

PROCEEDINGS OF SPIE

[SPIDigitalLibrary.org/conference-proceedings-of-spie](https://spiedigitallibrary.org/conference-proceedings-of-spie)

Front Matter: Volume 8459

, "Front Matter: Volume 8459," Proc. SPIE 8459, Physical Chemistry of Interfaces and Nanomaterials XI, 845901 (15 October 2012); doi: 10.1117/12.2009146

SPIE.

Event: SPIE NanoScience + Engineering, 2012, San Diego, California, United States

PROCEEDINGS OF SPIE

Physical Chemistry of Interfaces and Nanomaterials XI

Jenny Clark
Carlos Silva
Editors

12–15 August 2012
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 8459

Proceedings of SPIE 0277-786X, V.8459

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

Physical Chemistry of Interfaces and Nanomaterials XI, edited by Jenny Clark, Carlos Silva,
Proc. of SPIE Vol. 8459, 845901 · © 2012 SPIE · CCC code: 0277-786/12/\$18 · doi: 10.1117/12.2009146

Proc. of SPIE Vol. 8459 845901-1

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 *Physical Chemistry of Interfaces and Nanomaterials XI*, edited by Jenny Clark, Carlos Silva, Proceedings of SPIE Vol. 8459 (SPIE, Bellingham, WA, 2012) Article CID Number.

ISSN: 0277-786X

ISBN: 9780819491763

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 © 2012, 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/12/\$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 as 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

v *Conference Committee*

EXCITONS IN ORGANIC SEMICONDUCTORS I

- 8459 04 **Optical signatures of the interplay between intermolecular and intramolecular coupling in plastic semiconductors** [8459-3]
F. Paquin, M. Sakowicz, Univ. de Montréal (Canada); N. Stingelin, Imperial College London (United Kingdom); C. Silva, Univ. de Montréal (Canada)

EXCITONS IN ORGANIC SEMICONDUCTORS II

- 8459 05 **Singlet fission in carotenoid aggregates: insights from transient absorption spectroscopy (Invited Paper)** [8459-4]
C. Wang, M. Angelella, Univ. of California, San Diego (United States); C.-H. Kuo, Newport Corp. (United States); M. J. Tauber, Univ. of California, San Diego (United States)

ELECTRONIC PROCESSES AT NANOSTRUCTURED INTERFACES II

- 8459 0C **Electronic energy transport in nanomaterials: influence of host structure** [8459-11]
D. L. Andrews, J. S. Ford, Univ. of East Anglia (United Kingdom)

ELECTRONIC AND PHOTONIC PROCESSES AT MODEL INTERFACES

- 8459 0E **Single-molecule studies of proton transfer in guest-host materials (Invited Paper)** [8459-13]
P. J. Reid, E. A. Riley, C. Hess, P. Whitham, Univ. of Washington (United States)
- 8459 0F **Mechanism of two-photon fluorescence increment via cross-linked bovine serum albumin** [8459-14]
C.-Y. Lin, C.-H. Lien, C.-Y. Chang, S.-J. Chen, National Cheng Kung Univ. (Taiwan)

INTERFACES IN QUANTUM-CONFINED NANOSTRUCTURES II

- 8459 0L **Wavefunction engineering in core-shell semiconductor nanocrystals: from fine-tuned exciton dynamics and suppressed Auger recombination to dual color electroluminescence (Invited Paper)** [8459-21]
S. Brovelli, Los Alamos National Lab. (United States) and Univ. degli Studi di Milano-Bicocca (Italy); F. García-Santamaría, Los Alamos National Lab. (United States); R. Viswanatha, Los Alamos National Lab. (United States) and Jawaharlal Nehru Ctr. for Advanced Scientific Research (India); B. N. Pal, S. A. Crooker, V. I. Klimov, Los Alamos National Lab. (United States)

POSTER SESSION

- 8459 0U **Positive magnetoresistance in hydrogenated amorphous alloys silicon nickel a- $\text{Si}_{1-y}\text{Ni}_y\text{H}$ at very low temperature with magnetic field** [8459-31]
A. Narjis, A. El Kaaouachi, A. Sybous, L. Limouny, Univ. Ibn Zohr (Morocco); G. Biskupski, Univ. des de Lille I (France); S. Dlimi, Univ. Ibn Zohr (Morocco)
- 8459 0V **Variable range hopping in hydrogenated amorphous silicon-nickel alloys** [8459-32]
A. Narjis, A. El Kaaouachi, A. Sybous, L. Limouny, S. Dlimi, Univ. Ibn Zohr (Morocco); G. Biskupski, Univ. des Sciences et Technologies de Lille (France)
- 8459 0W **Study of electrical conductivity and scale theory in metallic n-type GeSb** [8459-33]
A. Sybous, A. El Kaaouachi, A. Narjis, L. Limouny, S. Dlimi, Univ. Ibn Zohr (Morocco); G. Biskupski, Univ. des Sciences et Technologies de Lille (France)
- 8459 0X **Negative magnetoresistance behaviour and variable range hopping conduction in insulating NbSi amorphous alloys at very low temperature with magnetic field** [8459-34]
A. Sybous, A. El Kaaouachi, A. Narjis, L. Limouny, S. Dlimi, Univ. Ibn Zohr (France); G. Biskupski, Univ. des Sciences et Technologies de Lille (France)
- 8459 0Z **Variable range hopping conduction in insulating n-type InSb semiconductor** [8459-36]
A. Sybous, A. El Kaaouachi, S. Dlimi, A. Narjis, L. Limouny, Univ. Ibn Zohr (Morocco); B. Capoen, CERLA, CNRS, Univ. des Sciences et Technique de Lille I (France); G. Biskupski, Lab. de Spectroscopie Hertziennne, CNRS, Univ. des Sciences et Technique de Lille I (France)
- 8459 11 **Spectroscopic studies on ultra-thin films of indium tin oxide under electro-chemical modulation** [8459-38]
H. Xue, S. B. Mendes, Univ. of Louisville (United States)
- 8459 12 **Vanadium and rare metals extraction via nano-porous intercalation of porphyrine-contained asphaltenes** [8459-39]
V. F. Sapega, Karpinskii Institute of Geology (Russian Federation); M. K. Rafailov, Univ. of Alberta (Canada)

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)

Symposium Cochairs

Satoshi Kawata, Osaka University (Japan)
Manijeh Razeghi, Northwestern University (United States)

Conference Chairs

Jenny Clark, University of Cambridge (United Kingdom)
Carlos Silva, Université de Montréal (Canada)

Conference CoChairs

John B. Asbury, The Pennsylvania State University (United States)
Oleg V. Prezhdo, University of Rochester (United States)
Sergei Tretiak, Los Alamos National Laboratory (United States)

Conference Program Committee

Oliver L. A. Monti, The University of Arizona (United States)

Session Chairs

- 1 Excitons in Organic Semiconductors I
Richard Hildner, ICFO - Institut de Ciències Fotòniques (Spain)
- 2 Excitons in Organic Semiconductors II
Christopher J. Bardeen, University of California, Riverside (United States)
- 3 Electronic Processes at Nanostructured Interfaces I
Natalie Stingelin-Stutzmann, Imperial College London (United Kingdom)
- 4 Electronic Processes at Nanostructured Interfaces II
Thuc-Quyen Nguyen, University of California, San Diego (United States)

- 5 Electronic and Photonic Processes at Model Interfaces
Sebastian Westenhoff, University of Cambridge (United Kingdom)
- 6 Organic Semiconductor Devices I
Mario Caironi, Istituto Italiano di Tecnologia (Italy)
- 7 Interfaces in Quantum-Confined Nanostructures I
Sergio Brovelli, Università degli Studi di Milano-Bicocca (Italy)
- 8 Interfaces in Quantum-Confined Nanostructures II
Sebastien Francoeur, Ecole Polytechnique de Montréal (Canada)
- 9 Organic Semiconductor Devices II
Mark W. B. Wilson, Massachusetts Institute of Technology (United States)
- 10 Charge Transfer Dynamics in Organic Semiconductors: Joint Session with Conference 8459 and 8477
Garry Rumbles, National Renewable Energy Laboratory (United States)