



## **Temperature Regulated Battery Charging**

### **Principal Investigator:**

Christopher Harrison

### **Background:**

When batteries are first manufactured, their chemical states and characteristics are generally similar, but not uniform. However, as batteries are used for various applications with different workloads, environmental conditions and user care, the chemical characteristics of such batteries change. Many conventional battery charging methods assume battery uniformity and therefore do not provide an optimal charge since methods for charging a battery can affect battery life, performance, efficiency, and charging time. It is known that exposure to extreme temperatures is one of the main causes of a chemical degradation in batteries.

### **Description of Project:**

A prototype of a self-modifying charging platform has been tested that incorporates the charging procedure into a processor, such as a microprocessor, microcontroller, etc., which receives and transmits data to a charging device. The data is used in a mathematical function to produce an intended charge current. This function can either utilize temperature or change in temperature information. It adjusts the charge current value accordingly to maintain a battery temperature threshold. This value is then output and used to actually set the charging current.

### **Applications:**

Extending the utility of rechargeable batteries.

### **Patent Status:**

A non-provisional US patent application has been filed.

### **For further information please contact:**

New York University  
Office of Industrial Liaison  
650 First Avenue  
New York, NY 10016  
Tel: (212) 263-8178 Fax: (212) 263-8189