

## **Nano-Enabled Energy Storage Device: Nanoengineering Approach**

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### **Abstract**

The proposed project focuses on developing novel oxide based energy storage device for futuristic energy applications related to Biologistic. The main thrust of the research is to develop novel nanostructured based electrodes ( $\text{NiCo}_2\text{O}_4$ ) for batteries which includes (1) identification of potential materials, (2) development of novel nanostructures with high surface area, and (3) understanding of long term repeatability and stability of battery materials. The energy dense battery electrodes will allow effective long distance transport (mobility and controlled environment) of biological specimen and samples at appreciably low cost. The long term implication is that proposed efforts will result in discovery and engineering of marketable, energy dense, small carbon foot print, cheaper, material for transportation and energy applications. The research efforts will be interwoven with outreach activities including regular seminars, presentations at conferences, and high school student participation in various aspects of the project via on-going summer programs on campus.