

Physical Electronics Conference 2007

Complete Schedule of Talks and Events

All oral presentations will be held in room 190 Engineering Sciences Building
The poster session and vendor exhibit will be held on the 2nd floor hallway of the Materials Research Laboratory

Tuesday, June 19, 2007

5:00 – 8:00 pm Registration and Welcome Reception
2nd floor hallway, Frederick Seitz Materials Research Lab

Wednesday, June 20, 2007

8:00 – 8:30 am Registration – 190 Engineering Sciences Building

8:30 – 8:50 am Opening and Welcome

Session I. Quantum Confinement in Low Dimensional Systems

Hanno Weitering, Chair

8:50 – 9:30 am Frances Ross, IBM, Invited Speaker

9:30 – 9:50 am O1. Modifying the adsorption of molecules at metal surfaces by quantum confinement of electrons, R. A. Bartynski

9:50 – 10:10 am O2. Phase separation, oscillatory layer relaxation, and self-assembly in Pb/Si(111) caused by quantum size effects, H. Hong

10:10 – 10:30 am Break

10:30 – 10:50 am O3. Initial bilayer-by-bilayer growth of Ag islands on NiAl(110): DFT analysis of underlying quantum size effects, Y. Han

10:50 – 11:10 am O4. 2D sheet-plasmon behavior and screening effects at the silicon-diode Schottky barrier interface, Y. Liu

11:10 – 11:30 am O5. Quantized electron accumulation states in indium nitride, L. Colakerol

Session 2. Nanoclusters

Ray Phaneuf, Chair

11:30 – 11:50 am O6. Symmetry breaking in the growth of 2D islands on Si(111), B. Voigtländer

11:50 – 12:10 pm O7. Probing surface structures of nanocrystals with coherent electron diffraction, W. J. Huang

12:10 – 1:30 pm Lunch Break, 280 Frederick Seitz Materials Research Laboratory

Session 3. Surface Reactions and Growth

Jesper Andersen, Chair

1:30 – 1:50 pm O8. Site selective chemisorption of Cl on Si(114), R. E. Butera

1:50 – 2:10 pm O9. Surface chemical pattern directed iodine crystallization, Y. Cai

2:10 – 2:30 pm O10. Differences in reactivity induced by the presence of steps and their geometry, A. Resta

2:30 – 2:50 pm O11. Questioning nobility: CO interaction with the Au (001) surface, M. S. Pierce

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- 2:50 – 3:10 pm O12. Surface nanostructure and nanochemistry of CuInSe₂ by scanning tunneling microscopy, M. Mayer
- 3:10 – 3:30 pm O13. Surface chemistry control of low temperature CVD superconformal growth, J. R. Abelson
- 3:30 – 5:30 pm Vendor Exhibit and Poster Session
2nd Floor Hallway, Frederick Seitz Materials Research Lab**
- 6:00 – 8:00 pm Picnic – Portico – Frederick Seitz Materials Research Lab**

Thursday, June 21, 2007

Session 4. Nottingham Presentations, Lloyd Whitman, Chair

- 8:30 – 8:50 am N1. Atomic scattering as a probe of polymer surface and thin film dynamics, M. A. Freedman
- 8:50 – 9:10 am N2. Kinetic growth mechanisms in anisotropic organic thin films, A. Al-Mahboob
- 9:10 – 9:30 am N3. Mound formation and step edge barrier in organic thin film growth, G. Hlawacek
- 9:30 – 9:50 am N4. Metal/molecule interface fluctuations, C. G. Tao
- 9:50 – 10:10 am N5. The electronic structure and polymerization of a self-assembled monolayer, D.-Q. Feng
- 10:10 – 10:30 am Break

Session 5. Nottingham Presentations, Angus Rockett, Chair

- 10:30 – 10:50 am N6. Electronic structure at NiO/Fe₃O₄ and CoO/Fe₃O₄ interfaces, H.-Q. Wang
- 10:50 – 11:10 am N7. Coherent electronic fringe structure in incommensurate silver-silicon quantum wells, N. J. Speer
- 11:10 – 11:30 am N8. Engineering the surface morphology at the atomic level with applications in electronic materials, V. Ignatescu
- 11:30 – 11:50 am N9. Ultrathin cobalt films on ruthenium (0001): growth, structure, and magnetism, F. El Gabaly
- 11:50 – 12:10 pm N10. Trap sites in nucleation of metal films on quasicrystal surfaces, B. Unal
- 12:10 – 1:30 pm Lunch Break, 280 Frederick Seitz Materials Research Laboratory

Session 6. Nottingham Presentations, Robert Bartynski, Chair

- 1:30 - 2:10 pm Charles Campbell, University of Washington, Invited Speaker
- 2:10 – 2:30 pm N11. Dewetting-mediated self-assembly of nanoparticles, J. S. Palmer
- 2:30 – 2:50 pm N12. Sorting carbon nanotubes by electronic structure in density gradients via control of surfactant adsorption at nanotube-water interfaces, M. S. Arnold

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2:50 – 3:10 pm N13. SiN_x-induced reconstructions in TiN(001) and TiN(111): modeling the interfacial structure of superhard nanocomposites, J. Bareño

3:10 – 3:30 pm Break

Session 7. Nottingham Presentations, Ivan Petrov, Chair

3:30 – 3:50 pm N14. Investigating the desorption of saturated hydrocarbons from Si(100) with UHV-STM and density functional theory, N. L. Yoder

3:50 – 4:10 pm N15. Non-local hot-electron surface chemistry in scanning tunneling microscope, P. Maksymovych

4:10 – 4:30 pm N16. Effects of dislocations on photoluminescence in GaN and GaAs, J. H. You

4:30 – 4:50 pm N17. Activation of Au for heteroatom addition reactions, X. Deng

4:50 – 5:10 pm N18. Probing light-matter interactions at the atomic scale, S. Wu

5:10 – 5:30 pm N19. Self-assembly of 2D nanocluster array via dislocation pair annihilation and glide, B. Diaconescu

7:00 Banquet, Levis Faculty Center

Friday, June 22, 2007

Session 8. Molecular Films, Interfaces, and Electronics Steve Bernasek, Chair

8:30 – 8:50 am O14. Negative differential resistance in oligo(-phenylene ethynylene)s: experimental tests of theoretical models, S. W. Robey

8:50 – 9:10 am O15. Interconversion of methylisocyanide and methylaminocarbene on Pt(111) as studied by surface infrared spectroscopy and low-temperature scanning tunneling microscopy, M. Trenary

9:10 – 9:30 am O16. Molecule-nanoparticle separation dependence of plasmon enhanced fluorescence, D. Britti

9:30 – 9:50 am O17. Observation and controlling of clustering and nanofilaments generation on functionalized alkanethiolate self-assembled monolayers, M. Maitani

9:50 – 10:10 am O18. STM/STS studies of an archetype organic-organic interface: C₆₀:pentacene, D. B. Dougherty

10:10 – 10:30 am Break

Session 9. Novel Surface Spectroscopy and Microscopy, Richard Kurtz, Chair

10:30 – 10:50 am O19. Femtomolar isothermal desorption, M. C. Wheeler

10:50 – 11:10 am O20. Functional probes for scanning probe microscopy, K. Akiyama

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- 11:10 – 11:30 am O21. Low energy alkali ion scattering and x-ray photoelectron diffraction studies of Zn/Pt(111) bimetallic surfaces, B. E. Koel
- 11:30 – 11:50 am O22. TEM study of a novel anode materials for solid oxide fuel cells (SOFCs), Y. Wang
- 11:50 – 12:10 pm O23. Are the surfaces of CrO₂ half-metallic? A photoelectron spectroscopy study of Epitaxial CrO₂(100) and CrO₂(110) films, C. A. Ventrice, Jr.
- 12:10 – 12:30 pm Closing Comments
- 12:30 pm Lunch and departure, 280 Frederick Seitz Materials Research Laboratory