

## Department of Materials Science & Engineering at PENN. Fall 2002 MRS Presentations

Invited papers have an asterisk (\*) included with the paper number.

<b>Date</b>	<b>Time</b>	<b>Room</b>	<b>Paper Number</b>
Monday, 12.02.2002	10:15 AM	Room 303 (Hynes)	*A1.4
<b>Title:</b> NON-EQUILIBRIUM STRUCTURES IN LAMELLAR DIBLOCK COPOLYMERS UNDER SHEAR. <u>Karen I. Winey</u> , Univ of Pennsylvania, Dept of Materials Science, Philadelphia, PA.			
Monday, 12.02.2002	11:15 AM	Room 200 (Hynes)	G1.9
<b>Title:</b> ELECTRONIC STRUCTURE, OPTICAL PROPERTIES, LONDON DISPERSION FORCES AND FULL SPECTRAL HAMAKER COEFFICIENTS FOR NANOSTRUCTURED INTERFACES IN STRONTIUM TITANATE. <u>Roger H. French</u> , DuPont Co., Central Research, Experimental Station, Wilmington, DE; Lin K. Denoyer, Deconvolution and Entropy Consulting, Ithaca, NY; Klaus van Benthem, Wilfred Sigle, Max-Planck-Institut für Metallforschung, Stuttgart, GERMANY; V. Adrian Parsegian, Rudolf Podgornik, National Institute of Health, Laboratory of Physical and Structural Biology, Section on Molecular Biophysics, Bethesda, MD.			
Monday, 12.02.2002	12:15 PM	Exeter Room (Sheraton)	*Graduate Student Award Finalist
<u>Albina Y. Borisevich</u> , University of Pennsylvania, DD11.9: <b>Title:</b> STRUCTURE AND PROPERTIES OF NEW LI-BASED ORDERED PEROVSKITES			
Monday, 12.02.2002	02:00 PM	Republic A (Sheraton)	*JJ1.2
<b>Title:</b> AN INTRODUCTION TO MATERIALS SCIENCE FOR BIOENGINEERS: STRUCTURE AND PROPERTIES OF BIOMATERIALS. <u>William R. Graham</u> , The University of Pennsylvania, Dept. of Materials Science and Engineering, Philadelphia, PA.			
Monday, 12.02.2002	02:30 PM	Back Bay C (Sheraton)	DD2.4
<b>Title:</b> MAGNETORESISTANCE IN PEROVSKITE RUTHENATES. <u>Alexander Mamchik</u> , I-Wei Chen, Univ of Pennsylvania, Dept of Materials Science and Engineering, Philadelphia, PA.			
Monday, 12.02.2002	04:00 PM	Republic B (Sheraton)	CC2.5
<b>Title:</b> ATOMISTIC THEORY OF GLASS FORMATION AND ATOMIC TRANSPORT IN BULK METALLIC GLASSES. <u>T. Egami</u> , Univ of Pennsylvania, Dept of Materials Science and Engineering, Philadelphia, PA.			
Tuesday, 12.03.2002	11:00 AM	Room 207 (Hynes)	B3.6
<b>Title:</b> INTERFACE MODULATED MORPHOLOGIES IN POLYMER BLEND THIN FILMS. <u>Russell J. Composto</u> , Hyun-joong Chung, University of Pennsylvania, Materials Science and Engineering, Philadelphia, PA; Howard Wang, Polymer Division, NIST, Gaithersburg, MD.			
Tuesday, 12.03.2002	11:30 AM	Room 200 (Hynes)	G4.4
<b>Title:</b> NANOIMPEDANCE SPECTROSCOPY. <u>Rui Shao</u> , Sergei V. Kalinin, and Dawn A. Bonnell, Dept. of Materials Science and Engineering, Univ. of Pennsylvania, Philadelphia, PA.			

Tuesday, 12.03.2002 11:30 AM Room 208 (Hynes) C5.4  
**Title:** NANO-SCALE MODIFICATION OF METAL SURFACES FOR BIOMEDICAL APPLICATIONS. Anna Marie Lipskib, Hoon Choib, James Ferrisb, Douglas Yatesb, I-Wei Chenb and V. Prasad Shastria,b, aJoseph Stokes Jr., Research Institute, Children's Hospital of Philadelphia, Philadelphia, PA and bDepartment of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA.

Tuesday, 12.03.2002 01:30 PM Back Bay C (Sheraton) \*DD4.1  
**Title:** NEW EXAMPLES OF CATION ORDER IN MIXED-METAL PEROVSKITES. Peter K. Davies, Dept Materials Science & Engineering, University of Pennsylvania, Philadelphia, PA.

Tuesday, 12.03.2002 02:15 PM Republic B (Sheraton) CC5.3  
**Title:** ATOMIC-LEVEL STRESSES, LOCAL FREEZING AND RELATIONSHIP TO FLUCTUATIONS IN THE POTENTIAL ENERGY LANDSCAPE. Mahadevan Khantha, Hao Chen and Takeshi Egami, Dept of Materials Science and Engineering, Univ of Pennsylvania, Philadelphia, PA.

**Tuesday, 12/3, 6:00-8:00PM, Liberty Ballroom (2<sup>nd</sup> floor Sheraton)  
Reception, Dept. Materials Science, University of Pennsylvania**

Tuesday, 12.03.2002 08:00 PM Exhibition Hall D (Hynes) G7.32  
**Title:** A COMPARISON OF SCANNING IMPEDANCE AND SCANNING GATE MICROSCOPES FOR DETERMINING PROPERTIES OF INDIVIDUAL DEFECTS IN MOLECULAR CIRCUITS. Sergei V. Kalinin and Dawn A. Bonnell, Dept. of Materials Science and Engineering, Univ. of Pennsylvania, Philadelphia, PA; Marcus Freitag and A.T. Johnson, Dept. of Physics and Astronomy, Univ. of Pennsylvania, Philadelphia, PA. clubsuit

Tuesday, 12.03.2002 08:00 PM Exhibition Hall D (Hynes) CC6.16  
**Title:** EFFECT OF CSRO ON GLASS FORMATION IN BINARY SYSTEMS. Hao Chen, Mahadevan Khantha, Takeshi Egami, Univ of Pennsylvania, Dept of Materials Science and Engineering, Philadelphia, PA.

Wednesday, 12.04.2002 09:15 AM Room 304 (Hynes) U10.3  
**Title:** FERROELECTRIC LITHOGRAPHY OF MULTICOMPONENT NANOSTRUCTURES. D.A. Bonnell, S.V. Kalinin, X. Lei, Z. Hu, and J.H. Ferris, Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA.

Wednesday, 12.04.2002 10:45 AM Room 304 (Hynes) U10.6  
**Title:** ELECTRON BEAM PATTERNING OF FERROELECTRIC DOMAINS. James H. Ferris, Sergei V. Kalinin, and Dawn A. Bonnell, Dept. of Materials Science and Engineering, Univ. of Pennsylvania, Philadelphia, PA.

Wednesday, 12.04.2002 11:00 AM Republic B (Sheraton) CC7.7  
**Title:** LOCAL ATOMIC TOPOLOGY OF Al- AND Fe-BASED METALLIC GLASSES BY NEUTRON DIFFRACTION. Kyungsoo Ahn, Despina Louca, G. Shiflet, and J. Poon, University of Virginia, Charlottesville, VA; T. Egami, University of Pennsylvania, Philadelphia, PA.

Wednesday, 12.04.2002 11:15 AM Room 311 (Hynes) F6.8  
**Title:** IMAGING, STRUCTURAL AND CHEMICAL ANALYSIS OF PLV-GROWN SILICON NANOWIRES. R. Barsotti Jr., J.E. Fischer, C.H. Lee, J. Mahmood, Univ. Penna, Dept. of Materials Science and Engineering, Philadelphia PA; C. Adu, P.C. Eklund, Penn State U., Dept. of Physics, University Park, PA.

Wednesday, 12.04.2002 11:30 AM Back Bay B (Sheraton) BB3.10  
**Title:** DISLOCATION/TWIN/INTERFACE INTERACTIONS DURING DEFORMATION OF PST TiAl SINGLE CRYSTALS, AN AFM STUDY. Yali Chen, David P. Pope, Vaclav Vitek, University of Pennsylvania, Department of Materials Science and Engineering, Philadelphia, PA.

Wednesday, 12.04.2002 01:30 PM Room 200 (Hynes) \*G9.1/NN6.1  
**Title:** "ELECTRONIC CHARACTERIZATION OF SINGLE DEFECTS IN ONE-DIMENSIONAL NANOSTRUCTURES. A.T. Johnson, Marcus Freitag, University of Pennsylvania, Dept of Physics and Astronomy, Philadelphia, PA; Sergei V. Kalinin, Dawn A. Bonnell, University of Pennsylvania, Dept of Materials Science and Engineering, Philadelphia, PA."

Wednesday, 12.04.2002 02:00 PM Back Bay C (Sheraton) DD8.2  
**Title:** INVESTIGATION OF ORDERED SINGLE PHASE Sr<sub>2</sub>FeMoO<sub>6</sub> AND ITS SOLID SOLUTION WITH LaFeO<sub>3</sub>. M.R. Suchomeł, P.K. Davies, Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA.

Wednesday, 12.04.2002 02:15 PM Back Bay B (Sheraton) BB4.3  
**Title:** ATOMISTIC STUDIES OF DISLOCATION MOBILITY IN TiAl. R. Porizeka, S. Znama, D. Nguyen-Manhb, V. Viteka and D.G. Pettiforb; aDepartment of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA; bDepartment of Materials, University of Oxford, Oxford, UNITED KINGDOM.

Wednesday, 12.04.2002 02:45 PM Back Bay B (Sheraton) BB4.5  
**Title:** INTERDIFFUSION AND PHASE TRANSFORMATION IN POLYSYNTHETICALLY TWINNED (PST) TiAl / Ti DIFFUSION COUPLES. Ling Pan, David E. Luzzi, Univ of Pennsylvania, Dept of Materials Science and Engineering, Philadelphia, PA.

Wednesday, 12.04.2002 02:45 PM Room 200 (Hynes) G9.5/ NN6.5  
**Title:** QUANTUM CONFINEMENT ON THE VIBRATIONAL PROPERTIES OF SILICON NANOWIRES. C.K.A. Adu, G.U. Sumanasekera, B.K. Pradhan, and P.C. Eklund, Dept. of Physics, Pennsylvania State University, University Park, PA; J.E. Fischer, Department of Material Science and Engineering and Laboratory for Research on the Structure of Matter, University of Pennsylvania, Philadelphia, PA.

Wednesday, 12.04.2002 08:00 PM Exhibition Hall D (Hynes) BB5.10  
**Title:** ELEMENT DISTRIBUTIONS IN TERNARY 2 PST-TiAl X (W, Ta, Mo, OR Cu) ALLOYS CHARACTERIZED BY AN ANALYTICAL STEM. Wei (Wayne) Zhao and David E. Luzzi, Dept of Materials Sciences and Engineering, University of Pennsylvania, Philadelphia, PA; anow at Infineon Technologies, Richmond, VA.

Thursday, 12.05.2002 11:00 AM Room 200 (Hynes) G11.3  
**Title:** SCANNING PROBE MICROSCOPY OF SELF-ASSEMBLED MONOLAYERS OF PHENYLENE/ETHYNYLENE MOLECULES. R. Ross Getty, Simona Percec, Kenneth G. Sharp, Roger H. French, Paula B. Hietpas, Gregory S. Blackman, DuPont Experimental Station, Wilmington, DE; Tony Alvarez, Dawn A. Bonnell, Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA. clubsuit

Thursday, 12.05.2002 11:15 AM Room 200 (Hynes) G11.4  
**Title:** SURFACE POTENTIAL IMAGING MECHANISMS OF SELF-ASSEMBLED MONOLAYERS. Tony Alvarez, Dawn Bonnell, Univ of Pennsylvania, Dept of Materials Science and Engineering, Philadelphia, PA; R. Ross Getty, DuPont Experimental Station, Wilmington, DE. clubsuit

Thursday, 12.05.2002 11:30 AM Room 304 (Hynes) U15.10  
**Title:** TRANSPORT MECHANISM AND NON-LINEAR DIELECTRIC BEHAVIOR AT SrTiO<sub>3</sub> GRAIN BOUNDARIES. Sergei V. Kalinin and Dawn A. Bonnell, Univ of Pennsylvania, Philadelphia, PA.

Thursday, 12.05.2002 02:00 PM Room 312 (Hynes) I11.3  
**Title:** MECHANICAL AND STRUCTURAL INVESTIGATION OF HIGHLY ALIGNED SINGLE-WALLED CARBON NANOTUBES IN POLYMER COMPOSITES. Reto Haggemueller, Wei Zhou, John E. Fischer and Karen I. Winey, University of Pennsylvania, Dept of Materials Science and Engineering, Philadelphia, PA.

Thursday, 12.05.2002 04:00 PM Room 312 (Hynes) I11.9  
**Title:** MACROSCOPIC NEAT SINGLE WALL CARBON NANOTUBE FIBERS. Lars M. Ericson, Sivarajan Ramesh, Joseph Sulpizio, Hua Fan, Rajesh Saini, Virginia A. Davis, Nicholas Parra-Vasquez, Jason Longoria, Carter Kittrell, Matteo Pasquali, Robert H. Hauge, Richard E. Smalley, Center for Nanoscale Science and Technology, Rice University, TX; Juraj Vavro and John E. Fischer, Materials Science & Engineering, University of Pennsylvania, PA.

Thursday, 12.05.2002 08:00 PM Exhibition Hall D (Hynes) DD11.9  
**Title:** STRUCTURE AND PROPERTIES OF NEW Li-BASED ORDERED PEROVSKITES. Albina Y. Borisevich and Peter K. Davies, Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA.

Thursday, 12.05.2002 08:00 PM Exhibition Hall D (Hynes) DD11.11  
**Title:** LOCAL STRUCTURE AND PROPERTIES OF THE  $(1-x)\text{Pb}(\text{Sc}_{2/3}\text{W}_{1/3})\text{O}_3$  --  $(x)\text{Pb}(\text{Ti}/\text{Zr})\text{O}_3$  RELAXOR PEROVSKITES. Pavol Juhás, Wojciech Dmowski, Takeshi Egami, Peter K. Davies, Dept. of Materials Science, Univ. of Pennsylvania, Philadelphia, PA.

Thursday, 12.05.2002 08:00 PM Exhibition Hall D (Hynes) DD11.15  
**Title:** STRUCTURAL, DIELECTRIC AND PIEZOELECTRIC PROPERTIES OF THE CdTiO<sub>3</sub>-PbTiO<sub>3</sub>-PbZrO<sub>3</sub> AND CdTiO<sub>3</sub>-PbTiO<sub>3</sub>-(Na<sub>0.5</sub>Bi<sub>0.5</sub>)TiO<sub>0.5</sub> SYSTEMS. D.Y. Suárez-Sandoval, P.K. Davies, Dept. of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA.

Thursday, 12.05.2002 08:00 PM Exhibition Hall D (Hynes) DD11.21  
**Title:** STRUCTURE AND DIELECTRIC PROPERTIES OF Ba<sub>8</sub>ZnTa<sub>6</sub>O<sub>24</sub>. Meganathan Thirumal, Peter K. Davies, University of Pennsylvania, Dept of Materials Science and Engineering, Philadelphia, PA.

Thursday, 12.05.2002 08:00 PM Exhibition Hall D (Hynes) I12.21  
**Title:** PREFERRED ORIENTATION IN FIBERS OF HIPCO SINGLE WALL CARBON NANOTUBES FROM DIFFUSE X-RAY SCATTERING. W. Zhou, K.I. Winey, J.E. Fischer, Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA; S. Ramesh, R.K. Saini, L.M. Ericson, V.A. Davis, and R.E. Smalley, Center for Nanoscale Science and Technology, Rice University, Houston, TX.

Friday, 12.06.2002 10:30 AM Room 200 (Hynes) G14.7/ NN8.7  
**Title:** FIELD EMISSION FROM PEAPODS (FILLED SINGLE WALL CARBON NANOTUBE SYSTEMS). Richard M. Russo, Siddhartha Kar, Christine Sung, David E. Luzzi, Dept of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA.

Friday, 12.06.2002 11:30 AM Room 207 (Hynes) B10.7  
**Title:** BIOMIMETIC DEXTRAN COATINGS ON SILICON WAFERS: THIN FILM PROPERTIES AND WETTING. Michela Ombellia, Russell J. Compostob and David M. Eckmann; aDepartment of Chemistry, University of Perugia, Perugia, ITALY; bDepartment of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA; cDepartment of Anesthesia and The Institute for Medicine and Engineering, University of Pennsylvania, Philadelphia, PA.