

PROCEEDINGS OF SPIE

Nanotechnology VIII

Ion M. Tiginyanu
Editor

8–9 May 2017
Barcelona, Spain

Sponsored by
SPIE

Cooperating Organisation
European Optical Society

Published by
SPIE

Volume 10248

Proceedings of SPIE 0277-786X, V. 10248

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

The papers 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. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIDigitalLibrary.org.

The papers 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 these proceedings:

Author(s), "Title of Paper," in *Nanotechnology VIII*, edited by Ion M. Tiginyanu, Proceedings of SPIE Vol. 10248 (SPIE, Bellingham, WA, 2017) Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510609976

ISBN: 9781510609983 (electronic)

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 © 2017, 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/17/\$18.00.

Printed in the United States of America Vm7 i ffUb '5ggc WJUH'g' bWZi bXYf' JW bgf' Zfca 'GD-9.

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

**SPIE. DIGITAL
LIBRARY**

SPIDigitalLibrary.org

Paper Numbering: *Proceedings of SPIE* follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five 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.

Contents

v	<i>Authors</i>
vii	<i>Introduction</i>

NANOPLATELETS, NANOTUBES, AND NANOWIRES

10248 05	Tailoring the shape of oxide complex nanostructures [10248-2]
10248 08	Large-area fabrication of silicon nanostructures by templated nanoparticle arrays [10248-5]

MULTIFUNCTIONAL APPLICATIONS AND SENSORS

10248 0E	Methanol sensor for integration with GaP nanowire photocathode [10248-11]
10248 0F	Nanosensor array systems based on single functional wires selectively integrated and their sensing properties to C₂H₆O and NO₂ [10248-12]
10248 0H	Field emission properties of ring-shaped Si ridges with DLC coating [10248-14]
10248 0K	Nano and microcrystallites of KSbOSiO₄ in glass matrix as a source of internal strain and fatal corrosion of historic turquoise glass [10248-17]

THIN FILMS AND PHOTOVOLTAICS

10248 0O	Silicon-germanium and platinum silicide nanostructures for silicon based photonics [10248-20]
10248 0P	Homogeneous fluorescent thin films as long-term stable microscopy reference layers [10248-21]

MATERIAL NANOSTRUCTURING AND MICROFABRICATION

10248 0Q	Displacement Talbot lithography: an alternative technique to fabricate nanostructured metamaterials [10248-22]
10248 0R	Multilayer porous structures on GaN for the fabrication of Bragg reflectors [10248-23]

SYNTHESIS

10248 0W	Production of silver nanoparticles by the diatom <i>Phaeodactylum tricornutum</i> [10248-28]
----------	---

POSTER SESSION

- 10248 11 **Resonant tunneling transport in $\text{Zn}_x\text{Be}_{1-x}\text{Se}/\text{ZnSe}/\text{Zn}_y\text{Be}_{1-y}\text{Se}$ asymmetric quantum structures**
[10248-34]
- 10248 12 **Ultrafast laser patterning of graphene** [10248-36]