Loughborough Design School

RESEARCH ASSOCIATE
User Requirements for Domestic Hot Water and Thermal Storage
Fixed-term until 31 December 2018

Job Ref: REQ17079

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

School/Department summary

Loughborough Design School, which is located in a £21million state-of-the-art building, brings together teams of staff with world leading reputations for their research, teaching and wider stakeholder collaborations.

Job Description

PROJECT: i-STUTE

i-STUTE is an interdisciplinary centre for Storage, Transformation and Upgrading of Thermal Energy. The research Centre is funded through the UK Research Councils' Energy Programme. It is a £5.3M project that is developed over 5 years (2013-2018) involving four Universities and an external academic, private and governmental organisation network. It develops technologies that aim to reduce energy consumption and deliver cost-effective heating and cooling which will help the UK achieve its target of a reduction in greenhouse gas emissions of 80% by 2050.

Partners: Warwick University, Loughborough University, University of Ulster, London South Bank University

Project Information

i-STUTE brings together cutting-edge engineering advances with economic, behavioural and policy expertise to produce solutions that are both technically excellent but also appealing to business, end-users, manufacturers and installers.

The project's key objective relevant to this post is:

- To understand how economic, business and behaviour factors influence the introduction and uptake of new heating and cooling technologies, integrating the business, policy and consumer behaviour expertise with science and technological capability within the Centre. This will allow us to develop 'Integrated solutions' that can reduce the emissions due to a range of heating and cooling applications to the levels demanded by 2050.

A series of studies have already been undertaken and this role includes development of the collected and analysed data to publication. Additional research is also expected to form part of the role, building on the project's existing research.

PROJECT: 4S-DHW

4S-DHW (Small, Smart, Sustainable Systems for Domestic Hot Water is a new project that builds on the research undertaken in i-STUTE (and includes several of the same partners)

Partners: Warwick University, Loughborough University, University of Ulster

Background

The purpose of the project is to address the challenge of providing domestic hot water (DHW) using low carbon heat pump technology given the overwhelming trend away from conventional hot water tanks in homes and the inability of present heat pumps to provide instant hot water. We intend to develop a suite of heat pump / storage / control technologies, using either electricity or gas that function without conventional storage cylinders and can deliver energy efficient affordable hot water to a wide range of dwellings well into the future.

To bring this all together into a range of integrated systems suited to different housing types etc, there needs to be both an understanding of the consumer's needs and preferences plus a smart adaptive control system. Consumer preferences will be investigated by the use of appropriate methods carried out by the post holder, to gather the data required to specify requirements and determine constraints. Colleagues at Ulster will assume overall responsibility for sensor choice, control hardware and software. They will devise a system controller that adapts to and meets consumer needs in an optimal way. There are seven work packages, each with their own objectives. The objectives relevant to this post are:

- To establish a set of 'standard' DHW draw off patterns and a set of 'real and extreme' draw off patterns (based on highly monitored house data provided by partners) that will be a part of the specification.
- To determine consumer preferences and attitudes to issues such as space taken up by systems, capital and running costs, response time, etc.

The post holder will be expected to work with colleagues from the School of Civil and Building Engineering and the Centre for Renewable Energy Systems Technology, at Loughborough University, as well as the other project partners, who will provide support with the technical aspects of the research.

Please note, an enhanced Disclosure and Barring Service (DBS) check may be required for this post.

Job Grade: **Specialist and Supporting Academic Grade 6**

Job Purpose

A Research Associate is required by the School's User Centred Design Research Group to work across two Research Council projects, i-STUTE and 4S-DHW on a 50/50 basis for 18 (tbc) months to research the user requirements for domestic hot water and thermal storage.

Job Duties

The main duties of the successful applicant will be:

1. To design, organise and undertake research for the i-STUTE and 4S-DHW projects. Specifically:
   a. to develop methods to understand householders' requirements for hot water for 4S-DHW;
   b. to analyse existing i-STUTE data on hot water storage and develop new research information through qualitative fieldwork to further our understanding of householders' requirements for domestic thermal energy storage.
2. To author original work for submission to peer-reviewed journals; to produce project summaries suitable for lay audiences.
3. To prepare reports and papers for presentation at national and international conferences and meetings.
4. To work with the other members of the research team when appropriate.
5. To be aware of and comply with, research governance and data protection legislation; and to ensure that research activity, data collection and management comply with these demands.
6. To attend meetings and other events appropriate to the projects and give progress reports as required.
7. In collaboration with senior staff, to identify and undertake a programme of professional development, including further training in research methods and other transferable skills as required.

8. To carry out specific other duties as may be reasonably requested by the project leader and that are commensurate with the nature and grade of the post.

Other:

- 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
- To review on a continuous basis relevant developments reported in the scientific and technical literature.
- To pursue excellence and maintain high standards of safety in all activities.

General and administrative:

- To work effectively with relevant administrative, technical and academic staff in the Department and across the University.
- To engage in training programmes in the University (e.g. through Staff Development) which are consistent with your needs and aspirations and those of the project team and the host department.
- To carry out specific other duties as may be reasonably requested by the project leader 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.

Organisational Responsibility

Reports to Dr Victoria Haines, Principal Investigator

Person Specification

Your application will be reviewed with respect to meeting the essential and desirable criteria listed below. 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
Education and Qualifications	A good first degree in a relevant discipline	1
	A PhD or post-graduate research experience applying user centred methods or in a socio-technical area	1
Experience	Experience of collecting and analysing qualitative data	1,3
	Experience of conducting research into energy demand	1,3
	Experience of user centred design methods including surveys and interviews	
	Experience of interacting with users in a research context	1,3
	Authoring original work for academic journal papers, conference papers or technical reports	1,3
Skills, Abilities and Knowledge	Excellent written and oral communication skills	1,3
	Self-motivated with ability to meet deadlines	1,3
	Ability to work independently and as part of a team	1,3
	Excellent interpersonal, and organisational skills	1,3
	Ability to deal with demands from multiple tasks/projects	1,3
	Good analytical and IT skills	1,3
Training	Willingness to undertake appropriate further training and to adopt new procedures as and when required.	1,3
Equality and Diversity	Evidence a good working knowledge of equal opportunities and understanding of diversity in the workplace	1,3
Other	Willingness to travel	1,3
	Commitment to maintain confidentiality at all times	1,3

Desirable Criteria

Area	Criteria	Stage
Experience	Experience of working with others in a research context	1,3
	Experience of interacting with householders in a research context	1,3
	Experience of cross-disciplinary research	1,3
Skills, Abilities and Knowledge	Knowledge of current UK Government policy in housing energy demand	1,3

	Knowledge of relevant ethical issues	1,3
	Knowledge of relevant Health & Safety issues	1,3
Other	Valid licence for driving in the UK	1,3
	Able and willing to work evenings away from the University	1,3

Conditions of Service

The position is FULL TIME and fixed term for until 31 December 2018. Salary will be on Specialist and Supporting Academic Grade 6, £29,301 per annum.

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 are welcomed and should be directed to Dr Victoria Haines on +44 (0)1509 226915 or e-mail V.J.Haines@lboro.ac.uk

Applications

The closing date for receipt of applications is **28 February 2017.**