

MRS Bulletin

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Patterning via self-organization and self-folding

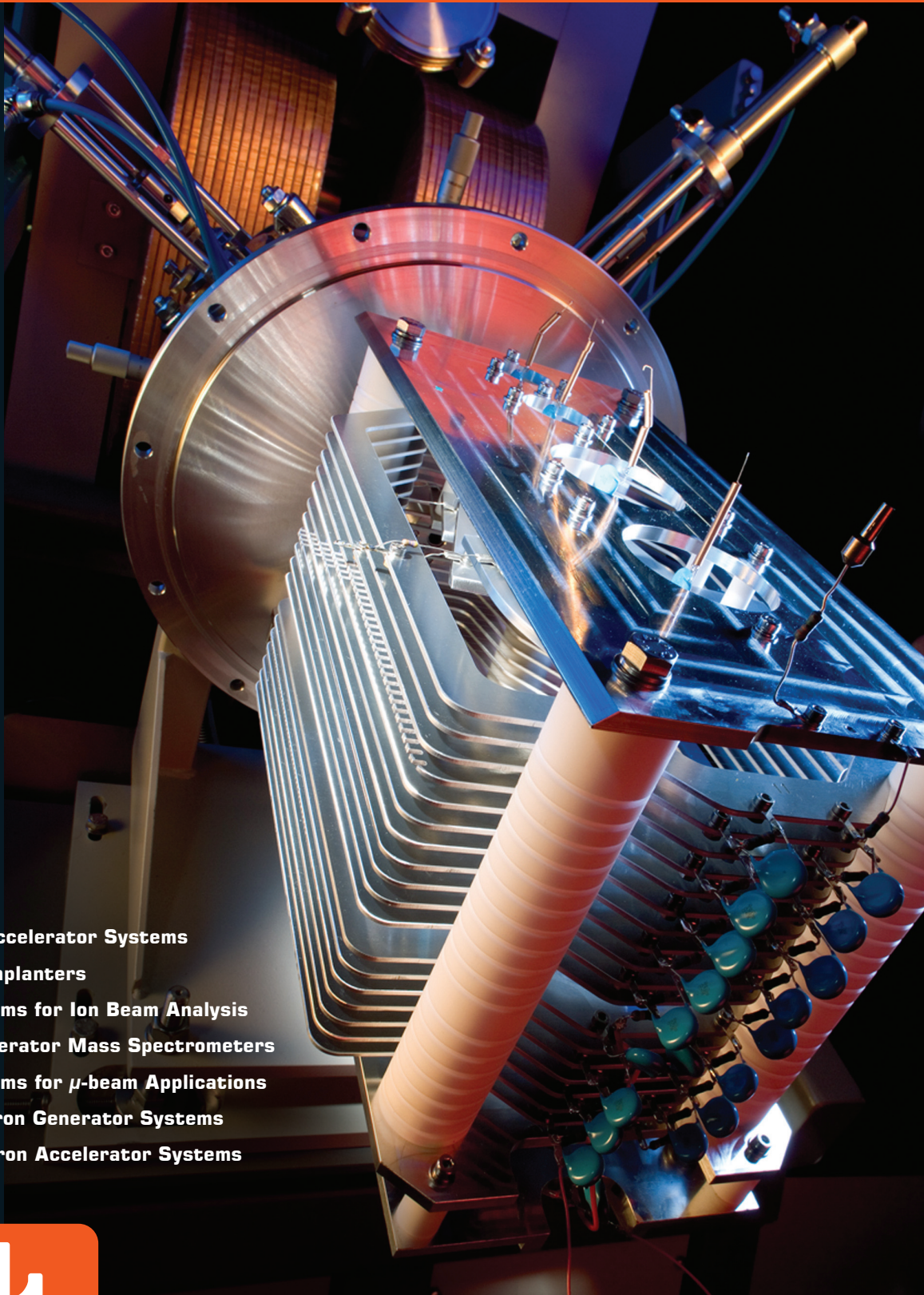


ALSO IN THIS ISSUE

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the environment, and materials

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CONTENTS

PATTERNING VIA SELF-ORGANIZATION AND SELF-FOLDING



- 93 **Patterning via self-organization and self-folding: Beyond conventional lithography**
Sung Hoon Kang and Michael D. Dickey,
Guest Editors

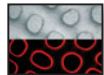
97 **Meet Our Authors**



- 100 **Functional nanostructured materials based on self-assembly of block copolymers**
W. Bai and C.A. Ross



- 108 **Three-dimensional lithography by elasto-capillary engineering of filamentary materials**
Sameh H. Tawfick, José Bico, and Steven Barcelo



- 115 **Beyond wrinkles: Multimodal surface instabilities for multifunctional patterning**
Qiming Wang and Xuanhe Zhao



- 123 **Origami MEMS and NEMS**
John Rogers, Yonggang Huang, Oliver G. Schmidt,
and David H. Gracias

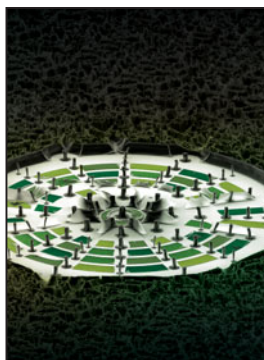


- 130 **Design of super-conformable, foldable materials via fractal cuts and lattice kirigami**
Shu Yang, In-Suk Choi, and Randall D. Kamien

TECHNICAL FEATURE



- 139 **Energetics at the nanoscale: Impacts for geochemistry, the environment, and materials**
Symposium X (Frontiers of Materials Research) presentation
2015 MRS Spring Meeting
Alexandra Navrotsky



ON THE COVER

Patterning via self-organization and self-folding. Pattern formation by self-organization and self-folding provides unique opportunities for the materials community by addressing many of the issues associated with conventional lithography. The articles in this issue of *MRS Bulletin* focus on various methods of patterning using self-organization and self-folding. Most of these methods seek to control and pattern diverse materials

across a range of length scales at low cost in a way that gives rise to new functionalities. The cover shows one example of how capillary forces can deform vertical carbon nanotubes (CNTs) to create an arrangement of circular patterns on a sub-millimeter scale, with the same complexity of real crop circles spanning 100 meters or more in diameter. When covered by a liquid droplet, some of the straight CNTs remain vertical, while others self-fold onto the substrate as dictated by their initial geometry, demonstrating the control that can be achieved by elasto-capillary engineering. Image courtesy of S. Tawfick and A. John Hart. See the technical theme that begins on page 93.

DEPARTMENTS



NEWS & ANALYSIS

85 Materials News

- **Silk-collagen scaffolds engineered to create cortical brain tissue model**
YuHao Liu
- **3D printing sends ceramics to the queue**
Lukmaan Bawazer
- **Inorganic-organic hybrid distributed Bragg reflectors heighten electrical conductance**
Hannah Stern
- **Nanothermodynamics modeling characterizes electrum at the nanoscale**
Meg Marquardt

91 Science Policy

- **House bill seeks to secure energy critical elements**
Jennifer A. Nekuda Malik
- **Energy mix models make a case for increasing EU renewable targets**



146 SOCIETY NEWS

- **Preview: 2016 Materials Research Society Spring Meeting & Exhibit in Phoenix**
- **MRS invites nominations for the Von Hippel Award, Turnbull Lectureship, MRS Medal, Materials Theory Award, and Kavli Early Career Lectureship**

Special Insert

- **2016 MRS Member Benefits & Society Activities**



FEATURES

165 Books

- **Applications of Graphene and Graphene-Oxide Based Nanomaterials**
Sekhar Chandra Ray
Reviewed by K.S.V. Santhanam
- **Scanning Probe Microscopy: Atomic Force Microscopy and Scanning Tunneling Microscopy**
Bert Voigtländer
Reviewed by Sidney Cohen
- **Herbert Fröhlich: A Physicist Ahead of His Time**
G.J. Hyland
Reviewed by Ram Devanathan

168 Image Gallery Look Again



167 CAREER CENTRAL

ADVERTISERS IN THIS ISSUE

Page No.

Aldrich Materials Science	Inside back cover
American Elements	Outside back cover
High Voltage Engineering.....	Inside front cover
Rigaku Corporation.....	89
SVC TechCon 2016.....	145
University of Central Florida,.....	81



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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 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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