

Research Associate - Purification and processing of gypsum from end-of-life plasterboard

Fixed term for 36 months in the first instance

REQ200430

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

About the School of Architecture Building and Civil Engineering

Research and teaching in the School of Architecture Building and Civil Engineering is driven by 80 academic staff, 34 technical and clerical support staff, 40 contract researchers and over 120 doctoral students. The School benefits by having academic staff from a wide variety of backgrounds, with a resulting rich diversity of perspectives.

The undergraduate programmes include Architecture, Civil Engineering, Construction Engineering Management, Commercial Management and Quantity Surveying, Architectural Engineering and Design Management, Air Transport Management, and Transport and Business Management. In all courses, the academic content is directly aligned to the needs of the industry and there is a high level of sponsorship in our portfolio of programmes. Our record of graduate employment is second to none and we have been ranked 1st or 2nd in the National Student Survey for the last 6 years. Further information is available at:

<http://www.lboro.ac.uk/departments/abce/>

In the 2014 Research Excellence Framework, the School was ranked fifth in the Architecture and Built Environment Unit of Assessment with 87% of the work judged as either "world leading" or "internationally excellent". Importantly, this was achieved whilst still returning 100% of staff; world class research pervades the School. The research environment was ranked first overall; Loughborough is the best place in which to build a career in energy research.

The School of Architecture, Building and Civil Engineering has participated in twenty seven European projects in several areas including Environment, ICT, Security, Capacities, and NMP.

The international standing of our research is exemplified by our growing portfolio of collaborations with other leading universities and research institutes worldwide. These include: the UNSW Sydney, University of California at Berkeley, MIT, Chongqing, Hong Kong, Iowa State, Oklahoma State, RMIT, Georgia State and Penn State.

We are equally proud of our collaborations with industry where we count organisations such as Willmott Dixon, *Electricite de France*, The BRE, Honeywell, Anglia Water and Biffa. Built Environment research is increasingly informing government policy through, for example, the Department for Business, Energy and Industrial Strategy and The Committee on Climate Change. For more on our research go to:

<http://www.lboro.ac.uk/departments/abce/research/>

The ICEBERG Project

The ICEBERG (Innovative Circular Economy Based solutions demonstrating the Efficient recovery of valuable material Resources from the Generation of representative End-of-Life building materials) project, which is composed of 35 partners from 10 EU countries, has been funded by the European Commission in response to H2020-SC5 funding call on 'recycling of raw materials from buildings'.

The project aims to design, develop, demonstrate and validate advanced technologies for the production of high-

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purity secondary raw materials through 6 circular large-scale demonstrations across Europe, covering the recovery and circularity of wood, concrete, mixed aggregate, **plasterboard**, glass, polymeric insulating foams and inorganic superinsulation materials. The successful candidate will be part of a multi-disciplinary European team with an extensive research portfolio and world-leading expertise in resource recovery systems from end-of-life building materials.

Job Description: Purification and processing of gypsum from end-of-life plasterboard

Job Grade: Specialist and Supporting Academic Grade 6 Job Purpose

The Research Associate will be responsible for the design and execution of an experimental programme for the purification and processing of gypsum from end-of-life plasterboard in collaboration with ENVA (a leading provider of plasterboard resource recovery solutions in the UK) and the development of a pre-industrial prototype of high-purity recycled content plasterboard in collaboration with British Gypsum (the UK's leading manufacturer of plasterboard).

Job Duties

Research

- Lead the experimental development, assessment and validation of the laboratory process to purify gypsum from end-of-life plasterboard.
- Lead the chemical and physical characterisation of waste gypsum before and after the purification treatment.
- Lead the design and installation of a small-scale laboratory purification treatment facility of waste gypsum.
- Collaborate with ENVA (plasterboard recyclers) in the pilot application of the treatment developed for the purification of waste gypsum.
- Collaborate with British Gypsum (plasterboard manufacturer) in the development of a pre-industrial prototype of high-purity recycled content plasterboard.

General and administrative

- Formulate detailed experimental schedules.
- Maintain a sound and up to date knowledge of lab-related research methods relevant to the post.
- Prepare project reports following the project milestones and deliverables.
- Maintain and enhance close relationships with project partners.
- Attend and present work at project meetings in partners' EU countries.
- Package all data sets in a form suitable for open-access sharing.
- Publish research papers related to end-of-life gypsum purification and optimisation process in high-quality academic journals and present papers in international conferences.
- Contribute to project promotion and public engagement events.
- Ensure health and safety requirements are met for all activities.

Other related duties

- Work effectively with relevant administrative, technical and academic staff in the School and across the University.
- Engage in training programmes at the School and University as and when required.
- Carry out other specific duties as may be reasonably requested by the School and project leaders 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 Prof Mohamed Osmani and Prof Sergio Cavalaro

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 – Presentation
- 3 – Interview

Essential Criteria

Area	Criteria	Stage
Experience	Current or past work on development of experimental methods applied to material treatment and/or recycling.	1,2,3
	Knowledge of methods for chemical and physical characterisation of materials.	1,2,3
	Coordination and management of project activities.	1,3
Skills and abilities	Excellent knowledge of quantitative and experimental research methods.	1,2,3
	Excellent interpersonal and organisational skills.	1,2,3
	Ability to author original work destined for high quality journals.	1,3
	Ability to work independently and as part of a team.	1,3
	Ability to write project reports and make technical presentations to industrial and academic research groups.	1,2,3
	Knowledge of relevant Health & Safety issues.	3
Training	Willingness to undertake appropriate further training and to adopt new procedures as and when required.	1,3
Qualifications	A good degree in chemistry, material science or related field.	1
	A PhD and/or equivalent industry expertise.	1
Other	Commitment to observing the University's Equal Opportunities policy at all times.	3
	Willingness to travel within Europe.	3

Desirable Criteria

Area	Criteria	Stage
Experience	Research experience in resource recovery from end-of-life building materials.	1,2,3
	Experience in upscaling laboratory-scale processes into industrial pilot applications	1,2,3
	Research experience in EU projects.	1,2,3
	Securing external research funds.	1,2,3
Skills and abilities	A strong publication track record in material characterisation and/or material purification.	1,3
	Knowledge of experimental methods for end-of-life plasterboard recovery or treatment.	1,2,3

Conditions of Service

The position is full-time and fixed term for 36 months. Salary will be within Specialist and Supporting Academic Grade 6, £30,942 to £40,322 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/leave-absence/family-leave/>

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/>

Applications

The closing date for receipt of applications is **31 July 2020**.