

Ashley Diane Mason

204 Rogers Hall
Corvallis, OR 97331

Phone: (541) 619-0689
Email: ashleydianemason@gmail.com

OBJECTIVE

To find an internship that will help further my education and development in the fields of Materials Science, materials development and characterization, and device design and fabrication.

EDUCATION

Oregon State University, Corvallis, OR

Bachelor of Science - Electrical Engineering, Spring 2009
Emphasis - Materials and Devices

Master of Science - Electrical and Computer Engineering, Summer 2011

Thesis - Effects of Ultraviolet Illumination and a Parylene-A Activation Layer on the Gas Phase Sensing Characteristics of ZnO Nanobridges

Doctorate of Philosophy - Materials Science, Expected Spring 2014

EMPLOYMENT

July 2011 - Present *Multi-functional Thin Film Materials Lab – Oregon State University*

Graduate Research Assistant: Studying thin film deposition techniques for lead zirconate titanate (PZT) for use in piezoelectric-based applications. Currently the primary user of the pulsed laser deposition (PLD) system and a point of contact for atomic force microscopy (AFM) within the Materials Science department. Using x-ray diffraction (XRD) and AFM to characterize film structure and piezoresponse force microscopy (PFM) to probe local piezoelectric properties of the films.

Summer 2009 & Summer 2010 *U.S. Army Research Laboratory*

Graduate Technical Intern: Continued research on piezoelectric energy harvesting and actuation methods for ZnO nanowires. For second internship developed new processes for base device structure for ZnO nanowire sensor and worked with OSU to characterize the first functionalization layer.

December 2007 - June 2011 *Nanotechnology Lab – Oregon State University*

Undergraduate Research Assistant/Graduate Research Assistant: Project managed the start up of a new research lab at OSU to begin researching nanowire growth and other future nanoscale projects. Continued research in this group as a MS student.

Summer 2007 & Summer 2008 *Hewlett-Packard Corvallis*

Hardware Design Intern: Responsible for the electrical, mechanical, controls, and user interface design for a cable reliability tester. The first summer internship included circuit analysis and layout, microcontroller selection, mechanical design using OneSpace Designer, fabrication, and assembly. The second summer internship included completion of the user interface using C#, documentation, training, and release to production.

December 2006 - March 2008 *TekBots – Oregon State University*

Teaching Assistant for ECE 112: Introduction to Electrical Engineering

Teaching Assistant for ECE 272: Digital Logic Design

Responsibilities included grading, helping students with lab and homework assignments, and assembling kits of parts for all applicable ECE and ENGR labs.

PUBLICATIONS

C.-C. Huang, A.D. Mason, J.F. Conley, Jr., C. Heist, M.T. Koesdjojo, V.T. Remcho, T. Afentakis, "Impact of Parylene-A Encapsulation on ZnO Nanobridge Sensors and Sensitivity Enhancement via Continuous Ultraviolet Illumination," *Journal of Electronic Materials*, available online, doi: 10.1007/s11664-011-1867-7.

A.D. Mason, C.-C. Huang, S. Kondo, M. T. Koesdjojo, Y.H. Tennico, V.T. Remcho, J. F. Conley, Jr., "Synthesis, functionalization, and environmental stabilization of ZnO nanobridge transducers for gas and liquid-phase sensing," *Sensors and Actuators B: Chemical*, vol. 155, pp. 245-252, 2011.

A.D. Mason, B.H. Piekarski, "Zinc Oxide (ZnO) Nanobridge-based Sensor Platform and Functionalization for Explosive Sensing," *Army Research Laboratory Technical Report*, Adelphi, MD, ARL-TR-5462, February 2011.

S. Kilpatrick, A. Mason, "Nanoscale Piezoelectric Energy Harvesting," *Army Research Laboratory Technical Report*, Adelphi, MD, ARL-TR-5229, June 2010.

A. D. Mason, C.-C. Huang, M. T. Koesdjojo, N. D. Stephon, V. T. Remcho, J. F. Conley, Jr., "Functionalization and Environmental Stabilization of ZnO Nanobridge Sensors Fabricated using Carbonized Photoresist," in *Semiconductor Nanowires – Growth, Size-Dependent Properties, and Applications* (Mater. Res. Soc. Symp. Proc. Volume 1350E, Warrendale, PA, 2009), 1350-EE11-06.

A. Mason, T. Waggoner, S. Smith, J. F. Conley, Jr., B. Gibbons, "Hydrothermal Synthesis of Zinc Oxide Nanowires on Kevlar using ALD and Sputtered ZnO Seed Layers," in *Semiconductor Nanowires – Growth, Size-Dependent Properties, and Applications*, edited by Ali Javey (Mater. Res. Soc. Symp. Proc. Volume 1178E, Warrendale, PA, 2009), 1178-AA06-38.

AWARDS

Oregon State University Awards

- ✓ Intel Graduate Scholarship 2009 - 2011
- ✓ First Place Industry Award for Senior Design Project 2009
- ✓ Texas Instruments Analog Design Award for OSU 2009
- ✓ Tektronix Scholar 2008 (Spring and Fall terms)
- ✓ Intel Scholar 2008, 2009

West Albany High School Awards

- ✓ Society of Women Engineers Certificate of Merit 2004
- ✓ United States Army National Guard Engineering and Academic Award 2004
- ✓ Industrial Technology Award 2002