PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 7393

, "Front Matter: Volume 7393," Proc. SPIE 7393, Nanophotonic Materials VI, 739301 (23 September 2009); doi: 10.1117/12.847058

SPIE.

Event: SPIE NanoScience + Engineering, 2009, San Diego, California, United States

PROCEEDINGS OF SPIE

Nanophotonic Materials VI

Stefano Cabrini
Taleb Mokari
Editors

2–3 August 2009
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 7393

Proceedings of SPIE, 0277-786X, v. 7393

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Nanophotonic Materials VI*, edited by Stefano Cabrini, Taleb Mokari, Proceedings of SPIE Vol. 7393 (SPIE, Bellingham, WA, 2009) Article CID Number.

ISSN 0277-786X

ISBN 9780819476838

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

SPIE.org

Copyright © 2009, Society of Photo-Optical Instrumentation Engineers

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/09/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.

SPIDigitalLibrary.org

Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc.

The CID number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID number.

Contents

- vii Conference Committee
- ix *Sub-nanometer resolution for the inspection of reflective surfaces using white light (Plenary Paper) [7405-37]*
W. Jüptner, T. Bothe, Bremer Institut für angewandte Strahltechnik (Germany)

SESSION 1 SYNTHESIS AND FABRICATION I

- 7393 03 **Optical and nonlinear optical properties of Cobalt doped ZnO nanostructures** [7393-02]
B. Karthikeyan, National Institute of Technology, Tiruchirappalli (India); S. C. S. Sandeep, R. Philip, Raman Research Institute (India)
- 7393 04 **Thiol capped colloidal CdTe quantum dots synthesized using laser ablation** [7393-03]
D. B. Almeida, E. Rodriguez, R. S. Moreira, State Univ. of Campinas (Brazil); S. Agouram, Univ. de València (Spain); L. C. Barbosa, State Univ. of Campinas (Brazil); E. Jimenez, Univ. de València (Spain); C. L. Cesar, State Univ. of Campinas (Brazil)
- 7393 05 **Confocal microscopy and spectroscopy of defect photoluminescence in single SiO₂ nanoparticles** [7393-04]
A. M. Chizhik, Univ. of Tübingen (Germany); T. Schmidt, Univ. of Jena (Germany); A. I. Chizhik, Univ. of Tübingen (Germany); F. Huisken, Univ. of Jena (Germany); A. Meixner, Univ. of Tübingen (Germany)

SESSION 2 CHARACTERIZATION I

- 7393 07 **Excitons and multi-excitons in heterostructures semiconductor nanocrystals (Invited Paper)** [7393-06]
A. Sitt, G. Menagen, U. Banin, The Hebrew Univ. of Jerusalem (Israel)
- 7393 09 **Characterization of surface plasmon peak shifts and dampening in Au-YSZ nanocomposites** [7393-08]
P. H. Rogers, M. A. Carpenter, Univ. at Albany, State Univ. of New York (United States)

SESSION 3 CHARACTERIZATION II

- 7393 0C **Energy transfer in hybrid organic/inorganic nanocomposites** [7393-11]
T. Stöferle, R. F. Mahrt, IBM Research (Switzerland)
- 7393 0D **Investigation of H-bonded media by means of Raman scattering in terms of the fractal formalism** [7393-12]
A. O. Maksymov, A. V. Yakunov, M. M. Bily, National Taras Shevchenko Univ. of Kyiv (Ukraine)

- 7393 OE **Transverse and longitudinal confinement of photonic nanojets by compound dielectric microspheres** [7393-13]
A. Devilez, J. Wenger, B. Stout, N. Bonod, Institut Fresnel, Aix-Marseille Univ., CNRS (France)

SESSION 4 APPLICATIONS OF NANOPHOTONIC MATERIALS

- 7393 OF **Self-assembly of thiophene/phenylene co-oligomers (Invited Paper)** [7393-14]
F. Balzer, M. Schiek, Univ. of Southern Denmark (Denmark); A. Lützen, Univ. of Bonn (Germany); H.-G. Rubahn, Univ. of Southern Denmark (Denmark)
- 7393 OH **Lu₂SiO₅:Ce optical ceramic scintillator** [7393-16]
Y. Wang, Radiation Monitoring Devices, Inc. (United States); W. H. Rhodes, ALEM Associates (United States); G. Baldoni, E. van Loef, J. Glodo, Radiation Monitoring Devices, Inc. (United States); C. Brecher, ALEM Associates (United States); L. Nguyen, Nanocerox, Inc. (United States); K. S. Shah, Radiation Monitoring Devices, Inc. (United States)
- 7393 OI **High photon extraction efficiency from GaAs pillar with InAs quantum dots embedded in Niobium** [7393-17]
D. Kato, Hokkaido Univ. (Japan); Y. Idutsu, Hokkaido Univ. (Japan) and Japan Science and Technology Corp. (Japan); M. Takada, S. Ito, H. Sato, J.-H. Huh, S. Ida, Hokkaido Univ. (Japan); H. Sasakura, H. Kumano, I. Suemune, Hokkaido Univ. (Japan) and Japan Science and Technology Corp. (Japan)
- 7393 OJ **Growth of silver nanoparticles in SiO₂ matrix by co-sputtering technique** [7393-18]
K. C. Sanal, R. Sreeja, K. A. Lazar, M. K. Jayaraj, Cochin Univ. of Science and Technology (India)

SESSION 5 NANOPHOTONICS FOR BIOLOGY

- 7393 OK **Artificial optical activity in chiral resonant nanogratings** [7393-19]
B. Bai, Univ. of Joensuu (Finland)
- 7393 OL **Time-resolved fluorescence and FCS studies of dye-doped DNA** [7393-20]
N. Nicolaou, R. J. Marsh, T. Blacker, D. A. Armoogum, A. J. Bain, Univ. College London (United Kingdom)
- 7393 OM **Luminescent dye-doped or rare-earth-doped monodisperse silica nanospheres as efficient labels in DNA microarrays** [7393-21]
F. Enrichi, R. Riccò, A. Meneghello, R. Pierobon, F. Marinello, P. Schiavuta, CIVEN and Nanofab (Italy)

SESSION 6 SYNTHESIS AND FABRICATION II

- 7393 OQ **Luminescence and photoconductivity studies on amorphous and nanocrystalline ZnO thin films obtained by sol-gel** [7393-25]
J. A. García-Macedo, G. Valverde-Aguilar, J. L. Manríquez-Zepeda, Univ. Nacional Autónoma de México (Mexico)

- 7393 OS **Infiltration of individual pores in macroporous silicon photonic crystals** [7393-27]
P. W. Nolte, D. Pergande, S. L. Schweizer, Martin-Luther Univ. Halle-Wittenberg (Germany);
M. Geuss, Max Planck Institute of Microstructure Physics (Germany); R. Salzer, Fraunhofer
Institute for Mechanics of Materials (Germany); B. Makowski, Case Western Reserve Univ.
(United States); M. Steinhart, Max Planck Institute of Microstructure Physics (Germany);
R. B. Wehrspohn, Martin-Luther Univ. Halle-Wittenberg (Germany) and Fraunhofer Institute for
Mechanics of Materials (Germany); C. Weder, Case Western Reserve Univ. (United States)

POSTER SESSION

- 7393 OU **Thermal characterization of nanofluids using laser induced thermal lens technique** [7393-30]
A. Kurian, R. B. Kumar, Catholicate College (India); S. D. George, Technische Univ.
Darmstadt (Germany)
- 7393 OV **Calculations of transmission spectra in 1D photonic structures accounting polariton effects**
[7393-31]
Y. K. Timoshenko, Voronezh State Univ. (Russian Federation); V. A. Shunina, Voronezh State
Technical Univ. (Russian Federation); Y. V. Smirnov, O. V. Kazarina, Voronezh State Univ.
(Russian Federation)
- 7393 OX **Synthesis, characterization, and photoconductivity studies on nanocrystalline TiO₂ films
doped with gold nanoparticles** [7393-33]
G. Valverde-Aguilar, J. A. García-Macedo, P. Galván-Ramírez, V. Rentería-Tapia, Univ.
Nacional Autónoma de México (Mexico)
- 7393 OY **Thiol-ene reaction as tool for crosslinking of polynorbornene micelles in the nanoscale**
[7393-35]
B. Rupp, Polymer Competence Ctr. Leoben GmbH (Austria); T. Bauer, C. Slugovc, Graz Univ.
of Technology (Austria)

Author Index

Conference Committee

Symposium Chairs

David L. Andrews, University of East Anglia Norwich (United Kingdom)
James G. Grote, Air Force Research Laboratory (United States)

Conference Chairs

Stefano Cabrini, Lawrence Berkeley National Laboratory (United States)
Taleb Mokari, Lawrence Berkeley National Laboratory (United States)

Program Committee

David L. Andrews, University of East Anglia Norwich (United Kingdom)
Angus J. Bain, University College London (United Kingdom)
Mireille H. Blanchard-Desce, Université de Rennes I (France)
Robert W. Boyd, University of Rochester (United States)
Zeno Gaburro, Università degli Studi di Trento (Italy)
Aaron W. Harper, University of Southern California (United States)
Ghassan E. Jabbour, Arizona State University (United States)
François Kajzar, Université d'Angers (France)
Dmitri I. Kovalev, University of Bath (United Kingdom)
Paras N. Prasad, University at Buffalo (United States)
Dmitri Talapin, The University of Chicago (United States)
Younan Xia, University of Washington (United States)

Session Chairs

- 1 Synthesis and Fabrication I
Stefano Cabrini, Lawrence Berkeley National Laboratory (United States)
- 2 Characterization I
Jiaxing Huang, Northwestern University (United States)
- 3 Characterization II
Taleb Mokari, Lawrence Berkeley National Laboratory (United States)
- 4 Applications of Nanophotonic Materials
Oded Rabin, University of Maryland, College Park (United States)
- 5 Nanophotonics for Biology
Frank Balzer, University of Southern Denmark (Denmark)

- 6 Synthesis and Fabrication II
 Taleb Mokari, Lawrence Berkeley National Laboratory (United States)