## PROCEEDINGS OF SPIE

## Synthesis and Photonics of Nanoscale Materials XVII

Jan J. Dubowski David B. Geohegan Andrei V. Kabashin Editors

1–4 February 2020 San Francisco, California, United States

Sponsored and Published by SPIE

**Volume 11269** 

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 SPIEDigital Library.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 Synthesis and Photonics of Nanoscale Materials XVII, edited by Jan J. Dubowski, David B. Geohegan, Andrei V. Kabashin, Proceedings of SPIE Vol. 11269 (SPIE, Bellingham, WA, 2020) Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510633018

ISBN: 9781510633025 (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 © 2020, 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 \$21.00 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/20/\$21.00.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

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



**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 vii	Conference Committee Introduction
	PHOTONIC NANOMATERIALS FOR BIOMEDICAL APPLICATIONS I
11269 03	Photoluminescent Si-based nanocrystals prepared by pulsed laser ablation in low-pressure helium-nitrogen mixtures for biomedical applications [11269-2]
11269 04	Colloidal samarium oxide nanoparticles prepared by femtosecond laser ablation and fragmentation for nuclear nanomedicine [11269-3]
	PHOTONIC NANOMATERIALS FOR BIOMEDICAL APPLICATIONS II
11269 05	Gelatine-based biosensor for molecular screening of aspirin and paracetamol via surface enhanced Raman spectroscopy [11269-4]
	SYNTHESIS AND DIAGNOSTICS OF NANOSCALE MATERIALS I
11269 09	Multi-angle hyper Rayleigh scattering of gold nanoparticles (Invited Paper) [11269-9]
	SYNTHESIS AND DIAGNOSTICS OF NANOSCALE MATERIALS III
11269 OG	Aerosol generation from laser-ablation-synthesized nanoparticles [11269-16]
	SYNTHESIS AND DIAGNOSTICS OF NANOSCALE MATERIALS IV
11269 OL	Microfabricated bolometer based on a vertically aligned carbon nanotube absorber [11269-21]
11269 OM	High-efficiency generation of nanomaterials via laser ablation synthesis in solution with in-situ diagnostics for closed-loop control [11269-22]
11269 ON	Fourier nanotransducers for phase-sensitive plasmonic biosensing [11269-23]

## POSTER SESSION

11269 0Q	SERS activity of Ag/ZnO nanocomposites produced by combined surface modification techniques [11269-26]
11269 OS	Widely tunable CW optical parametric oscillators: mastering the challenges posed in quantum technology research [11269-28]