

## **Battery Data Analyst, FUSE Internship, WP5, WMG**

**Title:** Battery Data Analyst

**Scope:** Data mining and machine learning for battery manufacturing

### **Description:**

The Battery Data Analyst intern will be embedded into the WMG team supporting WP5 of the Nextrode project focussing on “smart” battery production. The intern will gain a comprehensive introduction to WMG’s battery manufacturing process. He/she will have the opportunity to undertake research on the Nextrode project to improve their data management skills, as well as the design, implementation and validation of novel machine learning models for optimised battery manufacture.

### **Duties and Responsibilities:**

The role involves critical investigation of the experimental/manufacturing data to improve battery electrode manufacturing processes. The responsibilities for the role are in line with the following objectives:

- Pre-processing the instrumentation data that becomes available from the WMG pilot line and from UKBIC and partner universities.
- Creation of data storage structures, data visualisation and presentation methods, data cleaning, and the statistical assessment of “raw” data.
- Investigating the predictability of battery characteristics, such as energy capacity, given the manufacturing data via machine learning techniques.
- Preparing the data to underpin model training, test and design of the machine-learning models such as neural networks.

### **Skills and experience**

Essential:

- Familiar with MATLAB (scripts) or Python/R programming
- Interest in batteries and energy storage systems
- Familiar with documentation and reporting
- Confident communicator
- Willingness to learn and explore new areas
- STEM degree programme

Desirable

- Experience with Machine Learning algorithms

**Duration:**

8 weeks