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978-1-107-41198-2 - Materials Research Society Symposium Proceedings: Volume 707:

Self-Assembly Processes in Materials

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MATERIALS RESEARCH SOCIETY
SYMPOSIUM PROCEEDINGS VOLUME 707

Self-Assembly Processes in Materials

Symposium held November 26–30, 2001, Boston, Massachusetts, U.S.A.

EDITOR:

Steven C. Moss

The Aerospace Corporation
Los Angeles, California, U.S.A.

ORGANIZERS:

Bruce M. Clemens

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Stanford, California, U.S.A.

Jerrold A. Floro

Sandia National Laboratories
Albuquerque, New Mexico, U.S.A.

Julie A. Kornfield

California Institute of Technology
Pasadena, California, U.S.A.

Yuri Suzuki

Cornell University
Ithaca, New York, U.S.A.



Materials Research Society

Warrendale, Pennsylvania

Cambridge University Press
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Cambridge, New York, Melbourne, Madrid, Cape Town,
Singapore, São Paulo, Delhi, Mexico City

Cambridge University Press
32 Avenue of the Americas, New York NY 10013-2473, USA

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org
Information on this title: www.cambridge.org/9781107411975

Materials Research Society
506 Keystone Drive, Warrendale, PA 15086
<http://www.mrs.org>

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First published 2002
First paperback edition 2013

Single article reprints from this publication are available through
University Microfilms Inc., 300 North Zeeb Road, Ann Arbor, MI 48106

CODEN: MRSPDH

ISBN 978-1-107-41197-5 Paperback

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PREFACE

Symposium AA, "Self-Assembly Processes in Materials," was held November 26–30 at the 2001 MRS Fall Meeting in Boston, Massachusetts, discussing ongoing advances in self-assembly that touch essentially every area of materials science. 100 papers were presented in ten sessions including one poster session. Papers included in this volume address topics including quantum dots, nanocrystals, nanowires and chains, organic materials, magnetic materials, biological materials, photonic crystals, and optical materials.

This symposium was conducted as a "virtual symposium" unifying sessions from ten diverse symposia, including Symposia K, M, N, V, W, Y, BB, DD, and HH. One of the presentations from Symposium X was also included. This virtual symposium was organized by the Meeting Chairs with the support of the Symposium Organizers from the nine symposia listed below. The Meeting Chairs gratefully acknowledge the assistance of these Symposium Organizers:

Symposium K - "Microphotonics—Materials, Physics, and Applications" - Pierre Wiltzius, Bell Labs, Lucent Technologies; Alfons van Blaaderen, Utrecht Univ; and Claude Weisbuch, Ecole Polytechnique;

Symposium M - "Surface Science and Thin-Film Growth in Electrolytes" - Dieter M. Kolb, Ulm Univ; Benjamin M. Ocko, Brookhaven National Laboratory; Peter C. Searson, Johns Hopkins Univ; and Karl Sieradzki, Arizona State Univ;

Symposium N - "Current Issues in Heteroepitaxial Growth—Stress Relaxation and Self Assembly" - Eric H. Chason, Brown Univ; Robert Hull, Univ of Virginia; Samuel D. Bader, Argonne National Lab; and Eric A. Stach, Lawrence Berkeley National Laboratory;

Symposium V - "Nanophase and Nanocomposite Materials IV" - Sridhar Komarneni, Pennsylvania State Univ; G.Q. (Max) Lu, Univ of Queensland; Jun-Ichi Matsushita, Tokai Univ; John C. Parker, Cirqon Technologies Corp; and Richard A. Vaia, Air Force Research Lab;

Symposium W - "Nanoparticulate Materials" - Rajiv Kumar Singh, Univ of Florida; Heinrich Hofmann, EPFL-Lausanne; Mamoun Muhammed, The Royal Inst of Technology (KTH); Richard Partch, Clarkson Univ; and Mamoru Senna, Keio Univ;

Symposium Y - "Nanopatterning—From Ultralarge-Scale Integration to Biotechnology" - Kenneth E. Gonsalves, Univ of North Carolina; Lhadi Merhari, CERAMEC R&D France; Elizabeth A. Dobisz, IBM Almaden Research Ctr; Marie Angelopoulos, IBM T.J. Watson Research Ctr; and Daniel J.C. Herr, SRC;

Symposium BB - "Organic Optoelectronic Materials, Processing, and Devices" - Zhenan Bao, Lucent Technologies; Vladimir Bulovic, MIT; Susan P. Ermer, Lockheed Martin Adv Tech Ctr; Alex K-Y. Jen, Univ of Washington; George G. Malliaras, Cornell Univ; and Michael D. McGehee, Stanford Univ;

Symposium DD - "Polymer Interfaces and Thin Films" - Alamgir Karim, NIST; Thomas P. Russell, Univ of Massachusetts-Amherst; Curtis W. Frank, Stanford Univ; and Paul F. Nealey, Univ of Wisconsin-Madison;

Symposium HH - "Bio-Inspired Materials—Moving Towards Complexity" - Bradley F. Chmelka, Univ of California-Santa Barbara; Konrad Knoll, BASF AG Ludwigshafen Germany; Joachim P. Spatz, Ulm Univ; and Ulrich B. Weisner, Cornell Univ.

Because of the extraordinary commitments of the Meeting Chairs, who served as Symposium Organizers for this symposium, an editor (Steven C. Moss, The Aerospace Corporation) was recruited to organize the proceedings volume.

Numerous other papers addressing self-assembly were presented in many of the other symposia. Papers on self-assembly from Symposia A, H, and I have also been included in this proceedings volume.

In addition to the Symposium Organizers, the session chairs made significant contributions. Session chairs included: Pierre Wiltzius, Francis M. Ross, Michael J. Aziz, Masaaki Oda,

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Mamoru Senna, Peter C. Searson, J. Woods Halley, Willem L. Vos, Marie Angelopoulos, Elizabeth A. Dobisz, Spiros H. Anastasiadis, Georg Krausch, Michael F. Rubner, and Paula T. Hammond. The Meeting Chairs and Symposium Organizers gratefully acknowledge their contribution.

Symposium support for Symposium A was provided by MMR Technologies, Inc. and Voltaix, Inc. Symposium support for Symposium H was provided by the Air Force Office of Scientific Research and the Office of Naval Research. Symposium support for Symposium I was provided by the Air Force Office of Scientific Research, the Fritz-Haber-Institut der Max Planck Gesellschaft, Nichia Corporation, SONY Corporation, and Xerox Palo Alto Research Center. Symposium support for Symposium K was provided by the Army Research Office. Symposium support for Symposium M was provided by the Air Force Office of Scientific Research. Symposium support for Symposium N was provided by Blake Industries, Inc. Symposium support for Symposium V was provided by the Air Force Research Laboratory and the Office of Naval Research. Symposium support for Symposium W was provided by EPFL Switzerland, KTH Sweden, and the University of Florida. Symposium support for Symposium Y was provided by CERAMEC R&D France, Motorola France, Nanoresist Technologies, Inc., the National Science Foundation, and The Whitaker Foundation. Symposium support for Symposium BB was provided by Lumera Corporation, MMR Technologies, Inc., and the Universal Display Corporation. Symposium support for Symposium DD was provided by the National Institute of Standards and Technology, the National Science Foundation, and the Stanford University NSF-MRSEC. Symposium support for Symposium HH was provided by BASF AG Ludwigshafen and Philip Morris USA. The Meeting Chairs, the Symposium Organizers, and the Materials Research Society gratefully acknowledge their support.

Steven C. Moss

September 2002

Cambridge University Press

978-1-107-41198-2 - Materials Research Society Symposium Proceedings: Volume 707:
Self-Assembly Processes in Materials

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