Monday, March 5, 2012

7:30 am-5:00 pm
Registration

7:30 am-10:30 am
Equipment Exhibit Setup

7:30 am-10:30 am
Student Poster Setup

8:00 am-9:05 am
Welcome and Introduction
Program Chair: Kerry Siebein (National Institute of Standards)

8:05 am-9:00 am
Keynote Address: **History of Vacuum Technology-(My Perspective)**
Kurt J. Lesker III, Kurt J. Lesker Company

Surface Science

Chair: Wei David Wei, University of Florida

9:00 am-9:25 am
Photoinduced Magnetization Effects in Nanometer Scale Heterostructures of Prussian Blue Analogs
(Invited) Daniel R. Talham, Dept. of Chemistry, University of Florida

9:25 am-9:50 am
Structure-Specific Plasmonics
(Invited) Kenneth L. Knappenberger, Jr., Florida State University

09:50 am-10:15 am
Fundamental Growth Mechanisms of Graphene on Nickel Surfaces
(Invited) Matthias Batzill, Dept. of Physics, University of South Florida

10:15 am-10:45 am
Coffee Break (sponsored by JEOL USA, Inc.)

Nanoelectronics

Chair: Saiful Khondaker, University of Central Florida

10:45 am-11:10 am
Large Area Electronics with Graphene Oxide
(Invited) Manish Chowalla, Dept. of Materials Science and Eng., Rutgers University

11:10 am-11:35 am
Carbon Nanotube Film-Silicon Junctions: Electronic Properties and Device Characterization
(Invited) Ant Ural, Dept. of Electrical and Computer Eng., University of Florida

11:35 am-12:00 pm
Trends in Nanoelectronics in Wider Scope
(Invited) Robert Redhammer, Marian Vesely, Andrej Vincze, Slovak University of Technology, Slovakia

12:00 pm-01:20 pm
Lunch Break

Microscopy in the Biological and Physical Sciences/FIB

Chair: Lucille Giannuzzi, Giannuzzi & Associates

1:20 pm-3:00 pm
The SHIRLEY Background in Overlapping XPS Peaks
(Invited) Mariela Bravo-Sanchez, Alberto Herrera-Gomez, CINVESTAV-Unidad Querétaro, México

1:45 pm-2:10 pm
Laser Modification of Surfaces in a FIB/SEM
(Invited) David J. Hwang[1,2,*], Costas P. Grigoropoulos[3,4], Andrew M. Minor[5,6], [1]State University of New York, Stony Brook, [2]Laser Solar PV Laboratory, Advanced Energy Research and Technology Center, Stony Brook, [3]Dept. of Mech. Eng., University of California, [4]Advanced Energy Technologies Dept, EETD, Lawrence Berkeley National Laboratory, [5]Dept. of Material Science and Eng., University of California, [6]National Center for Electron Microscopy, Lawrence Berkeley National Laboratory

2:10 pm-2:35 pm
Enhanced Properties of Multiferroic Nanocomposite Materials: An Electron Microscopy Study
(Invited) Jennifer S. Andrew, Dept. of Materials Science and Eng., University of Florida

2:35 pm-3:00 pm
Cs-Corrected STEM for Imaging and Spectroscopy of Complex Oxides and Catalysts
(Invited) Dong Su, Center for Functional Nanomaterials, Brookhaven National Lab

3:00 pm-3:30 pm
Coffee Break (sponsored by Turbo Vacuum)

Young Leader's Session

Chairs: Edward Wrzesniewski, University of Florida
Daniel Yates, University of Central Florida

3:30 pm-3:45 pm
High-Efficiency, Solution-Processed Hybrid Organic-Inorganic Photovoltaic Cells
Renjia Zhou, Ying Zheng, Lei Qian, Paul H. Holloway, and Jiangeng Xue, Department of Materials Science & Engineering, University of Florida, Gainesville, FL 32611

3:45 pm-4:00 pm
Absorption from Plasmonic Antenna Arrays
Kathryn E. O'Brien[1], Po-Yuan Wang[1], Paul H. Holloway[1], Mark R. Davidson[1], [1]Department of Materials Science & Engineering, University of Florida, Gainesville, FL

4:00 pm-4:15 pm
Epitaxial Growth of MgO and Cubic ZnMgO by Plasma-Enhanced Molecular Beam Epitaxy
R. Casey Boutwell, M. Wei, Winston V. Schoenfeld, CREOL & FPCE - The College of Optics & Photonics, The University of Central Florida

4:15 pm-4:30 pm
Graphene Enabled Vertical Field Effect Transistors
M. Lemaitre, B. P. Gila, B. R. Appleton, Department of Materials Science & Engineering, University of Florida, Gainesville, FL 32611

4:30 pm-4:45 pm
Synchrotron X-ray Scattering Investigation of Thin Film Interface Kinetics
Andrew P. Warren[1], Michael F. Toney[2], Katayun Barmak[3], Ivan I. Kravchenko[4], Kevin R. Coffey[1], [1]Advanced Materials Processing and Analysis Center, University of Central Florida, [2]Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory, [3]Department of Materials Science and Engineering, Carnegie Mellon University, [4]Center for Nanophase Materials Sciences, Oak Ridge National Laboratory

5:00 pm-7:00 pm
Poster Session (sponsored by FESC, JEOL USA, Inc. and MEWASA North America, Inc.)
Chair: Ying Zheng, University of Florida

Reception (sponsored by Physical Electronics, Inc.)

Tuesday, March 6, 2012

8:00 am-12:00 pm
Registration

8:00 am-9:00 am
Poster Session (sponsored by FESC, JEOL USA, Inc. and MEWASA North America, Inc.)
Chair: Ying Zheng, University of Florida

Renewable Energy

Chairs: Neelkanth Dhere, Florida Solar Energy Center, University of Central Florida
Tim Anderson, Florida Program for Alternative Energies, University of Florida

9:00 am-9:25 am
Specialty Glasses for Photovoltaics
(Invited) James E Webb, Corning Incorporated

9:25 am-9:50 am
CIGS and CZTS Thin Film Solar Cells
(Invited) Eray S. Aydil, Dept. of Chemical Eng. and Materials Science, University of Minnesota

9:50 am-10:15 am
Depth Profiling of Organic Electronic Materials
(Invited) John S. Hammond, Physical Electronics, Inc.

10:15 am-10:35 am
Coffee Break (sponsored by Oerlikon Leybold Vacuum)

Thin Films

Chairs: Winston Schoenfeld, University of Central Florida
& Mei Zhang, Florida State University

10:35 am-11:00 am
Atmospheric Plasma for the Deposition of Thin Coatings: Some Examples
(Invited) François Reniers, University Libre de Bruxelles, Belgium

11:00 am-11:25 am
Electronic Functionality in Thin Oxide Films: 2-D Electron Liquid at $LaAlO_3/SrTiO_3$ Interfaces
(Invited) Maitri P. Warusawithana, National High Magnetic Field Laboratory, Florida State University

11:25 am-11:50 am
Growth of II-Oxide Wide-Bandgap Semiconductors for UV Applications
(Invited) M. Wei *, R. C. Boutwell, and W. V. Schoenfeld, University of Central Florida

11:50 am-12:15 pm
An Electrically Stimulated Plasmonic Light Source
(Invited) Mark Davidson[1,2], Jonathan Gorrell[1], Michael Maines[1], Lev Gasprov[1,3], Jean Tokarz[1], Andres Trucco[1], Sean Jones[1,2], [1]Advanced Plasmonics, Inc., [2]University of Florida, [3]University of North Florida

12:15 pm-1:30 pm
Lunch Break

Characterization of Nano/Bio Materials

Chair: Andre Gesquiere, University of Central Florida

1:30 pm-1:55 pm
Application of Extremely Non-Equilibrium Oxygen Plasma: From Nanoscience to Bio-Medicine
(Invited) Miran Mozetic, Dept. of Surface Eng., Jozef Stefan Institute, Ljubljana, Slovenia

1:55 pm-2:20 pm
Activable Luminescent Quantum Dot Based Nanoprobes for Potential Biomedical Applications
(Invited) Swadeshmukul Santra[a,b,c,*], Subhash Banerjee[a], Rajendra Narayan Mitra[a], Andrew Teblum[a,c], Mona Doshi[a,b], Jessica C. Tyus[a,b], Xiaolei Zhang[c], Niclas Bengtsson[e], Andre Gesquiere[a,b,d], Patrick T. Gunning[f] and Glenn A. Walter[e], [a]NanoScience Technology Center, University of Central Florida, [b]Dept. of Chemistry, University of Central Florida, [c]University of Central Florida College of Medicine, [d]CREOL, University of Central Florida, [e]Physiology and Functional Genomics, University of Florida, [f]Dept. of Chemistry, University of Toronto at Mississauga, Canada

2:20 pm-2:45 pm
Stimuli-Response Organic Tubes Based on the Self-Assembly of Biological Surfactants
(Invited) Jiyu Fang, Advanced Materials Processing and Analysis Center, University of Central Florida

2:45 pm-3:15 pm
Coffee Break (sponsored by RBD Instruments, Inc.)

Advances in Instrumentation

Chair: Mark Davidson, University of Florida

3:15 pm-3:40 pm

Enhanced XPS Depth Profiling and Surface Sputter-Cleaning of Organic and Inorganic Materials with Argon Cluster Ion Beams

(Invited) Richard G. White[1], Tim S. Nunney[1], Paul Mack[1], Andrew E. Wright[1], and Brian R. Strohmeier[2], [1]Thermo Fisher Scientific, UK., [2]Thermo Fisher Scientific, USA.

3:40 pm-4:05 pm

The Development and Application of Polyatomic Ion Species for Sputtering in X-Ray Photoelectron Spectroscopy (XPS)

(Invited) David Surman[1], Simon Hutton[2], Adam Roberts[2], William Boxford[2], Chris Blomfield[2], Simon Page[2], [1]Kratos Analytical Inc., USA, [2]Kratos Analytical Ltd., UK

4:05 pm-5:00 pm

Poster Award Ceremony