

Exponent®
Engineering & Scientific Consulting

Alina Kozinda, Ph.D., P.E.

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Professional Profile

Dr. Kozinda has over five years of research and professional experience in mechanical engineering, fabrication, processing, and testing of devices. She has applied her expertise to energy storage devices such as supercapacitors and lithium ion batteries, gas and particulate matter sensors, as well as wearable technology.

Dr. Kozinda also has expertise in MEMS and nanotechnology and the fabrication and characterization of nanomaterials using scanning electron microscopy (SEM), electron beam and thermal evaporation of thin metal films, as well as low pressure and ambient pressure chemical vapor deposition (LPCVD and CVD). In addition, Dr. Kozinda has experience with rapid prototyping, powered shop equipment, and new product development.

Prior to joining Exponent, Dr. Kozinda worked as an engineer at Versa Wear, where she designed, prototyped, and gathered user feedback for the hardware of a smart jacket that helps to keep cyclists safe on the road. This work included the design of prototype testing protocols and goals as well as user research and rapid prototyping. She also worked as a consulting engineer for Clarity, where she planned, performed, and analyzed lifetime and accumulation tests of particulate matter (PM2.5) sensors. While there, Dr. Kozinda identified sensor key performance issues and proposed solutions, as well as a next generation sensor design.

Dr. Kozinda completed her Ph.D. at the University of California, Berkeley in the department of mechanical engineering, where her research focused on the use of flexible carbon nanotube films for energy storage applications. Her research included the fabrication of supercapacitor and lithium ion battery electrodes using silicon wafer oxidation, thin metal film evaporation through both thermal and electron ion beam evaporation, and chemical vapor deposition (CVD) growth of carbon nanotube forests, followed by low pressure chemical vapor deposition (LPCVD) of silicon within the CNT forest. During this time, she also fabricated and tested copper oxide nanowire array materials for use in a hydrogen gas sensor, and served as a teaching assistant for several graduate and undergraduate courses including Polymer Engineering, Micro/Nano Mechanical Systems Laboratory, and Biomimetic Engineering.

Academic Credentials & Professional Honors

Ph.D., Mechanical Engineering, University of California, Berkeley, 2014

B.S., Mechanical Engineering, University of Florida, 2009

B.S., Mathematics, University of Florida, 2009

Anselmo John Macchi Fellowship Fund in Engineering, Fall-Spring, 09-10

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Best Paper Award, September 2013 Berkeley Sensor & Actuator Center Industrial Advisory Board (Top 2 out of 179 UCB Researchers)

1st Place Photo in "Sweet Moments" Photo contest, Dog World Magazine, Vol. 98, 2014

Professional Affiliations

IEEE and CPMT (Components, Packaging and Manufacturing Technology Society) Member

Languages

Russian

Spanish

Publications

Kozinda A, Jiang Y, Chang T, Lin L. Flexible energy storage devices based on carbon nanotube forests with built-in metal electrodes. Sensors and Actuators A: Physical 2013; 195:224-230.

Jiang Y, Wang P, Zang X, Yang Y, Kozinda A, Lin L. Uniformly embedded metal oxide nanoparticles in vertically aligned carbon nanotube forests as pseudocapacitor electrodes for enhanced energy storage. Nano Letters 2013; 8:3524-3530.

Chang G, Song G, Yang J, Huang R, Kozinda A, Shen J. Morphology control of nanohelix by electrospinning. Applied Physics Letters 2012 Dec; 101:263505-263505-3.

Conference Presentations

Warren R, Sammoura F, Kozinda A, Lin L. ALD ruthenium oxide-carbon nanotube electrodes for supercapacitor applications. Oral presentation, MEMS 2014, San Francisco, CA, January 26-30, 2014.

Sammoura F, The KS, Kozinda A, Zang X, Lin L. A hybrid supercapacitor using vertically aligned CNT-polypyrrole nanocomposite. MEMS 2014, San Francisco, CA, January 26-30, 2014.

Kozinda A, Jiang Y, Lin L. Amorphous silicon-coated CNT forest for energy storage applications. Oral presention, Transducers 2011, Beijing, China. June 5-9, 2011.

Kozinda A, Jiang Y, Lin L. Flexible energy storage devices based on lift-off of CNT films. MEMS 2012, Paris, France. January 29-February 2, 2012.

JayaprakashV, Sochol RD, Warren R, Kozinda A, Iwai K, Lin L. Stackable cow dung based microfabricated microbial fuel cells. MEMS 2013, Taipei, Taiwan, January 20-24, 2013.

Limkrailassiri K, Kozinda A, Lin L. Copper(II) oxide nanowire array hydrogen sensor via facile large area contact integration. Transducers 2013, Barcelona, Spain, June 16-20, 2013.

Peer Reviews

Journal of Microelectromechanical Systems