



25  
YEARS

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Following is a list of titles and authors of articles scheduled to appear in the upcoming issue of the *Journal of Materials Research*. Also included is a direct URL link to the full text of each abstract. A listing of all *JMR* abstracts from 1986 to the present is available through the *JMR* table of contents at <http://www.mrs.org/jmr>.

## INVITED FEATURE PAPER

### Review

**Nano-materials and structures for the 4th innovation of polymer electrolyte fuel cell**  
Chanho Pak, Sangkyun Kang, Yeong Suk Choi, Hyuk Chang  
Samsung Advanced Institute of Technology, Samsung Electronics Co., Ltd.  
[http://www.mrs.org/jmr\\_10\\_0280](http://www.mrs.org/jmr_10_0280)

## MATERIALS COMMUNICATIONS

**Theoretical analysis of the relationships between hardness, elastic modulus, and the work of indentation for work-hardening materials**  
Rong Yang,<sup>1,2</sup> Taihua Zhang,<sup>1</sup> Yihui Feng<sup>1,2</sup>  
<sup>1</sup>State Key Laboratory of Nonlinear Mechanics (LNM), Institute of Mechanics, Chinese Academy of Sciences, <sup>2</sup>Graduate School of Chinese Academy of Sciences  
[http://www.mrs.org/jmr\\_10\\_0267](http://www.mrs.org/jmr_10_0267)

**Strong Effect of Pd concentration on the soldering reaction between Ni and Sn-Pd alloys**  
Cheng En Ho, Wojciech Gierlotka, Sheng Wei Lin  
Yuan Ze University  
[http://www.mrs.org/jmr\\_10\\_0268](http://www.mrs.org/jmr_10_0268)

**Control of iron nitride formation by a high magnetic field**  
W.P. Tong,<sup>1</sup> H. Zhang,<sup>1</sup> J. Sun,<sup>1</sup> L. Zuo,<sup>1</sup> J. He,<sup>1</sup> J. Lu<sup>2</sup>  
<sup>1</sup>Key Laboratory of Electromagnetic Processing of Materials, Ministry of Education, Northeastern University, <sup>2</sup>The Hong Kong Polytechnic University  
[http://www.mrs.org/jmr\\_10\\_0279](http://www.mrs.org/jmr_10_0279)

## ARTICLES

**Combinatorial nano-calorimetry**  
Patrick J. McCluskey, Joost J. Vlassak  
Harvard University  
[http://www.mrs.org/jmr\\_10\\_0286](http://www.mrs.org/jmr_10_0286)

**Judd-Ofelt spectroscopic study of Mg/Er-codoped near-stoichiometric LiNbO<sub>3</sub> crystals for integrated optics**  
De-Long Zhang,<sup>1</sup> Hui Zheng,<sup>1</sup> Edwin Yue-Bun Pun<sup>2</sup>  
<sup>1</sup>Tianjin University, <sup>2</sup>City University of Hong Kong  
[http://www.mrs.org/jmr\\_10\\_0269](http://www.mrs.org/jmr_10_0269)

**Mid-infrared emissions from Er<sup>3+</sup> in Ga<sub>2</sub>S<sub>3</sub>-GeS<sub>2</sub>-Sb<sub>2</sub>S<sub>3</sub> glasses**  
Manabu Ichikawa, Yoichi Ishikawa, Takashi Wakasugi, Kohei Kadono  
Kyoto Institute of Technology  
[http://www.mrs.org/jmr\\_10\\_0274](http://www.mrs.org/jmr_10_0274)

**Luminescence of SrY<sub>2</sub>O<sub>4</sub>:Eu<sup>2+</sup> associated with defects**  
Jia Zhang, Yuhua Wang  
Lanzhou University  
[http://www.mrs.org/jmr\\_10\\_0283](http://www.mrs.org/jmr_10_0283)

**Sintering of hierarchically structured ZnO**  
Markus König,<sup>1</sup> Sören Höhn,<sup>2</sup> Rudolf Hoffmann,<sup>1</sup> Jens Suffer,<sup>1,3</sup> Stefan Lauterbach,<sup>1</sup> Ludwig Weiler,<sup>1</sup> Olivier Guillon,<sup>1</sup> Jürgen Rödel<sup>1</sup>  
<sup>1</sup>Technische Universität Darmstadt, <sup>2</sup>IKTS Dresden, <sup>3</sup>Karlsruher Institut für Technologie  
[http://www.mrs.org/jmr\\_10\\_0288](http://www.mrs.org/jmr_10_0288)

**Resistance degradation behavior of Ca-doped BaTiO<sub>3</sub>**  
Seok-Hyun Yoon, Sung-Hyung Kang, Sang-Hoon Kwon, Kang-Heon Hur  
Samsung Electro-Mechanics Co. Ltd.  
[http://www.mrs.org/jmr\\_10\\_0278](http://www.mrs.org/jmr_10_0278)

**Processing and electrical properties of Pb<sub>0.8</sub>Ba<sub>0.2</sub>Nb<sub>2</sub>O<sub>6</sub> ceramics**  
Sinan Dursun, Cihangir Duran  
Gebze Institute of Technology  
[http://www.mrs.org/jmr\\_10\\_0284](http://www.mrs.org/jmr_10_0284)

**Crystallization kinetics of Si<sub>3</sub>N<sub>4</sub> in Si-B-C-N polymer-derived ceramics**  
Amir H. Tavakoli, Peter Gerstel, Jerzy A. Golczewski, Joachim Bill  
University of Stuttgart and Max Planck Institute for Metals Research  
[http://www.mrs.org/jmr\\_10\\_0282](http://www.mrs.org/jmr_10_0282)

**Microstructure and mechanical properties of Ti/AlTiN/Ti-DLC composite coatings on steel**  
Xiaolu Pang,<sup>1</sup> Huisheng Yang,<sup>1</sup> Shijian Shi,<sup>1</sup> Kewei Gao,<sup>1</sup> Yanbin Wang,<sup>1</sup> Alex A. Volinsky<sup>2</sup>  
<sup>1</sup>University of Science and Technology Beijing, <sup>2</sup>University of South Florida  
[http://www.mrs.org/jmr\\_10\\_0281](http://www.mrs.org/jmr_10_0281)

**Evolution of microstructure and stress of and associated whisker growth on Sn layers sputter-deposited on Cu substrates**  
M. Sobiech,<sup>1,2</sup> C. Krüger,<sup>3</sup> U. Welzel,<sup>1</sup> J.Y. Wang,<sup>1</sup> E.J. Mittemeijer,<sup>1,3</sup> W. Hügél<sup>2</sup>  
<sup>1</sup>Max Planck Institute for Metals Research, <sup>2</sup>Robert Bosch GmbH, <sup>3</sup>University of Stuttgart  
[http://www.mrs.org/jmr\\_10\\_0276](http://www.mrs.org/jmr_10_0276)

**Whisker growth from an electroplated zinc coating**  
Alongheng Baated, Keun-Soo Kim, Katsuaki Suganuma  
Osaka University  
[http://www.mrs.org/jmr\\_10\\_0273](http://www.mrs.org/jmr_10_0273)

**Enhancement of plasticity in Ti-based metallic glass matrix composites by controlling characteristic and volume fraction of primary phase**  
K.R. Lim,<sup>1</sup> J.H. Na,<sup>2</sup> J.M. Park,<sup>1,3</sup> W.T. Kim,<sup>4</sup> D.H. Kim<sup>1</sup>  
<sup>1</sup>Yonsei University, <sup>2</sup>California Institute of Technology, <sup>3</sup>IFW Dresden, Institute for Complex Materials, <sup>4</sup>Cheongju University  
[http://www.mrs.org/jmr\\_10\\_0277](http://www.mrs.org/jmr_10_0277)

**Compressive deformation and damage of Mg-based metallic glass interpenetrating phase composite containing 30–70 vol% titanium**  
Yu Sun,<sup>1</sup> Haifeng Zhang,<sup>1</sup> Aimin Wang,<sup>1</sup> Huameng Fu,<sup>1</sup> Zhuangqi Hu,<sup>1</sup> Cu'e Wen,<sup>2</sup> Peter Hodgson<sup>2</sup>  
<sup>1</sup>Institute of Metal Research, Chinese Academy of Sciences, <sup>2</sup>Deakin University  
[http://www.mrs.org/jmr\\_10\\_0272](http://www.mrs.org/jmr_10_0272)

**Nonlinear elastic load-displacement relation for spherical indentation on rubberlike materials**  
D.X. Liu,<sup>1</sup> Z.D. Zhang,<sup>2</sup> L.Z. Sun<sup>1</sup>  
<sup>1</sup>University of California-Irvine, <sup>2</sup>Institute of Metal Research, Chinese Academy of Sciences  
[http://www.mrs.org/jmr\\_10\\_0285](http://www.mrs.org/jmr_10_0285)

**Effects of indenter geometry on indentation-induced densification of soda-lime glass**  
Satoshi Yoshida, Hiroshi Sawasato, Toru Sugawara, Yoshinari Miura, Jun Matsuoka  
The University of Shiga Prefecture  
[http://www.mrs.org/jmr\\_10\\_0287](http://www.mrs.org/jmr_10_0287)

**Numerical approaches and experimental verification of the conical indentation techniques for residual stress evaluation**  
Jin Haeng Lee, Hyungyil Lee, Hong Chul Hyun, Minsoo Kim  
Sogang University  
[http://www.mrs.org/jmr\\_10\\_0275](http://www.mrs.org/jmr_10_0275)

**A plastic-damage model for finite element analysis of cracking of silicon under indentation**  
Haibo Wan, Yao Shen, Qiulong Chen, Youxing Chen  
Shanghai Jiao Tong University  
[http://www.mrs.org/jmr\\_10\\_0270](http://www.mrs.org/jmr_10_0270)

**Novel Cu/Si composites: A sol-gel-derived Al<sub>2</sub>O<sub>3</sub> film as barrier to control interfacial reaction**  
Hui Cai, Debao Tong, Yaping Wang, Xiaoping Song, Bingjun Ding  
Xi'an Jiaotong University  
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