Advanced Battery System Control using on-Board Vehicle Telematics
- Electric and Hybrid Vehicles

Funding: EPRSC PhD studentship with Jaguar Land Rover
Start date: 1 October 2016 for up to 3.5 years
Supervisor: Dr James Marco

Project Overview:
A key enabling technology for the successful introduction of future electric vehicles and hybrid electric vehicles is the design and verification of the different control and software functions that comprise the battery management system (BMS) for the vehicle.

Significant opportunities exist to extend the performance envelope and improve the reliability of such vehicles if greater use is made of the disparate datasets that are required to design and model the BMS control algorithms, such as: initial cell characterisation data, laboratory test data, usage data captured from the vehicle or grid charger and data obtained through vehicle servicing and maintenance.

The research challenge for this PhD is to optimise a novel control system framework for managing these datasets, and translating this data into useful information for new, model-based, control system solutions for the BMS. Areas of particular interest for this PhD research include:

- The use of vehicle telematics to further enhance and improve vehicle control systems for state of charge, state of health and state of function estimation.
- The development of data mining and data post-processing algorithms for capturing potential system faults and mitigating their occurrence in real-time.
- The creation of data management processes for delivering software online updates and calibration.

Through undertaking this project you will work within a multidisciplinary team of researchers, academics and industry engineers from Jaguar Land Rover and WMG.

Funding:
This position provides a tax free stipend (for UK/EU nationals) and all fees paid are paid for UK/EU nationals for up to 3.5 years.

Eligibility:
Potential candidates must be able to clearly evidence academic/industry achievement within the related fields of systems modelling, embedded systems, control engineering, system design and verification, and data processing.

Candidates should hold a 1st or 2.1 degree in a science or engineering discipline.

Application:
Please complete our online enquiry form