

**Elizabeth A. Whitsitt**  
806 Lamonte Ln.  
Houston, TX 77018  
home# 713 691 3505 cell# 1 713 992 9909  
[whitsitt5@earthlink.net](mailto:whitsitt5@earthlink.net)

**Objective** A position in materials research and development with an interest in thin films, colloids, surfactants and interfacial chemistry.

**Education** **Rice University**, Houston, TX, Ph.D., Inorganic Chemistry, Fall 2004  
Advisor: Professor Andrew R. Barron GPA 3.9  
Thesis "Liquid Phase Deposition of Silica: Thin Films, Colloids and Fullerenes"

**University of Texas**, Dallas, TX, B.S., Chemistry, Cum Laude, May 1995  
Advisor: Dr. Rysard Zarzycki GPA 3.8  
Thesis "Synthesis of Polypropyl Imidazolium Bromide and its Interaction with Acid Chromate"

**Experience** **Oxane Materials, Inc.**, Houston, TX.  
*Senior Scientist*, 2004-2005

Performed ceramics and polymer-composite research and development for a nanotechnology start-up co. Initiated research lab and supplier accounts. Composed, implemented and maintained chemical safety hygiene, environmental compliance and fire safety plans. Wrote and applied for government grants.

**Rice University**, Houston, TX.

*Graduate Research Assistant*, 2000-2004

Achieved growth of silica thin films on both traditional planar substrates and carbon nanoparticles (fullerenes and SWNTs) via the liquid phase deposition method. Discovered the effects of surfactants on this method of silica growth. Developed methods of manipulation of these nanoparticles via functional capping, self assembled monolayers and optical lithography. Collaborated interdepartmentally on single walled carbon nanotube (SWNT) amplification and the synthesis of fullereneol microshells.

*Shared Equipment Authority Superuser*, 2002-2004

Trained users on SEM and XRD and maintained relevant equipment.

*Teaching Assistant*, 2000-2002

Taught General Chemistry Laboratory for four semesters. Instructed students in good laboratory practice and supervised and assisted during their experiments.

**Honeywell Microswitch**, Richardson, TX.

*Process Owner*, 1996-1998

Maintained and improved processes in wirebond, plasma clean and etch, and OGP Smartscope measurement systems on back end sensor fabrication manufacturing floor. Performed DOE and SPC for manufacturing process improvement and new product implementation.

**Texas Instruments**, Richardson, TX.

*Process Technician*, 1995-1996

Performed wire bond analyses and bonder certification for the wire bonders in TI's process automation and control department.

**Honeywell Microswitch**, Richardson, TX.

*Technician*, 1995

Fabricated GaAs lasers using standard lithography techniques.

## Awards and Affiliations

Harry B. Wiesner Teaching Award in Chemistry, 2002  
Honeywell GG2000 Award for Process Improvement, 1997

Chair, Houston High School for the Performing Arts PTO, 2004-present  
Social Chair, CBEN Student Leadership Council 2003-2004  
Rice Chemistry Department Safety Committee, 2000-2004  
Member, Sigma Xi, 1995-present  
Member, American Chemical Society, 1993-present  
Treasurer, Valhalla, Rice University Graduate Student Pub, 2000-2003  
President, Rice University Chemistry Graduate Student Association, 2001-2003  
OSHA certified Hazardous Materials Technician, 1997

## Publications and Presentations

"LPD Silica Coating of Individual Single Walled Carbon Nanotubes," Elizabeth A. Whitsitt, Valerie C. Moore, Richard E. Smalley and Andrew R. Barron, *J. Mater. Chem.*, in press

"Effect of Surfactant on Particle Morphology for Liquid Phase Deposition of Submicron Silica," E. A. Whitsitt and A. R. Barron, *J. Coll. Interf. Sci.*, **2005**, 287, 318

"Silica Coated Single Walled Carbon Nanotubes," E. A. Whitsitt and A. R. Barron, *Nano Letters*, **2003**, 6, 775

"Silica coated fullerenols; seeded growth of silica spheres under acidic conditions," E. A. Whitsitt and A. R. Barron, *Chem. Commun.*, **2003**, 9, 1042

August 22-26, 2004: The 227th ACS National Meeting, Philadelphia, Pennsylvania. **Selective Etching of Coated Single Walled Carbon Nanotubes**

March 23-27, 2003: The 225th ACS National Meeting, New Orleans, Louisiana. **Silica Coating of Single-Walled Carbon Nanotubes**

November 3-6, 2002: The 58th ACS Southwest Regional Meeting, Austin, Texas. **Silica Coated Fullerenols**

October 17-20, 2001: The 57th Southwest Regional Meeting of the ACS in San Antonio, Texas. **Liquid Phase Deposition of Silicon Dioxide**


## Patents

Method for Creating a Functional Interface between a Nanoparticle, Nanotube or Nanowire, and a Biological Molecule or System, patent pending, filed Nov. 2003

Method for Low Temperature Growth of Inorganic Materials from Solution using Catalyzed Growth and Regrowth, patent pending, filed Nov. 2003

Coated Fullerenes, Composites and Dielectrics made Therefrom, patent pending, filed Dec. 2002

## Skills

Scanning Electron Microscopy  
Energy Dispersive X-ray Spectroscopy  
Transmission Electron Microscopy  
Atomic Force Microscopy  
Optical Microscopy/Lithography  
X-Ray Diffraction Spectroscopy  
Infrared and Raman Spectroscopy  
Ultraviolet/Visible Spectroscopy  
Thermogravimetric Analysis  
Microsoft Office (Word, Excel, Power Point), JMP, Photoshop 

**References and Transcripts available upon request**