

Colloquium Notice

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Stony Brook University

Electrochemical energy storage (batteries): A keystone for a clean energy future

Energy is a necessity which touches every aspect of our modern lives. Access to clean, affordable energy directly scales with quality of human life. While the electrical grid and the automobile have been recognized as two of the greatest engineering achievements of the 20th century (NAP 2003), electric power and transportation remain the two largest U.S. sources of greenhouse gas emissions in the 21st century (EPA 2022). The central role of electrochemical energy storage systems (batteries) as a keystone for a sustainable energy future will be described in this presentation, including advances in beyond lithium-ion battery systems. The demands of different applications and the opportunities presented by different battery chemistry, materials science, and engineering solutions will be discussed. The criticality of in-situ and operando approaches to understand battery function under application relevant use cases will be highlighted.

Bio:

Amy Marschilok is a Professor in the Department of Chemistry at Stony Brook University, where she is an Adjunct Faculty in the Departments of Materials Science and Engineering and Chemical and Molecular Engineering and Co-Director of the Institute of Energy: Sustainability, Environment, and Equity (I:SEE). Dr. Marschilok holds a Joint Appointment at Brookhaven National Laboratory, where she serves as Energy Storage Division Manager and Energy Systems Division Manager in the Interdisciplinary Science Department. She also serves as Director of the Center for Mesoscale Transport Properties (<http://www.stonybrook.edu/commcms/m2m/index.html>), an Energy Frontier Research Center funded by the U.S. Department of Energy. Dr. Marschilok was previously employed as a Senior Scientist in the Medical Battery Research and Development group at Greatbatch Inc., where she was recognized as a Visionary of the Year. She was also honored with the Woman of Distinction Award, Education Category Recipient from GSWNY and the Western New York YWCA Leadership Award, Professional Service Category. She was an inaugural cohort member of the Oppenheimer Science and Energy Leadership Program, and is currently part of cohort 6 of the Battelle Laboratory Operations and Supervisor Academy. Current service activities include membership on the Board of Directors for the Society of Electroanalytical Chemistry and the New York Battery and Energy Storage Technology Consortium. Her current research centers on electrochemistry-based and -coupled characterization approaches; materials and electrode concepts for high power, high energy density, extended life batteries; and operando investigations of energy storage materials and systems.

Monday
April 1, 2024
Starts at 12:15 PM
Coffee at 12:00 PM
Physics Conference Room, SB B326

Physics Department of Queens College, 6530 Kissena Blvd, Queens, NY 11367 <https://physics.qc.cuny.edu>