

Research Associate in Hybrid and Electrified Powertrain (Fixed-term for 12 months)

Job Ref: REQ17837

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

Job Description

Joining one of the largest University based automotive propulsion research groups in the world this project is an exciting opportunity to contribute to the development of next generation hybrid and electrified powertrain systems. Working within the controls team you will be responsible for developing innovative solutions to the controls challenges faced in the engineering of modern systems with particular focus on those arising as a result of powertrain hybridization and ultimately full electrification.

We work very closely with our industrial partners to ensure that our work has immediate impact globally and pride ourselves in bringing new concepts to maturity quickly. To this end you will have the full support of a team of researchers, working in this exciting area and full access to state-of-the-art test and simulation facility and tools to help you to complete your work.

This is an exciting opportunity for a researcher that is highly motivated wishing to make a difference in this rapidly evolving area of research.

Job Grade: Specialist and Supporting Academic Grade 6

Job Purpose:

The Research Associate will be responsible for undertaking research in modern hybrid and electrified vehicle power systems (light and heavy duty) normally as part of a powertrain. This research will be completed alongside existing researchers in the team and our industrial partners, representing some of the largest OEM's in the world.

Job Duties

Research

The Research Associates will be primarily based in the Department of Aeronautical and Automotive Engineering closely associated with various OEM partners and the Digital Engineering and Test Centre on our London campus.

The work entails, primarily, the following activities;

- To conduct scientific and technological research into the control, for best performance of hybrid and electrified thermal propulsion systems.
- To evaluate and deploy the next generation of control system particularly those that are able to self-adapt and identify optimal behaviour online (as they operate).
- To develop simulation methodologies and technology that supports the deployment and evaluation of various controls technologies.
- To be responsible for managing projects to completion alongside other researchers.
- To assist in other related engineering research projects as required.
- To carry out literature reviews, to write up technical reports and technical papers for publication of the results obtained and the generation of research posters and other publicity media.
- To plan, manage and conduct the work to agreed dead-lines.

- To set and monitor budgets with respect to expenditure on equipment, consumables and travel.
- To assist in guiding and training postgraduate research students.
- To assist in developing new lines of research and the writing of research proposals.
- To keep close contact with research sponsors and make technical presentations.
- To maintain confidentiality where appropriate and to ensure that intellectual property (IP) agreements are met.
- To identify and report new opportunities for IP generation.
- Where necessary, to spend short periods of time travelling in the UK and overseas.
- Travel to equipment suppliers and other organisations on an ad-hoc basis.

Teaching

Teaching is not the primary purpose of this post and teaching load will be small relative to the typical load of a member of academic staff in the School, but the Research Associates may be expected to contribute to taught programmes and student projects, at any level, if appropriate and if requested to do so.

Other Related Activities and Functions

- To engage in training programmes in the University (e.g. through Professional Development) and elsewhere as required.
- All staff have a statutory responsibility to take reasonable care of themselves, others and the environment and to prevent harm by their acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Policy & Procedures.
- To undertake such other duties as may be reasonably requested and that are commensurate with the nature and grade of the post.

Points To Note

The purpose of this job description is to indicate the general level of duties and responsibility of the post. The detailed duties may vary from time to time without changing the general character or level of responsibility entailed.

Special Conditions

All staff have a statutory responsibility to take reasonable care of themselves, others and the environment and to prevent harm by their acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Policy & Procedures.

All staff should hold a duty and commitment to observing the University's Equality & Diversity policy and procedures at all times. Duties must be carried out in accordance with relevant Equality & Diversity legislation and University policies/procedures.

Successful completion of probation will be dependent on attendance at the University's mandatory courses which include Respecting Diversity and, where appropriate, Recruitment and Selection.

Organisational Responsibility

Reports to project PI.

Person Specification

Your application will be reviewed against the essential and desirable criteria listed below. Applicants are strongly advised to explicitly state and evidence how they meet each of the essential (and desirable) criteria in their application. Stages of assessment are as follows:

- 1 – Application
- 2 – Test/Assessment Centre/Presentation
- 3 – Interview

Essential Criteria

Area	Criteria	Stage
Experience	Specific detailed experience in the development and deployment of advanced control systems	1,3
	Experience with modelling techniques and experimental instrumentation	1,3
	Simulation methodologies including the use of Simulink	1,3
	The conducting of original research that can be, or has been published in high quality journals	1,3
	Significant experience of working in industry and/or collaboration with industry on research projects	1,3
	Project planning and management experience	1,3
	Analysis of quantitative experimental data	1,3
	Competent IT/ Internet user	
Skills and abilities	Demonstration of excellent technical ability	1,3
	Knowledge of engine technology and systems	
	Leadership and research management skills with a focused drive for results.	1,3
	Excellent inter-personal and communication skills - both written and oral	1,3
	Excellent team-working skills	1,3
	Excellent research paper or report writing skills	1,3
	Highly-motivated with the ability to set and meet deadlines appropriate to the progress of the project	1,3
Training	Willingness to undertake appropriate further training and to adopt new procedures as and when required	1,3
Qualifications	A good honours degree (2:1 or above) in mechanical/electrical engineering, or other relevant subject. PhD or near completion	1,3
	Relevant postgraduate research qualifications or industrial experience in optical measurement techniques	1,3
Other	Commitment to observing the University's Equal Opportunities policy at all times	1
	Willingness to travel	1,3

Desirable Criteria

Area	Criteria	Stage
Experience	Equipment purchasing/budgeting	1,3
	Project planning / management / leadership experience	1,3

Skills and Abilities	Track record in originating and developing new ideas	1,3
	Relevant industrial experience	1
	Interest in automotive and IC engine product development	1
	Ability to develop a programme of original research, persuade others of its importance and thus secure funding from external sources	1
Other	Licensed for driving in the UK	1,3

Conditions of Service

The position is full time and fixed term for 12 months. Salary will be on Specialist and Supporting Grade 6, £29,799 - £35,550 per annum, at a starting salary to be confirmed on offer of appointment. Subject to annual pay award.

The appointment will be subject to the University's normal Terms and Conditions of Employment for Academic and Related staff, details of which can be found [here](#).

The University is committed to enabling staff to maintain a healthy work-home balance and has a number of family-friendly policies which are available at <http://www.lboro.ac.uk/services/hr/a-z/family-leave-policy-and-procedure---page.html>.

We also offer an on-campus nursery with subsidised places, subsidised places at local holiday clubs and a childcare voucher scheme (further details are available at: <http://www.lboro.ac.uk/services/hr/a-z/childcare-information---page.html>

In addition, the University is supportive, wherever possible, of flexible working arrangements. We also strive to create a culture that supports equality and celebrates diversity throughout the campus. The University holds a Bronze Athena SWAN award which recognises the importance of support for women at all stages of their academic career. For further information on Athena SWAN see <http://www.lboro.ac.uk/services/hr/athena-swan/>

Informal Enquiries

Informal enquiries should be made to Dr Byron Mason by email at b.mason2@lboro.ac.uk.

Applications

The closing date for receipt of applications is 13 October 2017.