



Chemistry In Emerging Technologies Lectures

Peckham Hall, Rm. 12 - Nazareth College, 4245 East Ave., Pittsford, NY

Monday, October 3, 2016

Ionic Liquid Electrolytes for Safer Li-Ion Batteries

**Dr. Surya Moganty, CTO, NOHMs Technologies, Inc.
(www.nohms.com)**

7:00 pm: Lecture

Among the various battery technologies, Lithium-ion batteries provide highest energy density and suitable cycle life for the mobility and consumer market needs. With the ever-growing demand to gain more run time, high voltage Li-ion battery electrode chemistries are being developed to increase the energy density. Safety concerns of these high energy dense batteries are also growing. NOHMs Technologies is developing non-flammable, non-volatile, ionic liquid-hybrid electrolytes (NanoLyte™) that overcome safety concerns in Li-ion batteries. Ionic liquids are a unique class of organic salts with negligible vapor pressure, non-flammability, good room-temperature ionic conductivity, wide electrochemical windows, and favorable chemical and thermal stability. They are ideal candidates for safer electrolytes in Li-ion batteries. Using the power of ionic liquids, NanoLyte™ high voltage electrolytes for lithium ion batteries will reduce the current cost of Li-ion batteries up to 50% and improve runtime. NanoLyte™ high temperature electrolytes push the limits of what is possible for rechargeable batteries. The unique properties of this material, as well as its battery performance, will be presented.

Dr. Surya Moganty received his Ph.D. in Chemical and Biomolecular Engineering in 2009 from Clarkson University and subsequently worked as a Postdoctoral Associate with Prof. Lynden Archer at Cornell University, where he developed nanomaterials for Li-ion batteries, including Li-S cathode materials and electrolytes. Dr. Moganty is an expert in hybrid materials, ionic liquid electrolytes, and electrochemistry, and was previously a new product Process Engineer at Intel. He published 19 peer reviewed research articles and currently holds one US patent. Dr. Moganty, as a PI, received \$7M funding from various Federal and NY State funding agencies to support his research work.

8:15 – 9:30 p.m.: Reception – Peckham Hall Lobby

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