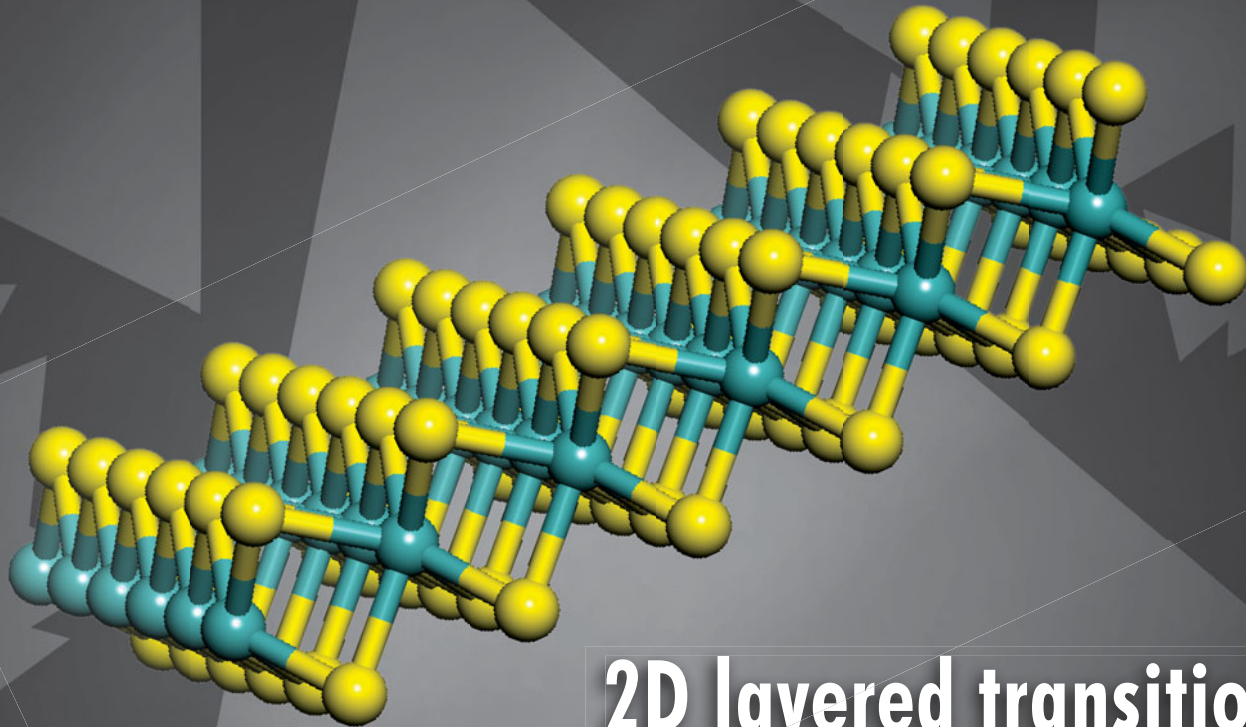


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in chemical reactions

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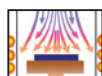
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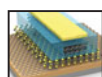


- 558 **Two-dimensional layered transition-metal dichalcogenides for versatile properties and applications**
Eric M. Vogel and Joshua A. Robinson, Guest Editors

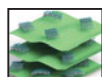
564 **Meet Our Authors**



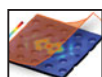
- 566 **Synthesis and structure of two-dimensional transition-metal dichalcogenides**
Yumeng Shi, Hua Zhang, Wen-Hao Chang, Hyeon Suk Shin, and Lain-Jong Li



- 577 **Electronic properties of transition-metal dichalcogenides**
Agnieszka Kuc, Thomas Heine, and Andras Kis

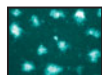


- 585 **Phase-engineered transition-metal dichalcogenides for energy and electronics**
Manish Chhowalla, Damien Voiry, Jieun Yang, Hyeon Suk Shin, and Kian Ping Loh



- 592 **Two-dimensional transition-metal dichalcogenide materials: Toward an age of atomic-scale photonics**
Linyou Cao

TECHNICAL FEATURE



- 600 **Visualizing reacting single atoms in chemical reactions: Advancing the frontiers of materials research**
Symposium X presentation given by Pratibha L. Gai at the 2014 MRS Spring Meeting
Edward D. Boyes and Pratibha L. Gai

Energy Quarterly



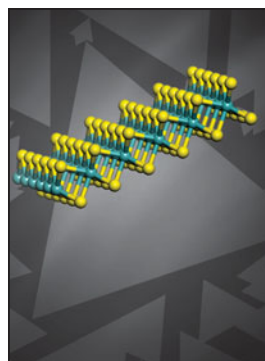
- 551 **Editorial**
Energy-efficient electronics science: Searching for a low-voltage switch
Eli Yablonovitch
- 554 **Energy Sector Analysis**
Materials hurdles for advanced nuclear reactors
Arthur L. Robinson
FEATURE EDITOR: Gary S. Was
- 556 **Energy Sector Analysis**
Demands are high for low-power electronics
Angela Saini

DEPARTMENTS



541 OPINION

- Letter from the President**
Science outreach: Engaging the next generation
Oliver Kraft



ON THE COVER

2D layered transition-metal dichalcogenides. This issue of *MRS Bulletin* provides an overview of two-dimensional layered transition-metal dichalcogenides (TMDCs), their fundamental materials properties, and their applications in electronics, optoelectronics, and energy. TMDCs are compounds consisting of a transition metal M and chalcogen atoms X (S, Se, Te). The cover shows a schematic of

a single layer of molybdenum disulfide (MoS_2). Courtesy of Seung Soon Jang and Parveen Sood of the Georgia Institute of Technology. The background image shows monolayer MoS_2 grown on a crystalline sapphire substrate, which has been modified for the purpose of this cover. The MoS_2 domains are aligned due to an epitaxial registry with the sapphire substrate. Courtesy of Kehao Zhang, The Pennsylvania State University. See the technical theme that begins on page 558.



NEWS & ANALYSIS

544 **Materials News**

- **Liquid gain provides real-time tuning of plasmonic lasing**
Tyler W. Farnsworth
- **Ferroelectric polarization changes local structure at complex oxide interfaces**
Jenna Bilbrey
- **Multiphoton lithography creates conducting polymer-based biomaterials**
Laurel Hamers
- **3D superlattice of nanoparticles and DNA assembled through directionality of interactions**
Vineet Venugopal

548 **Science Policy**

- **Australian research infrastructure gets two-year respite**
Prachi Patel
- **NIST awards USD\$7.8 million for Advanced Manufacturing Technology**
- **EU Horizon 2020 supports new round of SMEs**
- **Minister Pandor urges Africa to invest more resources in universities**



610 SOCIETY NEWS

- **MRS seeks award nominations**
- **Preview: XXIV International Materials Research Congress 2015**
- **SCiMAN10 to be held December 7–9 in Costa Rica**



FEATURES

612 **Books**

- **Biological Materials Science: Biological Materials, Bioinspired Materials, and Biomaterials**
Marc André Meyers and Po-Yu Chen
Reviewed by Carl J. Boehlert and Robert O. Ritchie
- **Electrical, Electronic and Magnetic Properties of Solids**
D.B. Sirdeshmukh, L. Sirdeshmukh, K.G. Subhadra, and C.S. Sunandana
Reviewed by K. Kamala Bharathi

615 **Postterminaries**

- **Materials tomorrow**
Steve Moss



614 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
JEOL USA, Inc.	543
Lake Shore Cryotronics, Inc.	537
Rigaku Corporation.....	563



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www.mrs.org/mymrs

<http://journals.cambridge.org>

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