

# Hui Li

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US Permanent Resident

- Research Interests* Surface chemistry and nanoscale science, Supramolecular nanostructures, Crystal growth and engineering, Surface spectroscopy.
- Education*
- ◇ **UNIVERSITY OF MARYLAND** COLLEGE PARK, MD  
Ph.D. in Physical Chemistry December 2006  
Dissertation: *N-HETEROAROMATIC ACID ADLAYER STRUCTURES UNDER HYDROGEN BONDING INFLUENCE: A COMPREHENSIVE UHV-STM/XPS/RAIRS STUDY*  
Advisor: Dr. Janice Reutt-Robey
  - ◇ **BEIJING UNIVERSITY OF CHEMICAL TECHNOLOGY** BEIJING, CHINA  
B.S. in Fine Chemistry July 1996
- Professional Experience*
- ◇ **RESEARCH ASSISTANT (PH.D. LEVEL), UNIVERSITY OF MARYLAND** 2000 - 2006  
Synthesized and investigated nanoscale building blocks for the formulation of bottom-up approaches to multi-functional nanomaterials. Completed a comprehensive UHV-STM/XPS/RAIRS analysis of N-Heteroaromatic acid surface structures.
    - Build the reflection-absorption infrared spectroscopy (RAIRS) lab. Couple the IR Spectrometer to the ultrahigh vacuum(UHV) system. Design and setup the optical layout.
    - Synthesize surface nanostructures by molecular beam epitaxy film growth.
    - RAIRS analysis of the composition and orientation of the surface adlayers.
    - XPS analysis of the chemical properties of the surface structures.
    - ROMAN and PM-IRS aided determination of surface properties.
  - ◇ **TEACHING ASSISTANT, UNIVERSITY OF MARYLAND** 1999 - 2000  
Worked as a teaching assistant for general chemistry. Duty includes micro-teaching, lab instructing and grading.
- Project Experience*
- ◇ **RESEARCH PROJECTS:**
    - Completed comprehensive UHV-RAIRS/XPS study of isonicotinic acid adlayer structures on Ag(111). Innovated a quantitative analysis technique to determine the surface adlayer's 3-D geometry.
    - Completed UHV-RAIRS/XPS study of AHA adlayer structures on Ag(111). Contrasting surface structures of AA on Ag(111) was done for comparison.
  - ◇ **DESIGN PROJECTS:**
    - Designed sputtering path determination method.
    - Designed *in-situ* organic molecular beam deposition source.
- Skills*
- ◇ Extensive experience with Reflection-absorption Infrared spectroscopy (RAIRS), X-ray photoemission spectroscopy (XPS).
  - ◇ Familiar with the Ultra-high Vacuum (UHV) system and surface analysis instruments. Experienced with organic molecular beam epitaxy method and vapor deposition method of growing metal films.

Hui Li

- Memberships* ◇ Student Member ACS since 2002  
◇ Student Member APS since 2005
- Publications and presentations* ◇ **PEER-REVIEWED JOURNALS**  
[1] H Li, B Xu, D Evans, JE Reutt-Robey,. "Isonicotinic Acid Molecular Films on Ag(111): I. XPS and STM Studies of Orientational Domains," *Journal of physical chemistry C*, Vol. 111, (5), 2007, pp. 2102-2106.
- ◇ **PRESENTATIONS**  
[1] Hui Li, Bo Xu, Diane Evans, Janice E Reutt-Robey,. "Contrasting the Assembly and Molecular Architecture of N-Heteroaromatic Molecular Films on Ag(111): ACA vs. INA" *American Vacuum Society 52th International Symposium* , 2005, Boston  
[2] Hui Li, Bo Xu, Diane Evans, Janice E Reutt-Robey,. "From molecular tapes to monolayer films: INA adsorption on Ag(111)" *American Chemical Society Fall 2005 National Meeting*, 2005, DC  
[3] Hui Li, Diane Evans, Bo Xu, Janice E Reutt-Robey,. "H-bond influenced adlayer structures: an RAIRS study of isonicotinic acid adsorption on Ag(111) " *78th ACS Colloid and Surface Science Symposium*, 2004, New Haven
- Misc.* ◇ After graduation on December 2006, I moved to Poquoson, VA to reunite with my family. It took me about a year to pay back the time I borrowed from my daughter during my Ph.D studies. She will be in primary school soon, and I am eager to go back to the lab.
- Reference* ◇ Prof. Janice E Reutt-Robey, Advisor, Professor, Department of Chemistry and Biochemistry, University of Maryland at College Park. Phone: (301-405-1807), Email: rrobey@umd.edu  
◇ Prof. Millard Alexander, Distinguished University Professor, Department of Chemistry and Biochemistry, University of Maryland at College Park. Phone: (301-405-1823), Email: mha@umd.edu  
◇ Prof. Walker, Professor, Department of Chemistry and Biochemistry, University of Maryland at College Park. Phone: (301-405-8667), Email: rawalker@umd.edu