

ROBIN ANDERSON

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EDUCATION

2006 – present University of Toronto Toronto, ON Canada

Postdoctoral Research Fellow

- Warren C. W. Chan, advisor
- Surface modification of quantum dots for biomedical diagnostic applications
 - developing new methods for water-solubilization and biomolecule attachment, specifically through silica coating and polymer wrapping
 - experience in synthesizing gold colloids and magnetic nanoparticles
- proficiency in TEM, fluorescence techniques

2001 - 2006 Rice University Houston, TX

Ph. D. Chemistry

- Andrew R. Barron, advisor
- Thesis title: Transition Metal Catalyzed Reactions of Fullerenes and Carbon Nanotubes
- Buckminsterfullerene functionalization
 - epoxidation and cage-opening using a molybdenum oxide catalyst
 - hydroxylation and investigating the interaction between hydroxylated fullerenes and metal salts as a route to fullerene self-remediation
 - attaching oligonucleotides to fullerenes
- Catalytic growth of single-walled carbon nanotubes
 - synthesis of iron-molybdenum and iron oxide nanoparticles as catalyst precursors
- Effect of nanomaterials on mineral crystallization
 - investigated how the use of functionalized fullerenes and single-walled carbon nanotubes as seeds in the crystallization of calcium carbonate and barium carbonate affects the resulting crystal morphology
- Proficiency in schlenk techniques, AFM, ESEM, Powder XRD, UV-vis, IR, HPLC, Raman and TGA-MS

1997 - 2001 Fairfield University Fairfield, CT

B.S. Chemistry

- Undergraduate research in biochemistry, advisor John Elder, S.J.
 - studied the tagging of natural amino acids with unnatural amino acids using thin layer chromatography
- 2000 ACS Outstanding Senior Chemistry Major
- Pi Mu Epsilon National Mathematics Society, Connecticut Chapter, 2001

TEACHING EXPERIENCE

- 2001-2003 Rice University Houston, TX
- Teaching Assistant, General Chemistry Lab
 - Supervisor Mary E. R. McHale, Ph. D.

INDUSTRIAL EXPERIENCE

- 1999-2001 Genzyme Corp. Framingham, MA
- Summer Internships*
- Chris Willis, supervisor
 - Assisted in drug release studies, experience with HPLC, GC, TGA, UV-vis

PRESENTATIONS, PUBLICATIONS, AND AFFILIATIONS

R. E. Anderson and A. R. Barron, **Transition metal epoxidation and cage-opening of fullerenes**, Abstracts of Papers, 231th ACS National Meeting, Atlanta, GA March 26-30, 2006

R. E. Anderson and A. R. Barron, **Self-remediation of hydroxyfullerene with metal salts**, Abstracts 60th Southwest Regional Meeting of the American Chemical Society, Fort Worth, TX September 29-October 4, 2004

R. E. Anderson and A. R. Barron, **Transition metal epoxidation of fullerenes**, Abstracts of Papers, 228th ACS National Meeting, Philadelphia, PA August 22-26, 2004

R. E. Anderson and A. R. Barron, **Effect of additives in calcium carbonate crystallization**, Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA March 23-27, 2003

R. E. Anderson and A. R. Barron, **Solubilization of single-wall carbon nanotubes in organic solvents without sidewall functionalization**. *J. Nanosci. Nanotechnol.*, 2006, in press.

Robin E. Anderson, Ramon Colorado, Jr., Christopher Crouse, Douglas Ogrin, Benji Maruyama, Mark J. Pender, Christopher L. Edwards, Elizabeth Whitsitt, Valerie C. Moore, Dorothy Koveal, Corina Lupu, Michael P. Stewart, Richard E. Smalley, James M. Tour, Andrew R. Barron, **A study of the formation, purification and application as a SWNT growth catalyst of the nanocluster $[H_xPMo_{12}O_{40}C_4H_4Mo_{72}Fe_{30}(O_2CMe)_{15}O_{254}(H_2O)_{98}]$** , *Dalton Trans.*, 2006, 3097 – 3107.

R. E. Anderson and A. R. Barron, **Reaction of Hydroxyfullerene with Metal Salts: A Route to Remediation and Immobilization**. *J. Am. Chem. Soc.*, 2005, 127, 10458.

(Presentations, Publications, and affiliations cont.)

R. E. Smalley, R. H. Hauge, A. R. Barron, J. M. Tour, H. K. Schmidt, W. E. Billups, C. A. Dyke, V. C. Moore, E. Whitsitt, R. Anderson, R. Colorado, Jr., M. Stewart, and D. C. Ogrin, **Amplification of carbon nanotubes via seeded-growth methods**, U.S. Patent WO2005085132.

A. R. Barron, D. J. Flood, E. A. Whitsitt, R. E. Anderson, and G. B. I. Scott, **Method for creating a functional interface between a nanoparticle, nanotube, or nanowire, and a biological molecule or system**, Patent EP1563545, WO2005000735.

R. E. Anderson and A. R. Barron, **Effect of Carbon Nanomaterials on Calcium Carbonate Crystallization**, submitted to *Crystal Growth & Design*.

- Member, American Chemical Society, 2002-present
- Vice-President, Rice University Chemistry Graduate Student Association, 2003-2005
- Member, Center for Biological and Environmental Nanotechnology, Rice University
- Member, Rice Alliance for Technology and Entrepreneurship, Rice University

RESEARCH INTERESTS

In the future, I would like to combine elements from my postdoctoral and graduate work to study the biomedical applications of nanomaterials, such as carbon nanotubes and inorganic nanoparticles.

REFERENCES

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