Materials Science and Engineering Department

Winter Seminar Series

Exploiting the Capabilities for Electron and Ion Microscopy at the Singh Center for Nanotechnology at Penn for Materials Research

Prof. Eric Stach
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University of Pennsylvania

February 14, 2024
11AM-12PM | Hill Seminar Room (LeBow 240)

The capabilities for focused-ion beam and transmission electron microscopy at the Singh Center for Nanotechnology at Penn have dramatically improved in the last five years due to institutional and government-funded investments (NSF). In this presentation, I will use examples from research activity in my group and other groups at Penn, the surrounding region, and beyond to show how electron and ion microscopy can be used to understand the structure, chemistry, and bonding of both hard and soft matter at the nanometer to atomic scale. I hope to provide insight into how members of the Drexel community can utilize the resources to advance their own scientific goals and will explicitly describe how to access the facilities.

Dr. Stach has held several different positions prior to his appointment at Penn, , including Electron Microscopy Group Leader at the Center for Functional Nanomaterials, Brookhaven National Laboratory, Associate and then appointed Full Professor at Purdue University, and Staff Scientist and Principal Investigator at the National Center for Electron Microscopy, Lawrence Berkeley National Laboratory. His research interests focus on developing and applying electron microscopy techniques to solve a wide range of materials problems, with the most recent emphasis on catalysis, energy storage materials, solar photovoltaics, and nanostructure growth.
He is a Fellow of the American Physical Society, the Materials Research Society, and the Microscopy Society of America, and recently completed a term as Secretary of the Board of Directors for the Materials Research Society. He has received several awards, including being named an ISI Highly Cited Researcher (Cross Field) in 2018, the Microscopy Society of America's Eli F. Burton (Young Scientist) Award, and Purdue University's Faculty Scholar, Early Career Research Excellence, and the Reinhardt Schumann, Jr. Undergraduate Teaching Awards. He is the author of over 250 peer-reviewed publications and has given over 200 invited lectures at conferences and university, government, and corporate laboratories. He is also a co-founder and Chief Technology Officer of Hummingbird Scientific, a nanotechnology company that enables advanced experimentation for electron and ion microscopes.

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