

**2003 Joint Symposium of the Florida Society for Microscopy
and the Florida Chapter of the American Vacuum Society.
First Focused Ion Beam Focused Interest Group Meeting.**

Program

Monday, March 17, 2003.

Opening and Keynote Address – Pegasus Ballroom G-H – G. Braunstein Chair

- 8:30-8:40 Welcome and Introduction: Gabriel Braunstein, 2003 FSM/FLAVS Symposium Chair.
- 8:40-9:25 Keynote Address: Why Hydrogen?, David Block, Florida Solar Energy Center, University of Central Florida.

Session I: Hydrogen Research – Pegasus Ballroom G-H – N. Dhere Chair

- 9:30-10:00 Hydrogen Production Via Photocatalysis, C. Linkous, Florida Solar Energy Center, University of Central Florida.
- 10:00-10:30 Metal Hydride Devices, B. Krakow, University of South Florida.
- 10:30-11:00 Coffee Break
- 11:00-11:30 Hydrogen Storage and Transportation Systems, B. V. Sankar, University of Florida.
- 11:30-12:00 Two-Stage Cryocooler Development for Liquid Hydrogen Systems, L. Chow, University of Central Florida.

**Session II: Microscopy in the Biological Sciences – Pegasus Ballroom I
J. A. Moore and B. Loraam Chairs**

- 9:30-10:30 Biomedical Engineering: From Living Better to Living Computers, W. Ditto, University of Florida.
- 10:30-11:00 Coffee Break
- 11:00-11:30 Assays of Peptide Binding Affinity Using Atomic Force Microscopy, D. Walters, University of Central Florida
- 11:30-12:00 Cooking with Nanoparticles - Merging Nanotechnology and Nanobiology B. Rzigalinski, University of Central Florida

Lunch Break 12:00-13:00

Session III: Wide Band Gap Semiconductors and Novel Oxides
Pegasus Ballroom G-H, J. Zhang and L. Chernyak Chairs

- 13:00-13:30 Deep Traps in GaAs, GaAlAs, GaInAs, and GaN, N. Halder, University of South Florida.
- 13:30-14:00 Electron Injection Induced Effects in GaN Device Structures as Investigated by Optical and Electron Beam Techniques, A. Schulte, University of Central Florida.
- 14:00-14:30 Investigation of Co Doped TiO₂ Thin Film by Pulsed Laser Deposition, Y. Xin, Florida State University
- 14:30-15:00 Coffee Break
- 15:00-15:30 ZnO Thin Films and Nanostructures of Functional Electronics, D. Norton, University of Florida
- 15:30-16:00 Novel Materials for Spintronic and Ferroelectric Devices, M. Tomar, University of Puerto Rico, Mayaguez.
- 16:00-16:30 The Close Coupling Between Lattice and Electronic Structure on the Surface of Ca_{2-x}Sr_xRuO₄ (0 ≤ x ≤ 2), J. Zhang, Florida International University.

Session IV: Microscopy in the Physical Sciences – Pegasus Ballroom I
L. A. Dempere Chair

- 13:00-13:25 Microscopy and Image Processing for Particle Size and Shape Analysis, K. Powers, University of Florida
- 13:25-13:50 Convergent Beam Electron Diffraction in the 21st Century, M. Kaufman, University of Florida
- 13:50-14:10 Nanoscale Phenomena in Metal/Oxide Systems: Compositional Effects on the Oxidation Performance of High-Temperature Alloys, K. Průbner, University of Florida
- 14:10-14:30 There May Be an Atom Probe in Your Future, T. Kelly, ‘Microscopy Society of America Local Affiliates Society Speaker’ and Imago Scientific
- 14:30-15:00 Coffee Break

Session V: Surfaces and Interfaces – Pegasus Ballroom I
R. Vanfleet Chair

- 15:00-15:20 Holographic Processing of Kikuchi Electron Diffraction Data From Si₍₁₁₁₎/Al, G. S. Glander, Stetson University.
- 15:20-15:40 STM Studies of the Growth and Reactivity of Oxide-Supported Metal Nanoparticles: Cu and Ni on TiO₂(110), D. Chen, University of South Carolina.
- 15:40-16:00 Modeling Ta-Si Interfaces With MEAM, E. Ristolainen, University of Tampere, Finland
- 16:00-16:20 Towards Quantitative XPS Imaging, D. Surman, Kratos Analytical.

Poster Session and Reception – Pegasus Ballroom A-F 16:30-20:00

Tuesday March 18, 2003

**Session VI: Nanoscale Science and Technology Tutorials – Pegasus Ballroom G-H
S. Seal, R. Vanfleet Chairs**

- 8:30-9:15 A Tutorial on Nanotechnology, R. Schlaf, University of South Florida.
9:15-10:00 Foundations of Nanotechnology: Theory, Modeling, and Computation, S. Sinnott, University of Florida.
10:00-10:30 Coffee Break
10:30-11:15 Near-Field Nano-Optics, A. Dogariu, University of Central Florida
11:15-12:00 Cooperative Magnetism in Nanocomposite Materials, S. Hariharan, University of South Florida

Lunch Break 12:00-13:00

Session VII: Nanoscience – Pegasus Ballroom I – S. Sinnott Chair

- 13:00-13:30 Polymer Derived Ceramics, L. An, University of Central Florida.
13:30-14:00 Bulk Nanostructured Components by Plasma Spraying?, A. Agarwal, Florida International University.
14:00-14:30 Biologically-Derived Masks for Nanofabrication, A. Winningham, University of Central Florida.
14:30-15:00 Coffee Break

Session VIII: Focused Ion Beam 1 – Pegasus Ballroom G-H – L. Giannuzzi Chair

- 13:00-13:30 TEMPro, J. McDowell, Sela.
13:30-14:00 Preliminary Experiments with a Dual Beam System, R. Langford, Oxford University.
14:00-14:30 Fib for Everything, L. Giannuzzi, University of Central Florida.
14:30-15:00 Coffee Break

Session IX: Nanoscience – Pegasus Ballroom I – R. Schlaf Chair

- 15:00-15:30 Self-Aligning, Modifying, and Manipulating, Multiwall Carbon Nanotubes, W. Sigmund, University of Florida.
15:30-16:00 Enhanced Functionality of Nanotube Modified, Atomic Force Microscopy Tips, A. G. Rinzler, University of Florida.
16:00-16:30 Title NA, P. Xiong, Florida State University.

Session X: Focused Ion Beam 2 – Pegasus Ballroom G-H – L. Giannuzzi Chair

- 15:00-15:30 In-Situ Sample Preparation and High Resolution SEM-STEM Analysis, M. Weschler, FEI Company.
- 15:30-16:00 Applications of the New CrossBeam Technology to Extended Accuracy in Site Specific Cross Sectioning and TEM Sample Preparation, P. Gnauk, LEO Elektronenmikroskopie.
- 16:00-16:30 An Advanced Dual Column FIB for TEM Specimen Preparation and Nanotechnology, Atsushi Yamauchi SII Instruments, and JEOL USA Inc.

Student Competition Award Ceremony - Pegasus Ballroom G-H 16:30-17:00

Session XI: FIB Users Meeting – Pegasus Ballroom G-H – L. Giannuzzi Chair

- 17:00-19:00 FIB Users Meeting: 10 minute informal presentations involving new techniques and applications of FIB/dual beam.

Janice Lomness, UCF
D. Fries, USF
T. Kelly, Imago Scientific
F. Stevie, NCSU
B. Kempshall
S. Schwarz, UCF
M. Weschler, FEI Company
K. McIlwraith, Hitachi

Equipment Exhibit - Pegasus Ballroom A-F
Monday, March 17, 2003, 10:30 to 20:00
Tuesday March 18, 2003, 10:30 to 15:00