

# Michael Logue

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## OBJECTIVE

To obtain a challenging full time position in the electronics industry preferably pursuing computational/modeling/simulation methods to investigate and solve technical challenges

## EDUCATION

### University of Michigan

*Ph.D. Electrical Engineering*

*M.S.E. Electrical Engineering, GPA: 5.90/9.00*

*Relevant Coursework:* Properties of Transistors, Microelectronics Processing Tech., Solid State Devices Lab. Optoelectronic Devices, Physical Processes in Plasmas, Plasma Generation and Diagnostics Lab

Ann Arbor, MI

Sept. 2005-Present

April 2007

### Villanova University

*B.S.E.E. Electrical Engineering, GPA: 3.56/4*

*Relevant Coursework:* Communication Electronics, Microwave Networks, RF Circuit Design, Intro to Optoelectronics

Villanova, PA

May 2005

## EXPERIENCE

### University of Michigan

*Graduate Student Research Assistant-Dr. Mark Kushner*

Ann Arbor, MI

May 2010-Present

- Investigating the effect of pulsed power, varying parameters such as pressure, duty cycle, and pulse period, on electron energy distribution functions in inductively coupled plasmas from simulations
  - o Poster Presentation at DOE Plasma Science Center 1<sup>st</sup> Annual Meeting – May 2010
  - o Poster Presentation at Gordon Research Conference on Plasma Processing – July 2010
  - o Poster Presentation at Michigan Institute for Plasma Science and Engineering Graduate Symposium – Sept. 2010
- Investigating the effect of using a boundary electrode, with dc or pulsed dc bias, on ion energy distributions in an inductively coupled plasma from simulations
  - o Poster Presentation at DOE Plasma Science Center 2<sup>nd</sup> Annual Meeting – May 2011
  - o Oral Presentation at International Symposium on Plasma Chemistry – July 2011
  - o Poster Presentation at Michigan Institute for Plasma Science and Engineering Graduate Symposium – Sept. 2011
  - o Oral Presentation at 64<sup>th</sup> Gaseous Electronics Conference – Nov. 2011

*Program Coordinator—Detroit Area Pre-College Engineering Program*

March-April 2010

*Mentor—Detroit Area Pre-College Engineering Program*

March-April 2007 & March-April 2008

- Facilitated the learning of engineering concepts using Lego Robotics for middle school students
- Guided students in building and programming their Lego Robotics to meet specific tasks

*Graduate Student Research Assistant-Dr. Jerzy Kanicki*

Sept. 2008-June 2009

- Worked on developing recipe for high quality PECVD silicon dioxide and nitride for use as transistor gate insulator. Performed stress tests, I-V, C-V, etch rate, and refractive index measurements
- Fabricated and performed electrical performance testing of IGZO transistors
- Investigated effect of hydrogen plasma on IGZO conductivity and optical absorption characteristics

*Graduate Student Instructor-EECS 314(Electrical Circuits, Systems, and Applications)* Sept. 2008-April 2009

- Led multiple lab sections and graded associated lab work
- Assisted students with homework questions and led a discussion section
- Helped students understand the design and implementation of circuits and troubleshoot problems

*Instructor—Michigan Science, Technology, Engineering, & Mathematics Academy* July-Aug. 2008 & 2009

- Taught introductory MATLAB programming to incoming freshman students

*Graduate Student Instructor-EECS 311(Electronic Circuits)*

Jan.-April 2008

- Led two labs and graded associated lab work
- Helped students understand the design and implementation of circuits and troubleshoot problems

*Graduate Student Research Assistant-Dr. Stephen Forrest*

January 2006-December 2007

- Worked on reducing resistive losses for large area scaling of organic solar cells
- Studied effect of air exposure on organic solar cell lifetime and solar cell parameters
- Fabricated InGaAs-Si mesa diodes for avalanche photodiode application using a wafer bonding process
- Worked in a class 100 cleanroom environment at the Michigan Nanofabrication Facility
- Photolithographic processing-Mask Maker, Aligners, Spinners, etc.
- Dry and wet etched SiO<sub>2</sub>, SiN<sub>x</sub>, InGaAs, and wet etched ITO
- Used PECVD tool to deposit SiO<sub>2</sub> and SiN<sub>x</sub> on Si and III-V materials
- Used PVD tools, evaporators and sputterers, to deposit materials such as gold and silver onto samples
- Worked on wafer bonding InGaAs to Si and bonding InP to Si

**Villanova University**

Villanova, PA

*Senior Design Project*

April 2004- March 2005

- Designed and modeled the performance of a solar power generation system to meet the needs of the Tarumitra bioreserve in Patna, India

*Class Project*

Jan. 2005-April 2005

- Designed and built an RF antenna using microstrip lines and tested performance in anechoic chamber

*Research Assistant (sponsored by NSF) to Dr. Caverly of the ECE Dept.*

Jan.-Sept. 2004

- Modeled different oscillator topologies for use on integrated circuit (IC) chips
- Studied the use of non-ideal components on the quality of the oscillator

## SKILLS

Computer Languages: C, C++, Fortran, Java

Computer Applications: Microsoft Office, MATLAB, AutoCAD, COMSOL, Serenade, L-Edit, HOMER,

Cadence, Origin, HPEM

Measurement tools: SEM, AFM, Four-Point Probe, Ellipsometry, Optical Microscope, Optical Transmission Spectrum, Optical Emission and Excitation Spectra

## ACTIVITIES

**University of Michigan**

Society of Minority Engineers and Scientists-Graduate Component

Sept. 2005-Present

- Communications Chair

May 2008-April 2009

Students of Color of Rackham

Sept. 2005-Present

Volunteer at Ann Arbor Community Center – Food Drives

May 2011-Present

**Villanova University**

Vice President, Villanova Chapter of National Society of Black Engineers

Fall 2003-Spring 2005

Villanova Gospel Choir

Fall 2003-Spring 2005

Tutor, Electrical and Computer Engineering Department

Fall 2003-Spring 2004

## AWARDS

University of Michigan Rackham Engineering Award Fellowship

September 2005-July 2009

Villanova University Electrical Engineering Outstanding Student Award

May 2005

Dean's List for Engineering, Villanova University

Fall 2001 & Fall 2002-Spring 2005

Eta Kappa Nu and Tau Beta Pi honor societies