Battery diagnostics in a commercial environment
EngD

Funding: £20,053 (for UK/EU nationals) which includes a £4,000 industrial top up, for 4 years

Supervisors: Professor David Greenwood, Dr John Low and Mark Amor-Segan

Supporting company: Millbrook

Start Date: As soon as possible

Project overview
This is a fantastic opportunity to work with WMG, University of Warwick, the foremost UK facility for battery innovation, research and development, in association with Millbrook, the leading vehicle testing facility for the design, engineering and development of automotive and test technology propulsion systems.

Electrochemical power devices (such as Lithium-ion battery and supercapacitor technology) are ubiquitous for automotive energy storage. They are used on-board vehicles in a wide range of technological applications demanding higher capacity, high rate capability and extended cyclability, and there is an increasing need to further develop robust testing techniques and protocols.

This project focuses on the diagnostics of electrochemical power devices, and how to use techniques and best practice from battery research and translate this into large-scale commercial validation and development. Specifically, you will have the opportunity to learn and progress the latest advances in electrochemical performance testing, characterisation and certification for batteries.

As an Engineering Doctorate, this project has a unique relationship between research and industry, with an emphasis on innovation and addressing real world issues, with 50% time split between both organisations. There will be regular knowledge exchange between WMG and Millbrook, with supervision from world-leading WMG academics in this field, alongside senior Millbrook industrial principals to provision quantifying techniques, and develop new innovations for the diagnostics of single cells, modules and system packs in a commercial environment. These include accelerated ageing, degradation investigation and commercial testing to meet approved standards, covering the full range of testing methods employed. This will translate into application-driven knowledge for robust diagnostics and methodology, critically relevant for vehicle safety in the automotive industry.

You will have full access to state-of-the-art facilities in WMG’s Energy Innovation Centre at The University of Warwick, the only one of its kind in the UK. Your learning and research supervision will be provided by principal academics in WMG, including skills development opportunities, alongside Millbrook, one of the UK’s top vehicle testing and proving ground, with extensive facilities and specialist expertise.

This project can progress depending on your prior experience, and the successful candidate will likely cross the boundaries of several key engineering disciplines including electrochemical energy storage, electrical, electronic and mechanical engineering.

Qualifications:
A minimum of an upper second (2.1) honours degree (or equivalent) in a relevant subject such as electrochemistry, electrical, electronic, or mechanical engineering. An understanding of theoretical, modelling and practical testing will be an advantage.

Funding:
Due to funding regulations, the applicant should be a UK/EU student.

This position provides a 4 year tax free stipend (for UK/EU nationals) plus a £4,000 industrial top up, totalling £20,053.

To apply
If you would like to be considered for this position or have any questions please complete our online enquiry form.