Alternative Chemistries for Advanced Batteries

Tuesday, November 8th, 2022
Public Session, Keck 103

Zoom Link:

https://nasem.zoom.us/j/98324541248?pwd=TDV2clFRUXF1cll0bjJmVWVWRmpUZz09

2:00 PM **Welcome and Call to Order**
Jennifer Sinclair Curtis and Scott Collick, Co-Chairs

2:03 PM **Alternative Chemistries for Advanced Batteries: *Project Introduction***
Dr. Amy Prieto, BCST Board Member

2:18 PM **Circular Economy for Energy Materials-Advanced Energy Materials Strategic Initiative**
Maria Curry-Nkansah, Ph.D., Senior Research Advisor and Lead for the Strategic Initiative, National Renewable Energy Laboratory

2:50 PM **Discussion between BCST and Maria Curry-Nkansah**
Moderated by Drs. Jodie Lutkenhaus, BCST Board Member, and Amy Prieto

3:15 PM **Critical Materials for the Clean Energy Transition**
Thomas (Tom) Lograsso, Ph.D., Director of the Critical Materials Institute, Ames Laboratory

3:40 PM **Discussion between BCST and Tom Lograsso**
Moderated by Dr. Shelley Minteer, BCST Board Member, and Amy Prieto

4:00 PM **Brief Break**

4:05 PM **Opportunities for Chemistry in Energy Storage for Climate Change**
George Crabtree, Ph.D., (NAS), Director of Joint Center for Energy Storage Research, Argonne National Laboratory

4:30 PM **Discussion between BCST and George Crabtree**
Moderated by Drs. Jodie Lutkenhaus and Amy Prieto

4:55 PM **Closing Remarks**

5:00 PM **Adjourn**

Biographies of Presenters

Dr. George W. Crabtree (NAS)

George Crabtree is Director of the Joint Center for Energy Storage (JCESR) at Argonne National Laboratory, and a Distinguished Professor of Physics, Electrical, and Mechanical Engineering at University of Illinois-Chicago (UIC). He leads research on creating next-generation electricity storage technology beyond lithium-ion batteries. He has directed workshops for the Department of Energy on energy science and technology, is a member of the National Academy of Sciences and has testified before the U.S. Congress on the hydrogen economy, on meeting sustainable energy challenges, on the prospects for next generation electrical energy storage, and on accelerating energy storage on the electricity grid.

Dr. Maria Curry-Nkansah

Maria Curry-Nkansah started at NREL in 2019 and is a senior research advisor and lead for the NREL Circular Economy for Energy Materials-Advanced Energy Materials strategic initiative. She is responsible for leading short- and long-range planning and implementation for projects that promote a closed-loop system for increased resiliency, durability, and recovery of critical materials, components, and devices for low-carbon intensity technologies. Prior to NREL, she spent 6 years as the chief operating officer for Argonne National Laboratory's physical sciences and engineering directorate with 800 staff and $150 million in annual funding. Her role included oversight of fiscal, IT, and human resource management; major infrastructure planning; safety and quality assurance; driving safe, cost-effective, and efficient research; and development operations. Curry-Nkansah also served as the co-lead for U.S. Department of Energy Former Secretary of Energy Ernest Moniz's 2016 National Lab Science Day. She was a former co-chair for the $2 billion Department of Energy's FreedomCAR and Fuel Partnership, as well as an original founder of the Argonne ACT-SO High School Research Program, created in 2013.

Additionally, Curry-Nkansah has over 20 years of experience in scientific R&D and product development, including 14 years at BP and 5 years at Rohm and Haas (now Dow). Other career roles have included senior research scientist, group leader, market development manager, and business development manager. She holds three patents and has given more than 30 technical presentarions. Her awards include the Argonne National Laboratory Pinnacle of Education Award; the Egretha Award; and the Argonne Pacesetter Award. Curry-Nkansah is a former board member of the Hydrogen Education Foundation and the Naperville Indian Prairie School District 204, and is a member of the DuPage County ACT-SO Executive Steering Committee. She is also the proud mother of Asare, a computer scientist, and Abbey, a materials science major at University of Illinois Urbana-Champaign. Curry-Nkansah has and continues to devote her energies in increasing the participation of young African Americans in the fields of STEM, which is part of her passionate contribution to social justice.

Her educational degrees are: Ph.D., Physical Inorganic Chemistry, The University of North Carolina at Chapel Hill; MBA, The University of Chicago Booth School of Business; and B.A., The University of North Carolina at Chapel Hill.

Dr. Thomas Lograsso

Dr. Thomas Lograsso is the Director of the Critical Materials Institute. He has been a member of the Leadership team since the inception of CMI, leading the Developing Substituting Focus area. He has been a materials scientist at the Ames Laboratory since 1988. He received his B.S., M.S. and Ph.D. in Metallurgical Engineering from Michigan Technological University. Lograsso background is in solidification physics, and he has applied his background to the synthesis and design of new novel materials in single crystalline forms. His efforts have made significant contributions to the understanding of the underlying physics and functionalities in a broad range of materials systems including structural intermetallic alloys; quasicrystalline compounds; ferromagnetic shape memory alloys; giant magnetocaloric compounds; rare earth-transition metals intermetallics. Tom is co-inventor of a rare-earth free substitute for the magnetostrictive alloy Terfenol-D (contains the critical elements Tb and Dy) used in high precision machining operations for small engine components and as a ultrasonic driver in petroleum exploration.