

SYMPOSIUM PROGRAM
Monday March 12, 2007

8:00-9:00 **Student Poster Session - Judging Round 2, Pegasus Ballroom A-F**
Coordinator: Mariana Sendova, New College of Florida

WELCOME and OPENING
Pegasus Ballroom G-H

9:00-9:05 **Welcome and Introduction**
Kerry Siebein, University of Florida
Program Chair

KEYNOTE ADDRESS

9:05-10:00 **Neal Shinn, Sandia National Laboratory**
President of the American Vacuum Society (AVS)
"Delivering on the Promise of Nanoscience"

10:05-10:30 **Coffee Break sponsored by ICMAS**

Vendors and Equipment Exhibit
Pegasus Ballroom A-F
11:00 am - 7:00 pm

THIN FILMS

Pegasus Ballroom G-H

Chair: Winston Schoenfeld, CREOL, University of Central Florida

10:30-11:00 **Transition- Metal Nitrides and Related Compounds for Energy-Related Application: Nanostructure Design at the Atomic Scale** (*Invited*) Joe Greene, Frederick Seitz Materials Research Laboratory, University of Illinois

11:00-11:30 **Epitaxial Growth of ZnO-based Multilayered Structures for Electronic and Photonic Applications,** (*Invited*) Andre Osinsky, SVT Associates

11:30-12:00 **Thin Film Photovoltaics,** (*Invited*) Neelkanth Dhere, Florida Solar Energy Center

12:00-1:00 **Lunch Break**

MICROSCOPY IN THE PHYSICAL SCIENCES

Pegasus Ballroom G-H

Chair: Jerry Bourne, MAIC, University of Florida

- 1:00-1:20 Multi-scalar Microscopy of Engineering Superconductors, *(Invited)*
Peter J. Lee, National High Magnetic Field Laboratory, Florida State University
- 1:30-2:00 Chemical Characterization of Materials with Transmission Electron
Microscopy, *(Invited)* Helge Heinrich, AMPAC, University of Central Florida
- 2:00-2:30 Femtosecond Electron Diffraction: Probing Structural Dynamics on the
Fundamental Time and Length Scales, *(Invited)* Shouhua Nie, Physics
Department National High Magnetic Field Laboratory, Florida State University
- 2:30-3:00 Afternoon Break sponsored by JEOL USA and Gatan

Vendors and Equipment Exhibit

Pegasus Ballroom A-F

11:00 am - 7:00 pm

SYNCHROTRON/NEUTRON RADIATION

Pegasus Ballroom G-H

Chair: Helge Heinrich, AMPAC, University of Central Florida

- 3:00-3:30 Development and Applications of 3D X-Ray Structural Microscopy with
Submicron Spatial Resolution, *(Invited)* John D. Budai, Oak Ridge National
Laboratory
- 3:30-4:00 Atomic Vibrational Dynamics in Nanoscaled Metallic Multilayers and
Amorphous Thin Films Investigated by Nuclear Resonant Inelastic X-Ray
Scattering (NRIXS), *(Invited)* W. Keune, University of Central Florida
- 4:00-4:15 Time-resolved far-infrared studies at the National Synchrotron Light Source,
(Invited) David B. Tanner, University of Florida
- 4:15-4:30 Macromolecular Cryo-crystallography at Synchrotrons, *(Invited)*
Thayumanasamy Somasundaram, Florida State University

POSTERS SESSION & RECEPTION

Reception Sponsors: FEI, Gatan and JEOL USA

Pegasus Ballroom A-F

Mariana Sendova, Poster Coordinator

Student Union closes at 7:00 p.m.

Symposium Program
Tuesday March 14, 2006

SURFACE CHARACTERIZATION

Pegasus Ballroom G-H

Chair: Amelia Dempere, MAIC, University of Florida

- 8:00-8:30 Characterization of Anisotropic Flexible Substrates by Spectroscopic Ellipsometry and Polarimetry, E. Teboul, HORIBA Jobin Yvon Inc
- 8:30-9:00 Electrostatic Beneficiation of Lunar Simulant, Steve Trigwell, ASRC Aerospace, Kennedy Space Center, FL
- 9:00-9:30 Research Support and Analysis of Next Generation Capacitor Technology: Electrolytic Capacitors, *(Invited)* Matt Olszta, Penn State University
- 9:30-10:00 Characterization of Thin-Layered Structures by X-Ray Scattering Methods, *(Invited)* Valentin Craciun, MAIC, University of Florida
- 10:00-10:30 Coffee Break sponsored by PHI

Vendors and Equipment Exhibit

Pegasus Ballroom A-F

10:00 am - 3:00 pm

RENEWABLE ENERGY

Pegasus Ballroom G-H

Chair: Neelkanth Dhere, Florida Solar Energy Center

- 10:30-11:00 Photo-electrochemical Generation of Hydrogen Using Sonic Mediated Hybrid Titania Nanotubes, *(Invited)* M. Misra, University of Nevada
- 11:00-11:30 Semiconductor Materials and Tandem Cells for Photoelectrochemical Hydrogen Production: $\text{GaP}_{1-x}\text{N}_x$, $\text{GaInP}_{1-x}\text{N}_x$ And $\text{Cu}(\text{In,Ga})(\text{Se,S})$ Systems, *(Invited)* John A. Turner, National Renewable Energy Laboratory
- 11:00-12:00 An Overview of Photovoltaics Research, *(Invited)* T.J. Anderson, University of Florida
- 12:00-1:00 Lunch Break - FSM Annual Business Meeting

BIOMIMICRY/MICROSCOPY IN BIOSCIENCE

Pegasus Ballroom G-H

Chair: Tony Greco, University of South Florida

- 1:00-1:30 **Effects of Gravity on Cultured Bone Cells, *(Invited)***
William Landis, Northeastern Ohio Universities
- 1:30-2:00 **An Autonomous Microbial Genosensor, *(Invited)***
David P. Fries, University of South Florida
- 2:00-2:30 **Characterization of Nanomaterials for Nanotoxicity Assessment:
"Resolving" Nanoparticles in Complex Environments, *(Invited)***
Maria Palazuelos, University of Florida
- 2:30-3:00 **Coffee Break sponsored by Turbo Vacuum**

Vendors and Equipment Exhibit

Pegasus Ballroom A-F

10:00 am - 3:00 pm

FOCUSED ION BEAM - SESSION I

Pegasus Ballroom I

Chair: Lucille Giannuzzi - FEI

- 3:00-3:30 **FIB Characterization of the Cathode/Electrolyte Interface in a Single Solid
Oxide Fuel Cell, *(Invited)* Aijie Chen, University of Florida**
- 3:30-4:00 **FIB Preparation of Atom Probe Specimens, *(Invited)***
G. B. Thompson, University of Alabama
- 4:00-4:15 **The Use of End Point Current Monitor for FIB Milling Depth Control in
Multilayer Nano-Devices, *(Invited)* Yusuf Emirov, University of South Florida**
- 4:15-4:30 **What's New with Dual Beam Instrumentation, *(Invited)***
Lucille Giannuzzi, FEI Company

SURFACE SCIENCE - Session II

Pegasus Ballroom G-H

Chairs: Mark Davidson, MICROFABRITECH, University of Florida

- 3:00-3:30 **Hydrothermal Dehydration of Aqueous Carbohydrate Solutions in a Closed System, (*Invited*)** Greg Exharos, Pacific Northwest Laboratories
- 3:30-4:00 **On the Nature of Room Temperature H Sensing, (*Invited*)**
Sudipta Seal, University of Central Florida
- 4:00-4:30 **Novel Channels of Chemical Reactivity Observed on Single Crystal Metal Carbide Surfaces, (*Invited*)** Scott Perry, University of Florida
- 4:30-4:45 **FL AVS Annual Business Meeting**

4:45-5:00

STUDENT POSTER COMPETITION

AWARDS CEREMONY

Pegasus Ballroom G-H

Kerry N. Siebein, Program Chair

Student Union closes at 7:00 p.m.