

Symposium 14

Title: **Synthesis And Characterization Of Nanomaterials For Advanced
Microelectronic And Photonic Applications**

Chair/Co-Chair: M. Chu, N. S. Bell

Chair Assistant: Brendan Farrell

Location: 169 Snell

Monday June 13, 2005

Presiding: M. Chu

Paper	Time	Title and Authors
14-01**	11:00 – 11:20 am	Growth of Hierarchical Nanostructured Materials via Soft Solution Routes N. S. BELL
14-01**	11:00 – 11:40 am	Growth of Hierarchical Nanostructured Materials via Soft Solution Routes N. S. BELL
14-02*	11:40 – 12:00 am	Rare Earth Doped Nanocomposites for Photonic Applications J. BALLATO
14-03	12:00 – 12:20 pm	Preparation of Nanoporous Silica and Sodium Fluoride from Hexafluorosilicic Acid and Sodium Silicate J. K. KIM
Presiding: R. Riman		
14-04**	1:30 – 1:50 pm	Top-Down or Bottom-Up: New Approaches for the Fabrication of (Functional) Three-Dimensional Photonic Crystals G. V. FREYMANN
14-04**	1:50 – 2:10 pm	Top-Down or Bottom-Up: New Approaches for the Fabrication of (Functional) Three-Dimensional

Photonic Crystals
G. V. FREYMANN

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| 14-05* | 2:10 – 2:30 pm | Colloidal Crystal Based 3-D Chemical Sensors and Optical Waveguides
P. V. BRAUN |
| 14-06* | 2:30 – 2:50 pm | Novel Types of Optical Gain Media Based on Photonic Crystals “Activated” with Semiconductor Nanocrystals
G. R. MASKALY, V. Klimov |
| 14-07* | 3:20 – 3:40 pm | The Rate-controlled Synthesis of Doped Ferroelectric Nanoparticles under of Micro/Nan reactors
A. V. RAGULYA |
| 14-08* | 3:40 – 4:00 pm | Barium Titanate Based Nanocrystalline Ceramics: Preparation and Properties
A. V. POLOTAI |
| 14-09* | 4:00 – 4:20 pm | Nanoparticles as Functional Building Blocks: Size, Shape and Composition Control
H. YANG |
| 14-10 | 4:20 – 4:40 pm | Alkaline modified Calcium Doped Lead Titanate Film Humidity Sensor Formed Using Sol-Gel Method
L. J. B. LIU |
| 14-11* | 4:40 – 5:00 pm | Dynamics of The Electrohydrodynamic Patterning of Thin Polymer Films
N.WU |

Tuesday June 14, 2005

Presiding: N. Bell

14-12**	10:30 – 10:50 am	Shape-Controlled Synthesis of Metallic Nanostructures B. Wiley
14-12**	10:50 – 11:10 am	Shape-Controlled Synthesis of Metallic Nanostructures B. Wiley
14-13*	11:10 – 11:30 am	Dynamic Tuning of Photoluminescent Dyes in Crystalline Colloidal Arrays S. H. FOULGER
14-14*	11:30 – 11:50 am	Driving Tomorrow's Functional Electronics and Optics with Designer Nanopowders and Nanostructures R. E. RIMAN
14-15*	11:50 – 12:10 am	Engineering the Forces Between Nanocolloids: Challenges and Opportunities D. VELEGOL
14-16	12:10 – 12:30 pm	Preparation and Properties of “Raspberry”-Type Colloidal Building Blocks of ZnS and Fluorescent Core-Shell Silica Nanoparticles S. H. LEE, C. M. Liddell

Presiding: A. Rae

14-17**	1:30 – 1:50 pm	High-Resolution, High-Sensitivity Particle Size Analysis of Concentrated CMP Slurries and other Nanoparticle Systems using the New Techniques of Focused Light Extinction and Scattering D. F. NICOLI
14-17**	1:50 – 2:10 pm	High-Resolution, High-Sensitivity Particle Size Analysis of Concentrated CMP Slurries and other Nanoparticle Systems using the New Techniques of Focused Light Extinction and Scattering

D. F. NICOLI

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| 14-18* | 2:10 – 2:30 pm | Colloidal Self-Assembly, Multibeam Holography and Photonic Crystals
P. WILTZIUS |
| 14-19 | 2:30 – 2:50 pm | Synthesis and Characterization of Polymer Encapsulated Nanoparticles for Microelectronic Applications
P. MESHARAM |
| 14-20 | 3:20 – 3:40 pm | Enlargement of Dye-Sensitized Solar Cell by Using High Performance Transparent Electrode and Nano-Porous TiO ₂ Film
S. KANEKO |
| 14-21 | 3:40 – 4:00 pm | Atomically-Flat Nanosurfaces: Flat Gold Nanoparticles as a Novel Substrate for STM and Photonic Studies
L. A. BUMM |
| 14-22 | 4:00 – 4:20 pm | Liquid Crystal Molecule-Capped Metal Nanoparticles as Dopants for Liquid Crystal Display : Frequency Modulation and Fast Response
N. Toshima |
| 14-23 | 4:20 – 4:40 pm | Two Dimensional Arrangement of Gold Particles Less Than 10nm
L. JIANG |
| 14-24 | 4:40 – 5:00 pm | Computer Simulation Study on Behaviors of Surfactants at the Liquid/Liquid Interface
Y. LI |

Wednesday June 15, 2005

Presiding: S. George

14-25*	10:00 – 10:20 am	High Dielectric Properties of nm-sized BaTiO ₃ Crystallites and Its Origin S. WADA
14-26*	10:20 – 10:40 am	Atomic Layer Deposition on Submicron ZrO ₂ and BaTiO ₃ Particles B. B. BURTON
14-27*	10:40 – 11:00 am	Preparation and Characterization of Cobalt Titanate CoTiO ₃ Nanoparticles by Evaporation-induced Self-assembly G. W. ZHOU
14-28	11:00 – 11:20 am	Shrinking Composite Core-Shell Nanoparticles for Chemical Mechanical Planarization S. ARMINI
14-29	11:20 – 11:40 am	Synthesis and Characterization of Spirobenzopyran Based Photoactive Polymeric Coatings Grafted onto Flat Surfaces and Colloidal Particles M. PIECH, N. S. Bell