



Exponent[®]
Engineering & Scientific Consulting

Charishma Cohen, Ph.D.

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Professional Profile

Dr. Cohen is formally trained in electrical engineering with a focus in device fabrication, solid-state physics and nanotechnology. She has experience in failure analysis of battery systems, of consumer electronics at the system, board and component level.

Prior to joining Exponent, she worked as a Research Assistant in the Bioelectronic Systems Lab at Columbia University in the department of Electrical Engineering, focusing on building a novel method to desalinate water using carbon nanotubes. The project involved a mix of electrochemistry, physics and electronics to design a single nanotube device to study ionic pump effects through the interior of sub 1nm carbon nanotubes. Through this work, she has gained experience in device fabrication and custom experimental testing of concepts. Before graduate school, she worked on separation of metallic and semiconducting carbon nanotubes that resulted in an issued US Patent on which she was a named inventor. Additionally, she has experience with characterization techniques including scanning electron microscopy (SEM) and energy-dispersive X-ray spectroscopy.

Academic Credentials & Professional Honors

Ph.D., Electrical Engineering, Columbia University, 2019

B.S., Electrical Engineering, University of Illinois, Urbana-Champaign, 2011

Professional Affiliations

Member of IEEE

Languages

Hindi

Patents

US Patent App. 14/004, 364, Asymmetric magnetic field nanostructure separation method, device and system, June 2014 (Joshua D. Wood, Joseph W. Lyding)

Publications

J Rabinowitz, C Cohen, K Shepard. An electrically actuated, carbon-nanotube-based biomimetic ion pump. Nano Letters 2019

Presentations

Electronic separation of dispersed carbon nanotubes in solution by Lorentz Forces, APS Meeting 2011

Project Experience

Electrical failure analysis of consumer electronics, appliances and battery systems

Battery-pack testing and failure analysis of lithium ion cells

Evaluation and design review of consumer electronics, appliances and battery systems