

RESEARCH ASSOCIATE IN ENERGY STORAGE AND POWER ELECTRONICS

Job Ref: REQ17743

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

The Centre for Renewable Energy Systems Technology (CREST) is looking for a researcher to help with an EPSRC funded Energy storage based project.

Job Description

Job Grade: Specialist and Supporting Academic Grade 6

Job Purpose

The work is a research-based post looking into energy storage in a smart grid context. The work focuses on the design, build and testing of hybrid and second life battery energy storage systems. The post will be located within CREST and at Willenhall. The post holder will be responsible for research into the use of battery systems on the electrical grid, including remanufacturing issues such as sorting and grading the battery packs, detailing the protection of, design and control of these systems. The work includes hardware commissioning and testing of a second life battery system based at Willenhall Energy storage site. Some bespoke hardware has been manufactured for the project and this is installed but not operational. There will be the requirement for some bespoke hardware development.

Job Duties

To undertake research into energy storage systems on the smart grid, with specific tasks to include:

- To research second life battery remanufacturing including grading and sorting;
- To research battery hybrid systems;
- To undertake the design of and coding of control systems to control a three level cascaded dc-dc converter connected to a hybrid second life battery system;
- To specify the safety system inter-tripping and build additional hardware around this;
- To commission the Willenhall hardware system to allow second life batteries to be charged and discharged up to 50kW;
- To develop and test mechanisms for on-line monitoring of the batteries to help with the control system;
- Preparing, writing and submitting publications for high-quality academic and practitioner journals and conferences;
- Delivering research presentations on the work at academic conferences.

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 Dr D Strickland.

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	Experience in power electronics hardware and control	1,2,3
	Experience of energy storage and on-line monitoring	1,2,3
Skills and abilities	Proficient user of Excel, Matlab/Simulink.	1,2,3
	Well-developed interpersonal and team-working skills	2,3
	Ability to write papers and reports and to give presentations to large and small groups	1, 3
	Good communication skills to relay work in spoken and written media.	2,3
Training	Formal training of the safety required around an 11kV site	1,3
Qualifications	PhD either awarded or close to being awarded in the area of energy storage connected power electronics	1,3
Other	A good working knowledge of equal opportunities and understanding of diversity in the workplace	3
	Commitment to maintain confidentiality at all times	3
	Willingness to travel	3

Desirable Criteria

Area	Criteria	Stage
Experience	Experience in cascaded dc/dc converter systems	1,2,3
	Experience in stability analysis	1,2,3
	Experience of working with battery manufacturers/suppliers/end users	1,2,3
	Experience of presenting work at conferences	1, 3
Skills and abilities	Ability to assist in teaching of undergraduate or postgraduate students	1,3
	Working knowledge of OPAL RT systems	3

Conditions of Service

The position is full time and fixed term for 12 months (or until 29 September 2020, whichever is soonest). Salary will be on Specialist and Supporting Academic Grade 6, (£29,301-£38,183) 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, 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 Dani Strickland, Senior Lecturer, CREST by email at d.strickland@lboro.ac.uk or by telephone on 0789 180 6767

Applications

The closing date for receipt of applications is **10 September 2017**.

Interviews will be held within two weeks of the closing date.