



ICQNM 2013

The Seventh International Conference on Quantum, Nano and Micro Technologies

August 25-31, 2013

Barcelona, Spain

ICQNM 2013 Editors

Vladimir Privman, Clarkson University - Potsdam, USA

Victor Ovchinnikov, Aalto University, Finland

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2013) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (2013)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

ICQNM 1: NANO TECHNOLOGIES

Effect of Thermal Radiation during Annealing on Self-organization of Thin Silver Films	1
<i>Victor Ovchinnikov</i>	
Monte Carlo Studies of Particle Diffusion on a Patchwise Bivariate Surface	7
<i>Alexander Tarasenko, Lubomir Jastrabik</i>	
On Electronic Photoemission from Irradiated C₆₀	13
<i>Paul-Gerhard Reinhard, Philipp Wopperer, Phuong Mai Dinh, Eric Suraud</i>	
Study of Protein Conjugation with Different Types of CdTe Quantum Dots	18
<i>Jana Chomoucka, Jana Drbohlavova, Marketa Vaculovicova, Petra Businova, Jan Prasek, Jan Pekarek, Jaromir Hubalek</i>	

ICQNM 2: QUANTUM TECHNOLOGY AND SECURITY

Effects of Noise on the Security of Entanglement Swapping Based QKD Protocols	23
<i>Stefan Schauer, Martin Suda</i>	
QKD on a Board Limited by Detector Rates in a Free-Space Environment	28
<i>Alan Mink, Joshua Bienfang</i>	
General Quantum Hilbert Space Modeling Scheme for Entanglement	34
<i>Diederik Aerts, Sandro Sozzo</i>	

ICQNM 3: NANO AND MICRO MATERIALS I

Nanodimensional Copper Ferrite Materials for Environmental Protection: Preparation, Characterization and Photocatalytic Activity (POSTER)	N/A
<i>Katerina Zaharieva, Vicente Rives, Martin Tsvetkov, Zara Cherkezova-Zheleva, Boris Kunev, Raquel Trujillano, Ivan Mitov, Maria Milanova</i>	
Ferromagnetic Properties of InMnAs Diluted Magnetic Quantum Dots Nanostructure (POSTER)	N/A
<i>Im Taek Yoon</i>	
Electrical and Structural Analysis of CNT-Metal Contacts in Via Interconnects	41
<i>Patrick Wilhite, Phillip Wang, Anshul Vyas, Jason Tan, Jeongwon Park, Hua Ai, Murali Narasimhan, Cary Y. Yang</i>	
3D Macroscopic Graphene-CNT Aerogel Absorbers (POSTER)	N/A
<i>Byeong Ho Lee, Yong-Hyup Kim</i>	
Determination of the Structure of a 1-D Nano-Particle by Means of an Electric Field	44
<i>Guillermo Monsivais, María Teresa Pérez-Maldonado, Víctor Velasco</i>	

ICQNM 4: NANO AND MICRO MATERIALS II

Energy Harvesting From CNT Sheet by Electrostatic Force (POSTER)	N/A
<i>Hyelynn Song</i>	
CNT-Textile Based Flexible Thermo-Electrochemical Cell (POSTER)	N/A
<i>Hyeongwook Im, Yong-Hyup Kim</i>	
SWNT Electrodes With Nanogap (POSTER)	N/A
<i>Taewoo Kim, Tae June Kang, Yong-Hyup Kim</i>	
Nano Fabrication of Oxide Patterns Using Atomic Force Microscopy on Titanium: Towards the Development of Nano Devices	50
<i>Nicolas Guillaume, Etienne Puyoo, Martine Le Berre, David Albertini, Nicolas Baboux, Brice Gautier, Francis Calmon</i>	

ICQNM 5: APPLICATION NANO/MICRO DOMAINS I

Design of Biosensors with Extended Linear Response and Binary-Type Sigmoid Output Using Multiple Enzymes	54
<i>Oleksandr Zavalov, Sergii Domanskyi, Vladimir Privman, Aleksandr Simonian</i>	
Electric Field-Assisted Assembly and Alignment of Metal Nanorods (IDEA)	N/A
<i>Wen-Hsien Sun, Kuo-Chan Chiou, Zhi-Long Chen, Chien-Hsun Chen, Ching-Chang Lin, Szu-Yu Wang</i>	
The Provision of Mass Calibrations for Micro/Nano Force Measurements	60
<i>Adriana Vâlcu, Fanel Iacobescu</i>	
Carbon Nanotube Emitters in Sensoric Application	67
<i>Jan Pekarek, Radimir Vrba, Martin Magat, Jana Chomoucka, Jan Prasek, Jaromir Hubalek, Ondrej Jasek, Lenka Zajickova</i>	

ICQNM 6: APPLICATION NANO/MICRO DOMAINS II

Experimental Evaluation of Optical Feedback for Nanopositioning of Piezo Actuator Stage	71
<i>Piotr Skupin, Mieczyslaw Metzger, Dariusz Choinski</i>	
Theoretical Study of Micro Flow Instability by Orr-Sommerfeld Equation in Micro Canal	77
<i>Dennai Brahim, Chekifi Toufik, Khelfaoui Rachid, Abdenbi Asma</i>	
Measurement of Optical Properties of Nanofluids and its Effects in Near-wall Flow Evaluation	82
<i>Anoop Kanjirakat, Reza Sadr</i>	
Electric Field-Assisted Assembly and Alignment of Silver Nanowires for Plasmonic Solar Cells (POSTER)	N/A
<i>Wen-Hsien Sun, Kuo-Chan Chiou, Zhi-Long Chen, Chien-Hsun Chen, Ching-Chang Lin, Szu-Yu Wang</i>	
Author Index	