

## **Next Generation of Portable Power Systems: Fuel Cells and Li Air Batteries**

Sanjeev Mukerjee

Department of Chemistry and Chemical Biology

Center for Renewable Energy Technologies

Northeastern University, 360 Huntington Avenue, Boston, MA USA 02115

Next generation of portable electronic devices will need electrochemical power systems with significantly higher power and energy density. Towards this goal fundamental improvements in materials *i.e.*, electrocatalysts, membranes and interfacial design is required. This presentation will provide some of the seminal work done on next generation of electrocatalysts for both oxygen reduction and direct of oxidation of complex fuels such as ethanol. Both in the context of low and medium temperature proton exchange and new anion exchange membrane fuel cells. In addition new development in the context of Li-air batteries encompassing electrolytes and catalyst for oxygen reduction in non aqueous environments will be discussed.