

Grants Awarded Report

From: 11/01/08 to 11/30/08

Project Title: Life Modeling of Li-ion Cells-Phase II

Activation Amount: \$682,000.00

Agency: National Reconnaissance Office

Personnel:

PI - Venkat Subramanian, Chemical Engineering

Abstract:

The lithium-ion battery is an ideal candidate for satellite applications because of its high energy/power density and operating voltage. Thermal runaway, leakage of current, side reactions, capacity fade, etc. may cause lithium-ion batteries to fail. Some of these events might happen because of unplanned or man-made events (e.g., overcharge, uncontrolled discharge/charge of lithium-ion batteries). In this project, we plan to develop a mathematical model/software module that will help people use lithium-ion batteries for satellite applications. This module will be able to predict the calendar life and cycle life for the cell. The module will also incorporate the thermal effects on the spatio-temporal behavior of the battery and its influence on the discharge curves. Advanced mathematical techniques will be used to simplify first-principles models without compromising on accuracy. A technical approach will be established for efficient reformulation models based on the effective combination of several approximation and averaging techniques.

Grants Awarded Report

From: 11/01/08 to 11/30/08

Project Title: Continuation and Expansion of Experimental Learning Farm

Activation Amount: \$100,000.00

Agency: Tennessee Department of Agriculture

Personnel:

PI - Pat Bagley, Agricultural and Human Sciences

Abstract:

Grants Awarded Report

From: 11/01/08 to 11/30/08

Project Title: Positive Behavior Support and Intervention Project 2008-09

Activation Amount: \$20,000.00

Agency: Tennessee Department of Education

Personnel:

PI - John Wheeler, Education Administration

Support Personnel - Amy Johnson-Gwilt, Curriculum and Instruction

Support Personnel - Richard Bumbalough, Curriculum and Instruction

Abstract:

The purpose of this project will be to deliver technical assistance and consultation in the area of positive behavior supports (PBS) to regional schools in the 22-county Upper Cumberland region. The project will provide participating educators and systems with training and technical assistance in the use of evidence-based practices through consultation aimed at enhancing the knowledge, skills, and practices of educators within the designated service area in the delivery of positive behavior supports. This training curriculum will reflect best and effective practices in the design, delivery, and evaluation of PBS and will be paired with on-site consultation and assistance by project staff in the development of school-based behavior support teams aimed at designing classroom and school-wide systems within local education agencies. The project will conduct a formative and summative evaluation of project activities that will include but not be limited to the evaluation form developed by the TN DOE. Evaluation data will be collected with the purpose of documenting project benchmarks and also aimed at determining the efficacy of the project in the development of knowledge, skills, and improved practices among educational personnel in the delivery of positive behavior supports. In addition, data collection will also be conducted in select cases to determine treatment efficacy based on the recommendations made by the TTU and LEA-based support teams.