Erik Anderson

Ph.D. Candidate
School of Mechanical Engineering
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EDUCATION

Ph.D.	Mechanical Engineering	Georgia Institute of Technology	(expected) 2020
B.S.	Mechanical Engineering	Bradley University	May 2015
B.S.	Physics (Summa Cum Laude, Tau Beta Pi)	Bradley University	May 2015

AWARDS & HONORS

NSF Graduate Research Fellowship	*National Science Foundation*	2016
President's Fellowship	*Georgia Institute of Technology*	2015
Summa Cum Laude	*Bradley University*	2015
Outstanding Student of the Year Award	*Bradley University*	2015
Record Scholarship	*Tau Beta Pi*	2014
Stutz Family Scholarship for Physics	*Bradley University*	2014
President's Scholarship	*Bradley University*	2011

PUBLICATIONS

4. **E. C. Anderson**, T. L. Bougher and B. A. Cola, "High performance multi-insulator carbon nanotube tunnel diode arrays," *Proc. 16th Intl. Heat Transfer Conf.*, Beijing, China, Aug **2018**. [link]
3. **E. C. Anderson**, T. L. Bougher and B. A. Cola, "High performance multiwall carbon nanotube–insulator–metal tunnel diode arrays for optical rectification," *Adv. Electron. Mater.*, 4 (3), **2018**. [link]
2. **E. C. Anderson**, A. L. Macuk and S. J. Timpe, "Effect of enhanced ion transfer in process-induced electrochemical corrosion on surface morphology and tribological properties," *J. Microelectromech. Syst.*, 26 (2), **2017**. [link]
1. L. M. Rapp, **E. C. Anderson**, J. Pluhm, M. Morris and G. E. Dale, "Assessment of an oil filtration system for a helium circulation loop used for accelerator production of Mo-99," Los Alamos National Laboratory, Los Alamos, NM, Tech. Rep., LA-UR-15-27652, **2015**. [link]

PRESENTATIONS

4. E. C. Anderson, "Next generation of carbon nanotube optical rectenna for energy harvesting," *Gordon Research Conference*, Ventura, CA, Feb 2019. (abstract accepted).
3. E. C. Anderson, "High performance optical rectenna arrays using multiwall carbon nanotube-insulator-metal tunneling diodes," *233rd Electrochemical Society Meeting*, Seattle, WA, May 2018.
2. E. C. Anderson, "Optical rectenna arrays using multiwall carbon nanotube-insulator-metal tunneling diodes," *Career Research and Innovation Development Conference*, Georgia Institute of Technology, GA, Feb. 2018.

1. E. C. Anderson, “Design of RF probe for high-frequency-low temperature applications,” *REU Symposium*, Purdue University, IN, 2014.

RESEARCH EXPERIENCE

NanoEngineered Systems and Transport Lab, Prof. Baratunde Cola 2015 – present
Georgia Institute of Technology, Mechanical Engineering Atlanta, GA

– Researching carbon nanotube rectennas for infrared and optical sensing and energy harvesting. First demonstration of high performance, air-stable carbon nanotube diode arrays by using multiple insulating layers.

Undergraduate Research, Prof. Shannon Timpe 2013 – 2015
Bradley University, Mechanical Engineering Peoria, IL

– Investigated the effects of process-induced roughness on MEMS tribological properties, specifically manipulating HF acid etching to control MEMS interfacial adhesion.

Undergraduate Research, Prof. Paul Wang 2014 – 2015
Bradley University, Physics Peoria, IL

– Demonstrated method of enhancing phase purity of multiferroic Bismuth Ferric Oxide (BFO) through sputtering. Used spectroscopy to characterize thin-film BFO.

Undergraduate Research, Prof. Leonid Rokhinson Summer 2014
Purdue University, Physics West Lafayette, IN

– Designed and tested an RF probe for electron transport in mesoscopic systems. Simulation and experimentation of electrical components at high frequencies.

TEACHING EXPERIENCE

Instructor for Kung fu & Taichi 2017 – present
Georgia Institute of Technology, Campus Rec Center

Teaching Assistant 2014 – 2015
Bradley University, College of Engineering

Lab Assistant 2012 – 2014
Bradley University, Physics Department

Tutor – Physics, Engineering, Mathematics 2011 – 2014
Bradley University, Center for Learning Assistance

SKILLS

Fabrication: Cleanroom procedures, carbon nanotube growth, metal deposition, thermal evaporation, ALD, glove box procedures, etching, ellipsometry.

Microscopy and Spectroscopy: SEM, TEM, STEM-EDS, XPS.

Experimentation: Electrical probe station, optical setup, MEMS.

Software: MATLAB, OriginLab, Pro/E Creo,

SERVICE & OUTREACH

Leadership

Head Instructor: *Kung fu & Taichi*, Georgia Institute of Technology	2017 – 2018
President: *Tau Beta Pi*	2014 – 2015
Vice President: *Tau Beta Pi*	2013 – 2014
Student Advisory Council: *College of Engineering*, Bradley University	2013 – 2014
Secretary: *Sigma Pi Sigma*	2012 – 2015
Officer: *Mixed Martial Arts Club*, Bradley University	2011 – 2015

Outreach

Volunteer Adopt-A-Physicist: Society of Physics Students, 2017
Speaker: Wheaton Warrenville South high school, 2015, 2017
Speaker: Physics Department, Bradley University, 2016
Organizer: Engineering Day at Peoria Riverfront Museum, 2014, 2015
Physics demonstrations: hosted by Sigma Pi Sigma, Bradley University, 2013–2015
Kung fu martial arts instructor: over 10 years of instructing