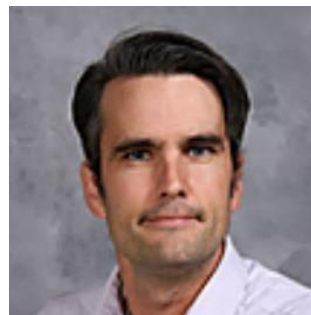


*Western Michigan University
The Department of Chemistry Presents:*

James Salvador, PhD

Staff Researcher
General Motors Research and Development Center
Warren, MI

Biography: Jim Salvador is a staff researcher at General Motors Research and Development Center in Warren, MI. He earned a bachelor's degree in chemistry from Western Michigan University in 1998 and his Ph.D. in Chemistry from Michigan State University in 2004. After completing graduate studies, he earned an appointment as a Marsden Fellow at the Center for Structural Biology at Massey University in Palmerston North, New Zealand where he studied proton mediate charge transfer reactions of super oxide dismutase enzymes. After returning to the US he taught introductory chemistry at Ferris State University and Western Michigan University, then became a researcher at GM R&D. While at GM Jim has worked on thermoelectric materials, waste heat recovery, hydrogen storage materials for fuel cell vehicles, lithium ion battery degradation mode identification and quantification and li-metal battery technologies.



Title: "Sulfide Solid State Electrolytes for Protected Li-metal Anode Batteries."

Abstract: General Motors has committed to an all-electric future with a full fleet of vehicle offerings that will have zero tailpipe emissions. To meet this goal there needs to be both a dramatic reduction in the cost of energy storage systems as well as an increase in their energy density. A major focus area of research and development, globally, is Li metal anode batteries. Significant gain in energy density can be achieved by replacing current state of the art graphite anodes with thin sheets of Li metal (5-20um). This substitution comes with several challenges including: greatly reduced cycle life and poor fast charge capability. In this talk we will review the basic electrochemistry of standard Li-ion batteries, identify how the energy density can be significantly improved by using Li-metal anodes and then finish by exploring some of the chemistries that are being developed to overcome the challenges described above.

Monday, March 22nd at 4pm

Join Zoom Meeting link:

<https://us02web.zoom.us/j/82939294138?pwd=Q0VvOUN0VDFQVmMxL1JQSjFtMVk4UT09>

Meeting ID: 829 3929 4138

Passcode: ks9Er8