NPS Defense Energy Program Presents:

Defense Energy Seminar

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Enabling Solid State Batteries with Breakthrough Polymer Technology

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With Dr. Michael A. Zimmerman

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Dr. Michael Zimmerman

Abstract

Attendees will learn about a new polymer material that enables safe solid-state batteries that are operational at room temperature and compatible with a handful of widely desired, next-generation battery chemistries, including safe lithium ion, lithium metal, rechargeable alkaline and more. Benefits of this solution include:

• Inherent Safety: Eliminates safety issues with liquid electrolytes

• Higher Performance: Enables higher energy anodes and cathodes

• Lower Cost: Reduces battery cost through less expensive chemistries and novel manufacturing

By enabling the creation of batteries that are safer, cheaper, and higher performance than the current state-of-the-art, Ionic's polymer electrolyte shatters the traditional battery design paradigm, under which safety, cost, and performance must generally be traded off against one another. The company is bringing this technology to market with core manufacturing partners in the battery industry. The presentation will provide inside access to data and use cases for polymer electrolyte battery solutions.

Biography

Dr. Mike Zimmerman is the Founder and CEO of Ionic Materials, a technology company that has developed the solid polymer electrolyte with a new conduction mechanism for solid state batteries. With more than 30 years of experience in the materials science field, Mike has founded several companies in the manufacturing, finite element analysis and science industries.

Mike is also the founder of iQLP (2011), an incubation lab for new material science products and technologies. Prior to founding iQLP and Ionic Materials, Mike was the Founder and CTO of QLP Inc. (2002), which developed and commercialized a disruptive polymer for electronics, and led to the creation of iQLP. Under Mike's leadership, the company successfully exited with a sale to Interplex Industries, a global manufacturer.

Mike began his career at AT&T Bell Labs, where he served as a consulting member of technical staff, which is reserved for the top 1% of the technical community. Throughout his 15 years at AT&T, Mike worked on developing and commercializing new semiconductor module packaging technologies and the architecture development of low cost packaging and electronics for fiber to the home.

Mike has been a professor at Tufts University for more than 25 years, focusing on materials science, manufacturing and finite element analysis, and holds the title of Professor of the Practice. Mike has a Ph.D. in mechanical engineering and applied mechanics from the University of Pennsylvania, a M.S. degree from Massachusetts Institute of Technology in fibers and polymers division, and a B.S. degree from Rensselaer Polytechnic Institute in mechanical engineering.

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