



Dept. Materials Science & Engineering

Fall 2007 MRS Presentations

Tuesday, November 27, 2007

9:00-9:30 AM, Room 306 (Hynes)

JJ4: Hierarchical Growth

JJ4.3. Self-branching in GaN Nanowires Induced by a Novel Vapor-Liquid-Solid Mechanism. *C. Nam; J. E. Fischer*

***6:00-8:00pm, LIBERTY BALLROOM (SHERATON)
PENN MSE RECEPTION***

8:00 PM-11:00 PM, Exhibition Hall D (Hynes)

G6: Poster Session II

G6.12. Self-assembly of Nanoparticles into Sub-100 nm Complex Structures through Distortion-assisted Soft Lithography. *Y. Zhang; J. Reed; A. Peter; R. Kaimen; J. Kikkawa; S. Yang*

II10: Poster Session: Theory and Characterization of Nanotubes and Related Nanostructures

II10.18. van der Waals - London Dispersion Interactions For Metallic and Semiconducting Carbon Nanotubes From ab initio, Uniaxial Optical Properties. *R. F. Rajter; R. H. French*

Wednesday, November 28, 2007

9:00-9:15 AM, Room 306 (Hynes)

JJ7: Integrated Nanowire Devices

JJ7.2. Highly-scalable, Ultra-low Power Nonvolatile Phase-change Nanowire Memory Device. *Y. Jung; S. Lee; R. Agarwal*

*9:00-9:30 AM, Back Bay A (Sheraton)

B8: Nanomechanics and Tribology

B8.3. The Study of Nanocarbon Films by and for Atomic Force Microscopy. *R. W. Carpick*



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Wednesday, November 28, 2007 (cont.)

9:45-10:00 AM, Room 204 (Hynes)

QQ4: Carbon Nanotubes for Biomedical Applications

QQ4.5. Detection of Viral Proteins using Human Receptor Functionalized Carbon Nanotubes. *M. Chen; S. Khamis; S. S. Datta; A. Johnson; Y. Zhang; M. Kanungo; A. J. Ho; P. Freimuth; D. van der Lelie; B. Panessa-Warren; J. A. Misewich; S. S. Wong*

10:15-10:30 AM, Room 309 (Hynes)

S6: Hydrogen Storage in Chemical Hydrides and Porous Materials

S6.6. Evaluation of Conductive Polymers' Hydrogen Storage Capability Using Conductometric Gas Sensors: Effect of Thermal Pre-Treatments on HCl-Doped Polyaniline Nanofibers. *Y. Dan; P. Wang; S. Evoy; A. G. MacDiarmid; A. C. Johnson*

11:15-11:30 AM, Back Bay C (Sheraton)

F6: Electrode Modification

F6.8. Contact Properties in Molecular Electronics: The Effect of Molecular Orientation on Potential at Organic- Metal Interfaces. *M. Nikiforov; U. Zerweck; C. Loppacher; T. Park; M. Therien; L. Eng; D. Bonnell*

2:00-2:15 PM, Back Bay A (Sheraton)

B9: Electromechanics on the Nanoscale

B9.3. Domain Specific Reactions on Ferroelectric Oxides. *D. Li; J. Garra; A. Kolpak; A. Rappe; D. Bonnell*

2:45-3:00 PM, Constitution B (Sheraton)

E11: Atomistic Methods II

E11.4. Coarse-Grained Molecular Dynamics Simulations of Nano-Particle Internalization into Bilayer Membranes. *S. Zhang; J. Li; G. Lykotrafitis; S. Suresh*



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Wednesday, November 28, 2007 (cont.)

4:30-4:45 PM, Room 304 (Hynes)

KK9: Chemically-Driven and Phase-Stabilized Patterning

KK9.10. Li-checkerboard Superlattices: Spontaneous Phase Separation as a Route to Nanoscale Pattern Formation. *B. S. Guiton; P. K. Davies*

4:30-4:45 PM, Room 309 (Hynes)

S7: Hydrogen Storage in Carbon and Porous Materials

S7.10. Probing the Sorption Capability of Polymer Coordination Networks. *J. M. Simmons; Y. Liu; C. M. Brown; T. Yildirim; S. Ma; X. Wang; H. Zhou*

8:00 PM-11:00 PM, Exhibition Hall D (Hynes)

II15: Poster Session: Physical Properties and Devices

II15.52. Influence of Alignment on Mechanical Properties of Carbon Nanotube Fibers Prepared by Polymer-free Spinning Process. *M. Kozlov; D. Novitski; R. Baughman; J. Fischer; P. Heiney*

Thursday, November 29, 2007

9:15-9:30 AM, Back Bay A (Sheraton)

B13: Transport on the Nanoscale

B13.3. Electrostatic Force Microscopy of Carbon Nanotubes, Nanofibers, and Graphene: Quantitative Analysis Using Simulation and Experiment. *S. S. Datta; C. Staii; N. J. Pinto; D. R. Strachan; A. T. Johnson*

9:15-9:30 AM, Room 312 (Hynes)

II16: Biology and Chemistry of Carbon Nanotubes I

II16.4. Single Stranded DNA Single Walled Carbon Nanotube Hybrids for the Detection of Gaseous Analytes. *S. M. Khamis; M. Chen; R. Johnson; A. Johnson*



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Thursday, November 29, 2007 (cont.)

9:30-9:45 AM, Room 209 (Hynes)

EE5: Applications

EE5.4. Unusually Low Thermal Conductivity of Gallium Nitride Nanowires. *C. Guthy; C. Nam; A. Stein; J. Misewich; J. E. Fischer*

11:00-11:15 AM, Back Bay A (Sheraton)

B13: Transport on the Nanoscale

B13.7. High Resolution Characterization of Defects in Thin Oxide Films with Multiple Modulation SPM. *M. Nikiforov; M. Brukman; D. Bonnell*

8:00 PM-11:00 PM, Exhibition Hall D (Hynes)

B16: Poster Session IV

B16.1. Ultrananocrystalline Diamond as a New Material for Atomic Force Microscope Probes: Fabrication and Nanoscale Wear Performance. *J. Liu; S. Li; J. A. Carlisle; N. Moldovan; K. T. Turner; R. W. Carpick*

P15: Poster Session

P15.36. Synthesis and Characterization of Smooth/Dense Ultrananocrystalline Diamond Films Via Low Pressure Bias-Enhanced Nucleation and Growth. *Y. Chen; X. Zhong; A. Konicek; D. S. Grierson; N. Tai; I. Lin; B. Kabius; J. M. Hiller; R. W. Carpick; A. V. Sumant; O. Auciello*

B16: Poster Session IV

B16.8. Ferroelectric Nanolithography on Organic Substrates. *C. Rankin; C. Chou; D. Conklin; D. Bonnell*

Friday, November 30, 2007

9:00-9:15 AM, Republic A/B (Sheraton)

FF13/GG15/HH12: Joint Session: Particle-Based Functional Materials

FF13.4/GG15.4/HH12.4. Biomimetic Synthesis of Inorganic Nanostructures on Microstructured Polymer Templates. *J. Ford; Y. Xu; Y. Zhang; G. Wang; S. R. Marder; S. Yang*