Automotive Lithium Ion Battery Diagnostics
EngD

Funding: £20,277 (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: 1st October 2018

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 UK vehicle testing facility for the design, engineering and development of automotive and test technology propulsion systems, with a customer base ranging across the automotive, transport, petrochemical and defence industries.

Lithium-ion batteries are seeing increasing utilisation 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. The key metrics for how these systems perform are energy capacity, specific power and life, with critical understanding required of how these change with age.

This studentship focuses on the diagnostics of electrochemical power devices, and how to use techniques and best practise from battery research and translate this into large-scale commercial validation and development, progressing the latest advances in electrochemical performance testing, characterisation and certification for batteries.

Key Objectives:

- Characterise commercial lithium ion pouch, cylindrical and prismatic cells.
- Characterise automotive battery modules and battery packs.
- Develop experimental jigs and apparatus to support your research
- Develop commercially applicable battery characterisation techniques
- Investigate ageing behaviour and develop accelerated ageing tests.

Entry requirements
Qualifications:
Candidates should have a minimum of an upper second (2.1) honours degree (or equivalent) in a relevant subject electrical, materials or mechanical engineering. Previous experience of working on this type of research in an industrial or academic setting is highly desirable, but also welcome applicants from adjacent sectors with relevant skills.

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 £20,277.

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