Symposium Schedule
All the Oral Presentations are Invited Talks

Time	Sunday, March 13	
5:00-7:00	**Student Reception** (Pegasus Ballroom G-H) Life after Graduation- Jobs in High-Tech Ricky Adebanjo, Technology Applications Inc.	
Time	**Monday, March 14**	
07.30-06.00	**Registration**	
08.00-09.00	**Student Poster Session (Judging round 1)** (Pegasus Ballroom A-F)	
09.00-09.05	**Opening Remarks** Chair: Neelkanth G. Dhere, (Pegasus Ballroom G-H) Welcome and Introduction, Neelkanth G. Dhere, 2005 FSM/FLAVS/ASA Symposium Chair	
09.05-10.00	**Keynote Address** (Pegasus Ballroom G-H) Recent Advances in Optical Metrology: toward Real-Time Spectral Analysis and 0.1 % Accuracy David Aspnes, North Carolina State University	
10.00-10.30	Coffee Break (Pegasus Ballroom A-F)	
	Thin Films Chair: Susan Sinnott (Pegasus Ballroom G-H)	**Microscopy in the Physical Sciences** Chair: Kerry Siebein (Pegasus Ballroom I)
10.30-10.50	*Growth, Characterization and Spin Transport in Epitaxial Ferromagnetic Metal Heterostructures* *Chris Palmstrom, University of Minnesota*	Ferroelectric Nanolithography: a New Route to Complex Nanostructures Dawn Bonnel, The University of Pennsylvania
10.50-11.10	Rapid Thermal Processing as a Semiconductor Manufacturing Technology for Nano World of 21ST Century Rajendra Singh, Clemson University	Atomic Resolution Z-Contrast Imaging in a Scanning Transmission Electron Microscope for Materials Science Yan Xin, National High Magnetic Field Lab.
11.10-11.30	Novel Oxides for the Passivation of AlGaN/GaN High Electron Mobility Transistor Brent Gila, University of Florida	The Characterization and Performance of NiAl-Hf Overlay Bond Coatings for Superalloy Life Extension Mark Weaver, University of Alabama
11.30-11.50	Analysis of the Steel Cord-Rubber Adhesive Interphase by XPS and AES **Gerry Hammer, The Goodyear Tire & Rubber Company**	AFM and SPR Study of Adsorption of Flexible and Globular Polymers on Nano-Heterogeneous Surfaces Vinay K. Gupta, University of South Florida
12.00-01.00	Lunch Break	
	Thin Films Chair: Helge Heinrich (Pegasus Ballroom G-H)	**Electrons for Surface Analysis** Chair: Kerry Siebein (Pegasus Ballroom I)
01.00-01.20	UHV-CVD Alumina/Zirconia for Gate Dielectrics: Process and Film Characterization Bridget R. Rogers, Vanderbilt University	Electron-Solid, Electron-Gas, and Gas-Solid Interactions during Electron Microscopy and Spectroscopy: Artifacts and Nanoscale Materials Manipulation Philip D. Rack, David C. Joy, Jason D. Fowlkes, Steven Rand, University of Tennessee
01.20-01.40	Raman Studies of Molecular Adsorption in Ceramic Void Nanocomposites Greg Exarhos, Pacific Northwest National Lab.	Scanning Electron Microscopy in the Evaluation of Concrete Deterioration Andrew Boyd, University of Florida

01.40-02.00	Silicon-based Microsystem Components in Sandia's Microelectronics Development Laboratory (MDL) *OR* Silicon has Legs Linda Cecchi, Sandia National Lab	Molecular Monolayers in Motion: The Chemistry of Friction Neal Shinn, Sandia National Lab
02.00-02.20	High k materials for next generation CMOS: Remote nitrogen plasma treatment for improved interface stability on Si (100) Tonya M. Klein, University of Alabama	Electron-Induced Decomposition of Trimethylamine Adsorbed on Si (100) at 100K Jose Lozano, Bradley University
02.30-03.00	Coffee Break (Pegasus Ballroom A-F)	
	Focused Ion Beam Chair: Lucille Giannuzzi (Pegasus Ballroom G-H)	**Microscopy in the Biological Sciences** Co-Chairs: Betty Loraamm & Tony Greco (Pegasus Ballroom I)
03.00-03.20	DualBeam Applications for Nano-Machining and Nano-Prototyping Paul Anzalone, FEI Company	The Fire Ant's Opposable Thumbs Deby Cassill, University South Florida
03.20-03.40	Focused Ion Beam Microfabrication of Multifunctional Scanning Probes and Biosensors Boris Mizaikoff and Christine Kranz, Georgia Institute of Technology	Nanoscale Materials for Biomedical and Sensor Applications Arun Kumar, NNRC, University of South Florida
03.40-04.00	Dual-Beam FIB/SEM Techniques as Tools for Research in Nanotechnology Hamish Frazer, Ohio State University	A New Family of Tissue Engineering Scaffolds Derived From Copper-Capillary Alginate Gels: Synthesis and Characterization Brad Willenberg, University of Florida
04.00-04.20		Biological Applications of FIB in Marine Microfossils Benjamin Rossie, University of South Florida
04.30-07.00	**Student Poster Session (Judging round 2)** (Pegasus Ballroom A-F)	
05.00-07.00	**Reception** (Pegasus Ballroom A-F)	

Time	Tuesday, March 15
08.00-02.00	**Registration**
08.00-09.00	**Renewable Energy** (Pegasus Ballroom G-H) SOLAR PHOTOVOLTAICS: *AT THE TIPPING POINT* Larry Kazmerski, Natl Center for Photovoltaics, Natl Renewable Energy Laboratory
	Renewable Energy (PV, Hydrogen and Fuel Cells) Chair: Beatriz Roldan (Pegasus Ballroom G-H)
09.00-09.20	High Temperature MEA Development for PEM Fuel Cells James M. Fenton, Florida Solar Energy Center, University of Central Florida
09.20-09.40	Chemical Sensor Arrays for Intelligent Aerospace System Applications G. W. Hunter, NASA Glenn Research Center
09.40-10.00	Thin Film CdTe Photovoltaics: Device and Technology Issues Chris Ferekides, Department of Electrical Engineering, University of South Florida
10.00-10.30	Coffee Break (Pegasus Ballroom A-F)
10.30-10.50	Nanostructural and Nanochemical Properties of Cu (In, Ga) Se2 and Their Effects on Solar Cell Performance Angus Rockett, University of Illinois

10.50-11.10	Growth and Properties of High Coverage Oxygen Phases on Pt(111) Jason Weaver, University of Florida
11.10-11.30	Challenges of Building a Wireless Hydrogen Sensor Network Jenshan Lin, University of Florida
11.30-11.50	Nano-Micro Integrated Highly Sensitive Room Temperature Hydrogen Detector Satyajit Shukla, University of Central Florida
11.50-12.10	Semi-Solid Nanocomposite Material for Hydrogen Storage Michael Jurczyk, Arun Kumar, Ashok Kumar, Elias Stefanakos, University of South Florida
12.10-01.00	Lunch Break
	Biomaterial Interfaces Chair: Swadeshmukul Santra (Pegasus Ballroom G-H)
01.00-01.20	Analysis of Commercial Hydrogel Co-polymer Systems by Cold Probe TOF-SIMS and XPS Daniel J. Hook, Bausch & Lomb, Inc., Rochester, N.Y.
01.20-01.40	The role of intermolecular forces in plasma assisted biocompatible coatings Norma Alcantar, University of South Florida
01.40-02.00	Mineral Nanofibers via Biomimetic Processing Laurie Gower, University of Florida
02.00-02.20	Biomolecular Motor Function and Control in Hybrid Nanosystems Bryant Chase, Florida State University
02.30-03.00	Coffee Break (Pegasus Ballroom A-F)
	Nanomagnetism and Nanotechnology Chair: Arthur F. Hebard (Pegasus Ballroom G-H)
03.00-03.20	Growth and Magnetic Properties of Low Dimensional Systems Beatriz Roldán Cuenya, University Central Florida
03.20-03.40	Analysis of Protein Adsorption under Flow and Static Conditions in Microfluidic Devices James Hickman, University of Central Florida
03.40-04.00	Quantum Dynamics of High-Spin States in Single Molecule Magnets Enrique del Barco, University Central Florida
04.00-04-20	Development of III-Nitride based Dilute Magnetic Semiconductors for Spintronics Applications G.T. Thaler, R.M. Frazier, C.R. Abernathy, and S.J. Pearton, University of Florida
04.20-04.40	Aerospace Applications of Nanocomposites. Les Kramer, Lockeed Martin, Orlando, Fl
	ASTM (Pegasus Ballroom I)
04.40-05.00	Analysis Strategies for Magnetic Sector SIMS Analysis of Insulators F. A. Stevie[1], A. Pivovarov[2], C. Gu[1], and D. P. Griffis[1], [1]Analytical Instrumentation Facility, North Carolina State University [2]Shiva Technologies, Inc., Syracuse, NY, .
05.00-05.20	An Assessment of the Needs and Challenges of applying Surface Analysis Methods to Nanomaterials D. R. Baer,[+] M. H. Engelhard,[+] A. S. Lea,[+] D. J. Gaspar,[+] and ASTM Committee E42*, [+]Pacific Northwest National Laboratory, *ASTM, West Conshohocken, PA
05.20-07.00	**ASTM Meeting**
Time	**Wednesday, March 16**
08.00-02.00	**Registration**
08.00-09.00	**Applied Surface Analysis** (Pegasus Ballroom G-H) Applied Surface Science: Achievements and Challenges Robert L. Opila, The University of Delaware

	Ion Beams in Surface Analysis Chair: Gabriel Braunstein (Pegasus Ballroom G-H)
09.00-09.20	Single Ion Techniques in Materials Analysis Gyorgy Vizkelethy, Sandia National Laboratory
09.20-09.40	Synthesis of Room-Temperature Ferromagnetic Oxide Materials by Ion Implantation S. Thevuthasan, V. Shutthanandan, S.M. Heald, T. Droubay, M.H. Engelhard, C.M. Wang, D.E. McCready, T. Kaspar and S.A. Chambers, Pacific Northwest National Laboratory P. Nachimuthu and B.S. Mun, Lawrence Berkeley National Laboratory
09.40-10.00	Forward Elastic Scattering Analysis of Biological Liquid Samples J. A. Liendo[a, b, c], A. C. González[b], A. Rojas[a] , N. R. Fletcher[c] , D. D. Caussyn[c] and P. Barber[c], [a]Departamento de Física, Universidad Simón Bolívar, Caracas, Venezuela [b]Centro de Física, Instituto Venezolano de Investigaciones Científicas, Caracas, Venezuela [c]Physics Department, The Florida State University
10.00-10.30	Coffee Break (Pegasus Ballroom A-F)
	Depth Profiling Chair: Christine Klemenz (Pegasus Ballroom G-H)
10.30-10.50	Cluster Primary Ion Beam Secondary Ion Mass Spectrometry Greg Gillen, Peter Chi, Albert Fahey and Christine Mahoney Surface and Microanalysis Science Division, National Institute of Standards and Technology,
10.50-11.10	*Quantitative Surface Chemical Imaging by X-ray Photoelectron Spectroscopy* A.J. Roberts[1], S.C. Page[1], D.J. Surman[1] and N. Fairley[2] [1)]Kratos Analytical Ltd, Manchester, UK, [2)]CasaXPS, Devon, UK
11.10-11.30	XPS Analysis of C_{60} Sputter Depth Profiles for Multi-layer Polymer Samples John S. Hammond and Noriaki Sa, ULVAC-PHI, Japan
11.30-11.50	SIMS and RBS Studies of Co-Doped Al:Ti:$La_3Ga_{5.5}Ta_{0.5}O_{14}$ LPE Films Christine Klemenz, UCF
11.50-01.00	Lunch Break
	Quantitative Analysis and Data Reduction Chair: S. Shukla (Pegasus Ballroom G-H)
01.00-01.20	Needs and Methods for Metrics and Standards for Nanoparticle Materials Richard Cavanagh, National Institute of Standards and Technology
01.20-01.40	CHALLENGES OF Making Accurate and Useful XPS Measurements on Wide Variety of Materials IN a USER FACILITY M. H. Engelhard and D. R. Baer, Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory
01.40-02.00	Laser Processing and Characterization of Materials Jeffrey G. Hoekstra, J. R. Scully, Gary J. Shiflet, Syed B. Qadri, and James M. Fitz-Gerald, University of Virginia
02.00-02.20	Heavy Ion Backscattering Spectrometry Gabriel Braunstein, University of Central Florida
02.30-03.00	Coffee Break (Pegasus Ballroom A-F)
	Surface Analysis Techniques and Applications Chair: Maggie Puga Lambers (Pegasus Ballroom G-H)
03.00-03.20	Status of XPS for Characterization and Metrology of Ultra-Thin Silicon Oxynitride Films C. R. Brundle, C. R. Brundle and Associates, Soquel, CA. USA G. Conti and Y. Uritsky, Applied Materials, Santa Clara, CA. USA P. Mack, Thermo Electron Corporation, East Grinstead, UK
03.20-03.40	*IN SITU* Photoelectron Spectroscopy: A Key to the Understanding of Materials Richard T. Haasch, Frederick Seitz Materials Research Laboratory, University of Illinois at Urbana-Champaign
03.40-04.00	FIB Techniques for Microstructural Analysis and Sample Preparation Gerald Bourne, Major Analytical Instrumentation Center, University of Florida

04.00-04.30	**Student Poster Competition Award Ceremony** (Pegasus Ballroom G-H)