drug delivery, tissue engineering, self-assembly, and novel gel formation. Image courtesy of Sahar Rahmani. See the technical theme that begins on page 219.



## NEWS & ANALYSIS

### 202 Materials News

- **Molecule transforms metal–organic framework to become conducting**  
Meg Marquardt
- **Inexpensive organic flow battery is metal-free**
- **Contact lens elutes glaucoma medication sustainably for one month**  
Jen Gordon
- **Skin pigment enables edible battery for biodegradable devices**  
Prachi Patel
- **Quantitative STEM technique extracts 3D atom stacking information from 2D image**  
Dirk Wouters

### 209 Science Policy

- **US Congress proposes alternative to COMPETES Act**  
Jennifer A. Nekuda Malik
- **European Commission launches pilot to open publicly funded research data**



## FEATURES

### 303 Posterminaries

- **Famous last words**  
Tim Palucka



## 282 SOCIETY NEWS

- **Materials Research Society celebrates 40th anniversary with more cutting-edge research at the 2013 MRS Fall Meeting**
- **Remembering the legacy of Fred Kavli**  
Lori A. Wilson
- **John J. Tracy of Boeing to give plenary address at 2014 MRS Spring Meeting**
- **MRS expands materials publications landscape**  
Birgit Schwenzer
- **Materials Research Society 2013 year-end review**



## 296 CAREER CENTRAL

### ADVERTISERS IN THIS ISSUE

### Page No.

* Aldrich Materials Science .....	193
American Elements .....	Outside back cover
Annual Reviews .....	207
* Asylum Research an Oxford Instruments Company .....	238
* Chemistry of Materials .....	200
* CRAIC Technologies, Inc. ....	225
* CRC Press .....	212
High Voltage Engineering .....	Inside front cover
Hindawi Publishing Corporation .....	Inside back cover
* HORIBA Scientific .....	250
* International Centre for Diffraction Data (ICDD) .....	211
* JEOL USA, Inc. ....	197
* Kurt J. Lesker Company .....	226
* Lake Shore Cryotronics, Inc. ....	218
Lehigh Microscopy School .....	264
* National Electrostatics Corp. ....	223
* Rigaku Corporation .....	237
Wiley .....	205
J.A. Woollam Company, Inc. ....	203
XENON Corporation .....	210

\* Please visit us at the exhibit, April 22–23, during the 2014 Materials Research Society Spring Meeting in San Francisco.



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The Materials Research Society (MRS), a not-for-profit scientific association founded in 1973 and headquartered in Warrendale, Pennsylvania, USA, promotes interdisciplinary materials research. Today, MRS is a growing, vibrant, member-driven organization of over 16,000 materials researchers spanning over 80 countries, from academia, industry, and government, and a recognized leader in the advancement of interdisciplinary materials research.

The Society's interdisciplinary approach differs from that of single-discipline professional societies because it promotes information exchange across many scientific and technical fields touching materials development. MRS conducts three major international annual meetings encompassing approximately 125 topical symposia, and also sponsors numerous single-topic scientific meetings. The Society recognizes professional and technical excellence and fosters technical interaction through University Chapters. In the international arena, MRS implements bilateral projects with partner organizations to benefit the worldwide materials community. The Materials Research Society Foundation helps the Society advance its mission by supporting various projects and initiatives.

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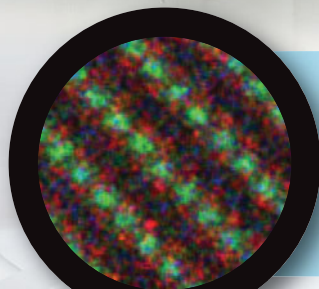
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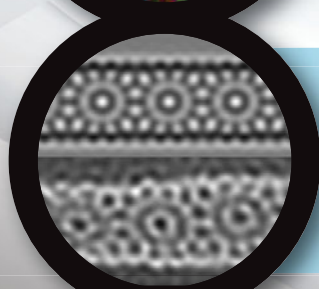
JEM-ARM200F



**Dr. John Bradley**  
University of Hawaii

*Commercial NCM Cathode Material for Li-Ion Batteries. Atomic EDS map. Overlay shows O (red), Ni (blue), Mn (green).*

— 0.5nm

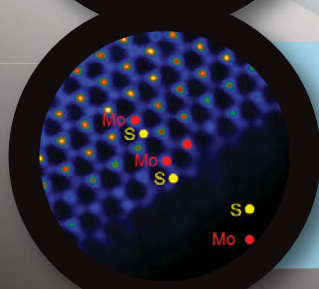


**Dr. Miguel Jose Yacaman**

University of Texas, San Antonio  
Sample provided by Tour Lab, Rice University

*Chiral Nanotube with parameters  $n=10$  and  $m=4$  (simulated and experimental).*

— 0.5nm



**Dr. Moon Kim**  
University of Texas, Dallas

*STEM HAADF image of transferred MoS<sub>2</sub>, showing Mo and S atom positions and their 2H stacking sequence.*

— 0.5nm

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