

**NANOMANUFACTURING FOR ENERGY APPLICATIONS**

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**Abstract:** Nanomaterials are of great importance for applications in clean and renewable energy, including electrochemical energy storage and energy harvesting/generation. For batteries and supercapacitors, engineered nanomaterials can be used to improve performance metrics including energy density, power density, and cycle life by tailoring the design of each device component. Battery and supercapacitor components including electrode materials, current collectors, and electrolyte can all be improved using nanomaterials. Designed nanomaterials are also of great importance in energy harvesting applications, such as piezo/pyroelectric materials and photoelectrochemical water splitting. This talk will explore nanomanufacturing considerations for energy storage and harvesting/generation applications, with particular emphasis on nanoscale manufacturing process design and scale-up.

**Bio:** Dr. Roseanne Warren is an Assistant Professor in the Department of Mechanical Engineering at the University of Utah. Her research focuses on nanomanufacturing for applications in electrochemical energy storage and microfluidics. Prior to joining the University of Utah, Dr. Warren completed her PhD at the University of California, Berkeley (2015). Dr. Warren is a recipient of an NSF CAREER Award (2020). She is a member-at-large of the Battery Division of The Electrochemical Society (ECS). Dr. Warren has organized several symposiums for ECS meetings, and served as a reviewer for numerous journals and NSF panels.