

About the Materials Research Society

The Materials Research Society (MRS), a not-for-profit scientific association founded in 1973, promotes interdisciplinary goal-oriented basic research on materials of technological importance. Membership in the Society includes almost 16,000 scientists, engineers, and research managers from industrial, government, and university research laboratories in the United States and close to 70 countries.

The Society's interdisciplinary approach differs from that of single-discipline professional societies because it promotes information exchange across the many technical fields touching materials development. MRS sponsors two major international annual meetings encompassing approximately 70 topical symposia, and also sponsors numerous single-topic scientific meetings. The Society recognizes professional and technical excellence and fosters technical interaction in local geographic regions through Sections and University Chapters.

MRS participates in the international arena of materials research through the International Union of Materials Research Societies (IUMRS). MRS is a member of ASTRA and is an affiliate of the American Institute of Physics.

MRS publishes symposium proceedings, *MRS Bulletin*, *Journal of Materials Research*, and other publications related to current research activities.

2010 MRS BOARD OF DIRECTORS

President David S. Ginley, National Renewable Energy Laboratory, USA
Immediate Past President Shefford P. Baker, Cornell University, USA
Vice President and President-Elect James J. De Yoreo, Lawrence Berkeley National Laboratory, USA
Secretary Bethanie J.H. Stadler, University of Minnesota, USA
Treasurer Michael R. Fitzsimmons, Los Alamos National Laboratory, USA
Executive Director Todd M. Osman, Materials Research Society, USA

Wade Adams, Rice University, USA
Tia Benson Tolle, Air Force Research Laboratory, USA
Flemming Besenbacher, Aarhus University, Denmark
Eberhard Bodenschatz, Max Planck Institute for Dynamics and Self Organization, Germany
Ian W. Boyd, Melbourne Centre for Nanofabrication, Australia
Yves J. Chabal, The University of Texas at Dallas, USA
J. Murray Gibson, Argonne National Laboratory, USA
Charles C. Han, Chinese Academy of Sciences, China
Gregg S. Higashi, Alta Devices Inc., USA
Chris Orme, Lawrence Livermore National Laboratory, USA
Michael F. Rubner, Massachusetts Institute of Technology, USA
Takao Someya, The University of Tokyo, Japan
Richard A. Vaia, Air Force Research Laboratory, USA
Pierre Wiltzius, University of California, Santa Barbara, USA

MRS OPERATING COMMITTEE CHAIRS

Academic Affairs Kalpana Katti, North Dakota State University, USA
Awards Julia R. Weertman, Northwestern University, USA
Government Affairs Duane B. Dimos, Sandia National Laboratories, USA
Information Services Sean Hearne, Sandia National Laboratories, USA
International Relations Julia W. P. Hsu, The University of Texas, Dallas, USA
Intersociety Interactions Martin L. Green, National Institute of Standards and Technology, USA
Membership Shashi G. Jasty, Sigma-Aldrich, USA
Public Outreach Amy Moll, Boise State University, USA
Technical Program Michael J. Aziz, Harvard University, USA

MRS OFFICE OF PUBLIC AFFAIRS

Ron Kelley 499 South Capitol St. SW, Suite 600, Washington, DC 20003

Editor
Elizabeth L. Fleischer, fleischer@mrs.org

Managing Editor
Judy Meiksin, meiksin@mrs.org

Technical Editor
Lori A. Wilson, lwilson@mrs.org

Editorial Assistants
Ben Moriarty, moriarty@mrs.org
Mary Wilmoth

Associate Technical Editor
Don Monroe

Art Director
Kasia M. Bruniany

Production/Design
Franklin Design, Christopher R. Roberts, SPI Technologies, Inc.

Advertising/Sponsorship
Mary E. Kaufold, kaufold@mrs.org
Donna L. Watterson, watterson@mrs.org

Circulation
Michelle Judt, judt@mrs.org

Director of Publications and Marketing
Gail A. Oare

Guest Editors
Cameron Alexander and Iqbal Gill

Special Contributors
Graeme Lister, Steven Trohalaki, and Tara Washington

Special Consultants
Gan Moog Chow, Gopal R. Rao, and Alan Sellinger

Book Review Board
Linda J. Olafsen (Chair)

Beyond the Lab
Carol Trager-Cowan (Chair), Y.-T. Cheng, Eric Marshall, Amit Misra, and U. Ramamurty

Energy Quarterly
V.S. Arunachalam (Chair), Anshu Bharadwaj, David Cahen, George Crabtree, Russell R. Chianelli, Robin W. Grimes, Abdellah Slaoui, Guillermo Solórzano, and Steve M. Yalisove; Gordon E. Pike (Project Manager)

EDITORIAL BOARD

Paul S. Drzaic (Chair), Drzaic Consulting Services, USA
V.S. Arunachalam, Center for Study of Science, Technology & Policy, India
Marie-Isabelle Baraton, University of Limoges, France
Robert C. Cammarata, Johns Hopkins University, USA
Laura Fornaro, University of Uruguay, Uruguay
Hanns-Ulrich Habermeier, Max Planck Institute for Solid State Research, Germany
Steven C. Moss, Aerospace Corporation, USA
Julie A. Nucci, Cornell University, USA
Linda J. Olafsen, Baylor University, USA
David N. Seidman, Northwestern University, USA
Carol Trager-Cowan, University of Strathclyde, UK
Julia R. Weertman, Northwestern University, USA
Eric Werwa, Washington, DC, USA
Steve M. Yalisove, University of Michigan, USA

VOLUME ORGANIZERS

2012 Lei Jiang, Chinese Academy of Sciences, China
Sergei V. Kalinin, Oak Ridge National Laboratory, USA
Stephanie P. Lacour, University of Cambridge, UK
Steven C. Moss, Aerospace Corporation, USA

2011 Kyoung-Shin Choi, Purdue University, USA
Reuben T. Collins, Colorado School of Mines, USA
Sean E. Shaheen, University of Denver, USA

2010 T. John Balk, University of Kentucky, USA
David Cahen, Weizmann Institute of Science, Israel
Fiona C. Meldrum, University of Leeds, UK
Stephen K. Streiffer, Argonne National Laboratory, USA

2009 Amit Misra, Los Alamos National Laboratory, USA
Ryan O'Hayre, Colorado School of Mines, USA
Kenneth R. Shull, Northwestern University, USA
Susanne Stemmer, University of California, Santa Barbara, USA

MRS Bulletin (ISSN: 0883-7694, print; ISSN 1938-1425, online) is published 12 times a year by the Materials Research Society, 506 Keystone Drive, Warrendale, PA 15086-7573. Copyright © 2010, Materials Research Society. Permission required to reproduce content. Periodical postage paid at Warrendale, PA, and at additional mailing offices. POSTMASTER: Send address changes to *MRS Bulletin* in care of the Materials Research Society, at the address listed; tel. 724-779-3003; fax 724-779-8313. Printed in the U.S.A.

Membership in MRS is \$115 annually for regular members, \$30 for students. Dues include an allocation of \$29 (\$17 for students) to a subscription to *MRS Bulletin*. Individual member subscriptions are for personal use only. Non-member subscription rates are \$300 for one calendar year (12 issues) within the U.S.A. and \$360 elsewhere. Single copies may be purchased for \$55 each. Requests from subscribers for missing journal issues will be honored without charge only if received within six months of the issue's actual date of publication; otherwise, the issue may be purchased at the single-copy price.

MRS Bulletin is included in Current Contents®/Engineering, Computing, and Technology; Current Contents®/Physical, Chemical, and Earth Sciences, the SciSearch® online database, Research Alert®, Science Citation Index®, and the Materials Science Citation Index™. Back volumes of *MRS Bulletin* are available on microfiche through University Microfilms Inc., 300 North Zeeb Road, Ann Arbor, MI 48106, USA.

Send Letters to the Editor to Bulletin@mrs.org. Include your name, affiliation, and full contact information.