

Ilia Auerbach-Ziogas

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200 S. W. Mudd Building, 500 W. 120th Street, New York, NY 10027

MS - 2008, Materials Science & Engineering, Columbia University

BASc - 2007, Nanoengineering (Engineering Science), University of Toronto

Research Experience:

Graduate Student Summer Researcher 06/08 to 08/08

(Supervisor: Prof. Lance Kam, Biomedical Engineering, Columbia University)

- Studied the opportunity to manipulate cells through a magnetically-actuated 2D array of PDMS posts
- Synthesized Co-nanowires through electrochemical deposition in anodized alumina membranes
- Characterized Co-nanowires and PDMS/nanowire-assembly under optical and electron microscopy

Graduate Student Course Researcher 10/07 to 05/08

(Supervisor: Prof. Colin Nuckolls, Chemistry, Columbia University)

- Studied the surface binding behavior of a novel, helical polymer to a graphite substrate under ambient STM
- Characterized polymer synthesis using XRD, TGA, and light-scattering techniques

Research Engineer, Experimental Design in Nanochemistry 05/07 to 07/07

(Supervisor: Prof. Geoffrey Ozin, Chemistry, University of Toronto)

- Engineered and performed experiments regarding surface functionalization and mesoscale self-assembly to elucidate the unique properties of nanoscale reactions and systems

Research Engineer and Senior Thesis Student 05/06 to 05/07

(Supervisor: Prof. Jun Nogami, Materials Science and Engineering, University of Toronto)

Thesis: *“Using soft lithography for the selective occlusion of alumina pores toward a mask for thermal deposition”*

- Developed a method for nanoscale-patterned deposition through the selective occlusion of anodized alumina
- Participated in a project studying shadow-deposition through a FIB'd SiN substrate: contributed to the milling of masks, characterization of samples (SEM, UHV STM), and design of a laser alignment system
- Implemented a Labview-based remote control and sensory package for STM and deposition systems
- Modeled mechanical systems in CAD software for design and construction purposes

Teaching, Lecturing, and Conferences:

Teaching Assistant, Columbia University, Materials Science & Engineering

“Nanotechnology” (senior/graduate level) 09/08 to 12/08

“Processing of Ceramics and Polymers” (junior-level) 01/08 to 05/08

“Fundamentals of Materials Science” (junior-level) 08/07 to 12/07 & 09/08 to 12/08

Science Fair Mentor, McNair MRSEC Outreach Program 01/08 to 05/08

- Guided high-school students through the planning, executing, and understanding of an experiment

Invited Lecturer, “Nanoscale Robotics: New criteria for a smaller world”

da Vinci Engineering Enrichment Program 07/07

RobotX, Robot Design Program 05/07

- Taught high school seniors about the fundamentals of practical design on the nanoscale

Founder/Director: Undergraduate Nanotechnology Conference 2007 07/06 to 05/07

- Founded an annual conference that integrated undergraduate students into the research environment
- Inaugural conference drew over 200 students with speakers such as Dr. Don Eigler, Prof. Younan Xia, Prof. Geoff Ozin, Dr. Daniel Wayner, and Prof. John Polyani
- Directed sponsorship and publicity, drawing a budget in excess of \$20,000 and media attention

Industry Experience:

Security Analyst for DB2 UDB: IBM Canada 05/04 to 08/05

- Assisted in Common Criteria certification of DB2 UDB v82 in coding and interfacing with reviewers (SQL)
- Analyzed third-party security penetration reports and reported conclusions regarding required-action
- Developed a test suite for an emerging line item within DB2 for an improved auditing protocol (C++, PERL)