Wolfson School of Mechanical, Electrical and Manufacturing Engineering

Loughborough University

SENIOR RESEARCH ASSOCIATE

THERMOFLUIDS AND PROPULSION SYSTEMS

Job Ref: REQ16793

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

Project Description

This is an exciting opportunity for an innovative senior researcher to join a strong group investigating and developing thermofluids technologies, including those for improving engine/propulsion/energy systems' performance, fuel economy, emissions and sustainability. The work will involve working with major international engine/vehicle manufacturers. The primary role is to develop new lines of research and to support existing activities under the overall direction of Professor Colin Garner FREng.

This senior post will be particularly suitable for those wishing to develop a strong research portfolio and gain advanced experience for a longer-term academic or industrial research career.

The Senior Research Associate will be primarily based in the Wolfson School of Mechanical, Electrical and Manufacturing Engineering, with some laboratory work conducted elsewhere at the University and at collaborating organisations. Loughborough University has outstanding research facilities for optical engineering, thermofluids and IC engine research including a modern fully equipped engine powertrain laboratory comprising 8 test cells.

Job Description

Job Grade: Specialist and Supporting Academic (Research) Grade 7

Job Purpose

The Senior Research Associate will be responsible for developing, managing and conducting research work into thermofluids, engines, and other related projects.

Job Duties

Research

- To provide leadership to research projects, including day-to-day management and coordination of the research activities.
- To help investigate, formulate and develop new lines of research and support new research grant applications.
- To manage, develop and conduct scientific and technological research into thermofluids, engine/propulsion/energy systems' and related systems as part of research projects at Loughborough.
- To be responsible for managing, developing and conducting research involving the measurement, design, procurement of parts and instrumentation, building, testing of specialised rigs.
- To lead in the conducting of analysis of data and, where appropriate, modelling.
- To manage and assist in other related engineering research projects as required.

- To lead and conduct literature reviews, to lead the writing-up of technical reports and technical papers for publication of the results obtained and the generation of research posters and other publicity media.
- To lead presentations at wide-ranging dissemination events, which are aimed at a range of external organisations and stake-holders.
- To plan, manage and conduct the work to agreed dead-lines.
- To manage, set and monitor budgets with respect to expenditure on staff, equipment, consumables and travel and ensure timely reporting and invoicing to collaborators and sponsor in accordance with the project plan.
- To supervise, guide and train postgraduate research students and Research Associates.
- To develop new lines of research and lead the writing of research proposals.
- To manage the relationship with research sponsors. To ensure that project teams maintain effective close contact with research sponsors.
- To support the planning and delivery of industrial and academic training courses.
- To maintain confidentiality where appropriate and to ensure that intellectual property (IP) agreements are met.
- To monitor and report on all Health, Safety and Environmental aspects of the research activities of the project.
- 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 Senior Research Associate will 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.
- 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 Professor Colin Garner.

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	The conducting of substantial original research that can be, or has been published in high quality journals	1,3
	Extensive research experience	1
	Extensive experience of advanced measurement techniques	1,3
	Extensive project planning experience	1,3
	Extensive experience with the analysis of quantitative experimental data	1,3
	Experienced IT/ Internet user	1,3
Skills and abilities	Demonstration of excellent technical ability	1,2,3
	Excellent inter-personal and communication skills – both written and oral	3
	Excellent team-working team-motivating skills	3
	Excellent research paper or report writing skills	1,3
	Highly-motivated with the ability to set and meet deadlines for themselves and others appropriate to the progress of the project	1,3
Training	Demonstrate evidence of having undertaken further training	1,3
Qualifications	A doctorate (eg PhD or EngD) in a relevant subject or extensive equivalent experience in an intensive advanced research environment	1
Other	Evidence a good working knowledge of equal opportunities and understanding of diversity in the workplace	3
	Willingness to travel	3

Desirable Criteria

Area	Criteria	Stage
Experience	Equipment purchasing/budgeting	1,3
	Project management/leadership experience	1,3
	Experience in computer aided design techniques for mechanical systems	1,3
	Experience with modelling techniques and experimental instrumentation	1,3
Skills and abilities	Good knowledge of engines/propulsion/energy systems and related technology and systems	1,3
	Strong track record in originating and developing new ideas	1,2,3
	Relevant industrial experience	1,3

	Strong demonstrable interest in automotive and IC engine product development	1,3
	Interest in fluid flow and combustion measurement techniques	1,3
Qualifications	Relevant postgraduate research qualifications or industrial experience in any one of the following areas: 1. optical measurement techniques; 2. fluid flow or combustion; 3. chemical processes or process plant; 4. IC engines or gas turbines; 5. Energy systems; relevant subjects in physics, materials science or chemical engineering	3
Other	Licensed for driving in the UK	3

Conditions of Service

The position is FULL TIME and FIXED TERM for 36 months. Salary will be on Specialist and Supporting Academic (Research) Grade 7, £39,324 to £41,709 per annum, at a starting salary to be confirmed on offer of appointment. The appointment will be subject to the University's normal Terms and Conditions of Employment for Academic and Related staff/Operational and Administrative 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 Professor Colin Garner FREng by email at C.P.Garner@lboro.ac.uk or by telephone on +44 (0)1509 227527.

Applications

The closing date for receipt of applications is **12 December 2017.** Interviews will be held on **11 January 2017**.