

Justin C. Zito

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OBJECTIVE	Obtain an internship / co-op position for summer 2012 with a prestigious engineering company and to apply both the technical knowledge and leadership experience I have gained throughout my graduate studies and research	
EDUCATION	Ph.D., Electrical Engineering, University of Florida, Gainesville, FL Dissertation: "Investigation of Microscale Dielectric Barrier Discharge Plasma Devices" Advisor: Dr. David P. Arnold	Expected: Spring 2013
	Master of Science, Electrical Engineering, University of Florida, Gainesville, FL	Spring 2009
	Bachelor of Science [cum laude], Electrical Engineering, University of Florida, Gainesville, FL	Spring 2006
EXPERIENCE	INTEL CORPORATION <i>CQN QRE Intern</i> , Chandler, AZ	July – September 2012
	<ul style="list-style-type: none">Reliability testing of components in development: electrical characterization of newly designed components both pre- and post-stress testing; analyzing changes in device performance and providing feedback on causes of device degradation / failure analysisStress testing components: temperature cycling, constant bake at elevated temperature, highly accelerated stress testing (varying temperature and humidity); looking for electromigration (EM) and thermomigration (TM) induced failure	
RESEARCH EXPERIENCE	UNIV. OF FLORIDA. – DEPT. OF ELECTRICAL & COMPUTER ENGINEERING <i>Research Assistant</i> , Gainesville, FL <i>Interdisciplinary Microsystems Group, (focus in MEMS design), & Computational Plasma Dynamics and Laboratory Test Facility, (focus in flow control)</i>	May 2008 – present
	<ul style="list-style-type: none">Design, fabrication and characterization (both electrical and fluidic/mechanical) of dielectric barrier discharge (DBD) plasma actuators at the microscale. These are plasma-based (ionized gas) actuators that create a wall jet when a high-voltage, RF signal is applied across the electrodes of the device. Project was presented at <i>Solid-State Sensors, Actuators, and Microsystems Workshop (Hilton Head 2010)</i>, Hilton Head, SC, June 2010.Design and fabrication of a Zero-Net Mass-Flux Actuator (a.k.a. Synthetic Jet) for active flow control applications – funded with a research grant from NASA. Designed a PDMS diaphragm with embedded piston and coil. Diaphragm is actuated up and down via electrodynamic forces between a permanent magnet and an AC current through the coil. A cavity over the diaphragm pushes out a jet of air through a thin opening as the diaphragm deflects. The entire housing was built utilizing a rapid prototype machine.	
SKILLS	<i>Cleanroom Experience</i> – logged over 300 hours in UF's Nanoscience Research Facility	Dec 2009 – present
	<ul style="list-style-type: none">Lithography (Spin Coater, Mask Aligner with BSA, Solvent/Developer Bench)Deposition: PVD (Sputtering), CVD (PECVD), Electroplating, Electroless PlatingEtching: Dry (RIE, DRIE) and Wet Bench (Cr, Cu, Ti, or amorphous glass etch)Inspection/Verification: Profilometer, SEMWafer Dicing / Laser Machining	
	<i>Experimental Characterization</i> <i>Fluid Dynamics</i> : Particle Image Velocimetry (PIV), Pitot Probe Measurements, Schlieren Imaging, micro-Newton Force Measurements <i>Electrical Characterization</i> : HV Load Extraction (Curve Fitting / Extracting Circuit Model Parameters Experimentally), Impedance Analyzer, Oscilloscopes / Function Generators	
	<i>Software Proficiency</i> COMSOL Multiphysics MATLAB ProEngineer PSpice Java Ansoft Designer Ansoft HFSS Protel DXP (PCB) LEDIT Assembly (PIC) PBP Code Designer MathCAD AutoCAD	

LEADERSHIP	Lab / Safety Manager – oversee that safety procedures are followed in Microfabrication Lab for our Microsystems group of over 50 student users; also member of our Safety Committee	May 2011 – present
	Hazardous Chemical Waste Manager – responsible for chemical waste disposal in our Microfabrication Lab for the Microsystems research group having over 50 student users	Aug 2009 – Aug 2011
	Rapid Prototype Machine Superuser – one of 4 ‘superusers’ in charge of rapid prototyping equipment for entire Microsystems research group (over 100 students)	Aug 2009 - present

PUBLICATIONS

7. **J. C. Zito**, D. P. Arnold, T. Houba, J. Soni, R. J. Durscher, and S. Roy, “Microscale Dielectric Barrier Discharge Plasma Actuators: Performance Characterization and Numerical Comparison,” *43rd AIAA Plasmadynamics and Lasers Conference*, New Orleans, LA, June 2012, AIAA-2012-0391, 14 pages.
6. **J. C. Zito**, R. J. Durscher, J. Soni, S. Roy, and D. P. Arnold, “Mechano-Fluidic Characterization of Microscale Dielectric Barrier Discharge Plasma Actuators,” *Tech. Dig. Solid-State Sensors, Actuators, and Microsystems Workshop (Hilton Head 2012)*, Hilton Head, SC, June 2012, pp. 22-25. (Oral presentation)
5. **J. C. Zito**, R. J. Durscher, J. Soni, S. Roy, and D. P. Arnold, “Flow and Force Inducement Using Micron Size Dielectric Barrier Discharge Plasma Actuators,” *Applied Physics Letters*, vol. 100, no. 19, 193502, 4 pages, May 2012.
4. V. Divakar, Y. Zhang, **J. C. Zito**, E. A. Salley, and D. P. Arnold, “Microelectromechanical Inductors with High Inductance Density via Mechanical Energy Storage,” *11th Int’l. Workshop on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (PowerMEMS 2011)*, Seoul, Korea, Nov. 2011, 4 pages.
3. **J. C. Zito** and D. P. Arnold, “Fabrication and electrical characterization of microscale dielectric barrier discharge devices,” *Tech. Dig. Solid-State Sensors, Actuators, and Microsystems Workshop (Hilton Head 2010)*, Hilton Head, SC, June 2010, pp. 238-241.
2. **J. C. Zito**, D. P. Arnold, R. J. Durscher, and S. Roy, “Investigation of impedance characteristics and power delivery for dielectric barrier discharge plasma actuators,” *48th AIAA Aerospace Sciences Meeting*, Orlando, FL, Jan. 2010, AIAA Paper 2010-0964, 17 pages.
1. M. D. Williams, **J. C. Zito**, A. Sopeju, and D. P. Arnold, “Design of an electrodynamically actuated microvalve using COMSOL Multiphysics and MATLAB,” *European COMSOL Conf. 2008*, Hannover, Germany, Nov. 2008, 7 pages.