

Carl Magnuson

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Education:

University of Texas at Austin Austin, TX
PhD Materials Science and Engineering, expected Dec 2012

University of Southern California Los Angeles, CA
B.S. Electrical Engineering, May 2005

Peking University Beijing, China
International Student Department, August 2003 – May 2004
National Security Education Program – A US government-funded scholarship designed to encourage US citizens to become proficient in a foreign language

Experience:

Graduate Research Assistant, 2008-Present Austin, TX
Nanoscience and Technology Lab under Dr. Rodney Ruoff
Sandia National Labs Fellowship

Graduate Research Assistant:

- Design and build graphene CVD systems
- Investigate the growth mechanisms and mechanics of graphene on copper
- Setup and maintain chemical wet lab at Pickle Research Center
- Characterize samples using SEM, TEM, Raman, Ellipsometry, etc.

Northrop Grumman Corporation, 2005-2008 Azusa, CA
Electronic Systems, Surveillance and Remote Sensing

Systems Engineer:

- Analyze sensor, line-of-sight, and health and status data from satellite payloads under integration and test for requirement verification
- Anomaly resolution
- Code system simulations with MATLAB and C++
- Characterize system performance using statistical assessments of real and simulated data
- Develop, analyze, and modify clutter rejection algorithms
- Design Electro-Optical Infrared (EOIR) systems

USC Merit Research, 2000-2005 Los Angeles, CA
Micro Photonics Device Group under Dr. John O'Brien

Research Assistant:

- Design and characterize photonic crystal waveguides using GaAs, single defect lasers using InP, and Vertical Cavity Surface Emitting Lasers using GaAs
- Program a new photonic crystal structure simulation with a Multi-resolution Time Domain algorithm using Wavelet transforms in C++
- Design and maintain Linux cluster
- Construct characteristic setups for VCSELs, photonic crystal waveguides, and defect lasers

Publications:

Site-Specific Deposition of Au Nanoparticles in CNT Films by Chemical Bonding, ACS Nano, 2010, 4 (1), 540-546

Graphene: Substrate preparation and introduction, Journal of Structural Biology, Available online 10 October 2010, ISSN 1047-8477, DOI: 10.1016/j.jsb.2010.10.002.

Graphene films with large domain size by a two-step chemical vapor deposition process, Nano Letters, 2010

Large Area Graphene Single Crystals, Journal of the American Chemical Society, submitted