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SCALING SUSTAINABLE NANOTECHNOLOGY FOR ELECTROCHEMICAL ENERGY STORAGE

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Abstract: Nanotechnology has been demonstrated as a pathway to increase the performance of electrochemical energy storage materials. However, the route to such nanostructured materials is often neither scalable nor performed via sustainable methods. For electrochemical energy storage, where very large volumes of material are required, entirely new processing methods, including methods to recycle and reuse nanostructured energy storage materials are required. Careful consideration is also required to ensure that the methods used in these processes are also sustainable. I will briefly overview current work in this space and discuss a number of emerging opportunities to advance the state-of-the-art in nanostructured materials for electrochemical energy storage.

***Bio*:** Prof. Paul V. Braun is the Director of the Illinois Materials Research Laboratory, the Grainger Distinguished Chair in Engineering, Professor of Materials Science and Engineering, Professor of Chemistry, and Professor of Chemical and Biomolecular Engineering at the University of Illinois Urbana-Champaign. Prof. Braun received his B.S. degree with distinction from Cornell University, and his Ph.D. in Materials Science and Engineering from the University of Illinois Urbana-Champaign. Priority research areas of research in his group include smart materials, materials for energy and the environment, and advanced optical materials. Prof. Braun has co-authored a book, about 300 peer-reviewed publications, been awarded multiple patents, and has co-founded three companies. He is the recipient of multiple awards, and is a Fellow of the Materials Research Society and American Association for the Advancement of Science.