

MATERIALS RESEARCH SOCIETY
SYMPOSIUM PROCEEDINGS VOLUME 1208

Excitons and Plasmon Resonances in Nanostructures II

November 30 – December 4, 2009
Boston, Massachusetts, USA

Printed from e-media with permission by:

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

ISBN: 978-1-61738-763-0

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

Copyright© (2010) by the Materials Research Society
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact the Materials Research Society
at the address below.

Materials Research Society
Proceedings
506 Keystone Dr.
Warrendale, PA 15086

Phone: 724-779-3004 x 531
Fax: 724-779-4396

eproceedings@mrs.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

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Charge Storage and Optical Response of Hybrid Nanodots Floating Gate for Functional Memories	1
<i>Seiichi Miyazaki, Naoya Morisawa, Sho Nakanishi, Mitsuhsa Ikeda, Katsunori Makihara</i>	
Key Role of Aspect Ratio in Optimizing Local Surface Plasmon Sensitivities of Solution Phase Triangular Silver Nanoplates	7
<i>Denise E. Charles, Damian Aherne, Deirdre M. Ledwith, Yurii K. Gun'Ko, John M. Kelly, Werner J. Blau, Margaret E. Brennan-Fournet</i>	
Optically Controlled Nanomagnets	13
<i>Sebastian Mackowski, Tak Gurung, Grzegorz Karczewski, Howard E. Jackson, Leigh M. Smith</i>	
Photodetectors Fabricated from Strain-Free GaAs Coupled Quantum Dots	19
<i>Jiang Wu, Dali Shao, Omar Manasreh, Alvason Zhenhua Li, Zhiming Wang, Gregory Salamo</i>	
Efficient Energy Transfer Between CdS Quantum Dots in Layer-by-Layer Self-Assembled Films	26
<i>Kunio Shimura, Daegwi Kim, Masaaki Nakayama</i>	
Dynamic Control of Plasmon-Exciton Coupling in Au Nanodisk-J-Aggregate Hybrid Nanostructure Arrays	31
<i>Yue Bing Zheng, Bala Krishna Juluri, Linlin Jensen, Lasse Jensen, Tony Jun Huang</i>	
A High Efficiency, Purcell-Enhanced Microcavity Single Photon Emitting Diode	37
<i>D. J. P. Ellis, A. J. Bennett, S. J. Dewhurst, C. A. Nicoll, D. A. Ritchie, A. J. Shields</i>	
Silica-Coated Silver Nanoparticles	42
<i>Georgios A. Sotiriou, Sotiris E. Pratsinis</i>	
Comparison of MISLEDs Made on Si-rich SiO_x and SiN_x	47
<i>Chun-Chieh Chen, Cheng-Tao Lin, Yi-Hao Pai, Gong-Ru Lin</i>	
Effect of Size, Shape, Composition, and Support Film on Localized Surface Plasmon Resonance Frequency: A Single Particle Approach Applied to Silver Bipyramids and Gold and Silver Nanocubes	52
<i>Emilie Ringe, Jian Zhang, Mark R. Langille, Kwonnam Sohn, Claire Cobley, Leslie Au, Younan Xia, Chad A. Mirkin, Jiaying Huang, Laurence D. Marks, Richard P. Van Duyne</i>	
Electrical Control of LSPR from Gold Nanoparticles Using Electrochemical Oxidation	58
<i>Takashi Miyazaki, Rei Hasegawa, Hajime Yamaguchi, Hitoshi Nagato, Haruhi Oh-Oka, Isao Amemiya, Shuichi Uchikoga</i>	

Metal - Enhanced Fluorescence of Chlorophylls in Single Light - Harvesting Complexes	64
<i>Sebastian Mackowski, Dawid Piatkowski, Stephan Wörmke, Achim Hartschuh, Christoph Bräuchle, Tatas H. P. Brotosudarmo, Hugo Scheer, Ashish Agarwal, Nicholas A. Kotov, Alexander O. Govorov</i>	
Effects of Plasmon-Exciton Coupling on the Optical Properties of CdSe/Zns Quantum Dots Coupled to Gold Nanoparticles	73
<i>S. G. Chou, H. G. Kang, M. L. Clarke, J. Hwang</i>	
Polarization Behavior of the Exciton-Polariton Emission of ZnO-Based Microresonators	79
<i>Chris Sturm, Helena Hilmer, Rüdiger Schmidt-Grund, Marius Grundmann</i>	
Grating Coupled Surface Plasmon Resonance Enhanced Fluorescence and Its Application for Cell Observation	85
<i>Xiaoqiang Cui, Keiko Tawa, Junji Nishii</i>	
Photoluminescence from Silver Nanoparticles Enhanced by Surface Plasmon Resonance	91
<i>Oleg A. Yeshchenko, Igor M. Dmitruk, Alexandr A. Alexeenko, Mykhaylo Yu. Losytskyy, Andriy V. Kotko, Anatoliy O. Pinchuk</i>	
Surface Plasmon Resonance Responses of Au-SnO_x Nanocomposite Films	96
<i>Dongfang Yan</i>	
Optical Transmission through Optically Thin and Thick Sub-Wavelength Hole Arrays	102
<i>Serap Aksu, Hatice Altug</i>	
Obtaining Circularly Polarized Optical Spots beyond the Diffraction Limit Using Plasmonic Nano-Antennas	108
<i>Erdem Ogut, Gullu Kiziltas, Kursat Sendur</i>	
Gold-Black as IR Absorber and Solar Cell Enhancer	114
<i>R. E. Peale, J. W. Cleary, M. Ishigami, C. W. Smith, K. Baillie, J. E. Colwell, K. M. Beck, A. G. Joly, O. Edwards, C. J. Fredricksen</i>	
Optical Properties of Si Quantum Dots in Silica via an Implantation Mask	120
<i>Eric G. Barbagiovanni, Lyudmila V. Goncharova, P. J. Simpson, Nathan Armstrong</i>	
Thermophotovoltaic Enhancement: 2D Photonic Crystals to Increase TPV Efficiencies	127
<i>Corey M. Shemelya, Thomas E. Vandervelde</i>	
Injection of Spin Polarized Electrons in InAs Quantum Dots	133
<i>Andreas Russ, Mesut Yasar, Athos Petrou, George Kioseoglou, Connie Li, Aubrey Hanbicki, Berend Jonker, Marek Korkusinski, Pawel Hawrylak</i>	
Temporal Response of the Optically Generated Electric Field in InAs/GaAs Coupled Quantum Dots	142
<i>Kushal C. Wijesundara, Mauricio Garrido, Swati Ramanathan, E. A. Stinaff, A. S. Bracker, D. Gammon</i>	

Study of Tb-Doped Li₂O-LaF₃-Al₂O₃-SiO₂ Glasses Containing Silver Nanoparticles	148
<i>Z. Pan, A. Crosby, O. Obadina, A. Ueda, R. Aga Jr., R. Mu, S. H. Morgan</i>	
Superfluorescent Pulsed Emission from Biexcitons in an Ensemble of CuCl Quantum Dots	154
<i>Kensuke Miyajima, Shingo Saito, Masaaki Ashida, Tadashi Itoh</i>	
Quantum Ring Infrared Photodetector Based on Droplet Epitaxy Technique	160
<i>Dali Shao, Jiang Wu, Zhenhua Li, Omar Manasreh, Vasyly P. Kunets, Zhiming Wang, Gregory Salamo</i>	
Si/SiO₂ Quantum Dots: Electronic Properties	166
<i>I. Filikhin, S. G. Matinyan, B. Vlahovic</i>	
Enhancement of Photovoltaic Device Performance in Close-Packed Nanowire Excitonic Solar Cells by Förster Resonance Energy Transfer (FRET)	172
<i>Karthik Shankar, Sanghoon Kim, Xinjian Feng, Arash Mohammadpour, Craig Grimes</i>	
Shape Control and Emission Wavelength Extension of InP-Based InAsSb Nanostructures	178
<i>Wen Lei, H. H. Tan, C. Jagadish</i>	
Mid-Infrared Electroluminescence from Surface Plasmon Coupled InAs Quantum Dots	184
<i>Brandon Passmore, David Adams, Troy Ribaldo, Dan Wasserman, Stephen Lyon, Eric Shaner</i>	
Red-Green-Blue MOSLED Made by PECVD Grown SiO_x with Detuning RF Plasma Power	189
<i>Chih-Hsien Cheng, Bo-Han Lai, Gong-Ru Lin</i>	
Author Index	