

**Job Description**

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| Job Title: | Research Assistant |
| Faculty/Department: | Chemical Engineering – School of Engineering and Computer Science |
| Reporting to: | Dr Vasiliki K. Skoulou, Lecturer in Chemical Engineering |
| Duration: | Fixed Term (12 months) 100% FTE |
| Job Family: | Academic |
| Pay Band: | 7 |
| Benchmark Profile: | Research Band 7 |
| DBS Disclosure requirement: | N/A |
| Vacancy Reference: | FS0341 |

**Details Specific to the Post**

**Background and Context**

**Are you an ambitious and experienced Chemical Engineering researcher looking for your next biomass/waste-bioenergy challenge? Do you want to further your research career in the UK’s Energy Estuary of Hull and Humberside and specifically in Hull University?**

The School of Engineering and Computer Science (SoECS) at the University of Hull is a large size academic unit with a focus on Chemical Engineering, Electrical/Electronic Engineering, Mechanical Engineering, Medical Engineering and Computer Science. The School has a long history of delivering MEng, BEng, BSc programmes accredited by IET, IMEchE and BCS. Chemical Engineering was launched 5 years ago and has established a strong student population gaining accreditation in 2017. This post is aimed at supporting the School to expand our research profile within Chemical Engineering. The post holder would be expected to have publications track record, have proven research expertise supported by internationally recognised publications and experience of building successful research teams.

**Specific Duties and Responsibilities of the post**

Applicants of outstanding experience are sought for the post of the Research Assistant in Chemical Engineering, to be employed in Chemical Engineering subject at the School of Engineering and Computer Science at Hull University. The successful candidate will carry out high-quality experimental work to assess, evaluate, integrate, develop and improve the solid fuels pre-treatment method of leaching with the novel microwave extraction techniques in order to optimise the lignocellulosic biomass/waste behaviour when those solid waste are to be used as alternative solid fuels in thermochemical treatment reactors (pyrolysers, gasifiers).The post is funded by the EPSRC First Grant-2009 Revised Scheme entitled “*Microwave assisted pre-treatment of lignocellulosic residues for better performance as solid fuels in fluidized bed (FB) energy production technologies*”, lead by the PI Dr V.K. Skoulou, Lecturer in Chemical Engineering. By combining experimental methods, the project will obtain an understanding of the relationship between the alternative solid fuels pre-treatment processes and impact to bioenergy production via the thermochemical route.

The successful applicant will be responsible for the realisation of this a novel combination of alternative solid fuels traditional pre-treatments and upgrading techniques and for conducting experimental work in lab scale facilities and analytical equipment to develop suitable methodologies, aiming not only to optimize the specifications of the alternative solid fuels (biomass residues/waste), but also to characterise and evaluate their thermochemical break down behaviour under pyrolysis/gasification environments and to address the challenges for future development of a sustainable, practical and affordable pre-treatment method for exploitation of such fuels at industrial scale.  
  
You will have an awarded PhD in Chemical Engineering or Chemistry with a proven track record of publications and presentations in prestigious international journals and conferences in the field, and a proven track record of a post-doctoral-level experience of at least of these areas: lignocellulosic biomass /waste pre-treatment, solid fuels, microwave chemistry and thermochemical treatments (gasification and/ or pyrolysis) of solid waste.

This is a challenging and exciting Chemical Engineering laboratory based research project for a highly motivated and experienced candidate in: biomass waste thermochemical treatments,  microwave chemistry, alternative solid fuels pre-treatment, and bioenergy with experience who is aiming to work at the interface of solid fuels pre-treatment and  energy generation engineering via the thermochemical route and will also have extensive experience in the characterization of biomass/ waste, solid fuels and liquids by products  by means of various analytical techniques, including thermogravimetric analysis (TGA) and other analytical lab techniques.

You will have excellent and proven chemical engineering laboratory and team working skills as well as verbal and written communication skills and maintain links with other professional institutions and/or with our industrial partners to fulfil the requirements of this role. Communication skills, particularly a demonstrated ability to publish in prestigious international scientific journals is essential. An ability to conduct original experimental research independently and within a team, and to carry out sound judgement of research tasks are also essential. You will also have the ability to plan ahead and monitor  the work under this project, manage and conduct laboratory research independently, work with colleagues on joint projects as required and contribute to the B3 Challenge Group lead by Dr V.Skoulou  and team members supervision of research projects, as well as assess the research students’ knowledge,  supervise and guide final year students' research works  in the field and participate in Health and Safety Training and other relevant training for optimising your research skills development  for supporting these activities at the University of Hull. Candidates who have experience of working in a multidisciplinary projects and working with industry will be particularly welcome.

For informal enquiries please contact:  Dr Vasiliki K Skoulou ([v.skoulou@hull.ac.uk](mailto:v.skoulou@hull.ac.uk))  Lecturer in Chemical Engineering  and Principal Investigator of the  B3 Challenge Group: Biomass-Bioenergy- Biomaterials.

If you have ambition to build your own reputation through research in the biomass- waste/bioenergy field a good publications record and participation in conferences, then we would like to hear from you.

Please note the latest start date for this role is **1 May 2018, it is full time and fixed term for 12 months**

Interviews are anticipated to be held on the second week of **March 2018**

**The University of Hull is committed to ensuring equality of opportunity in every aspect of our recruitment processes.**

**Hull will be UK City of Culture in 2017. The University of Hull was part of the City of Culture team throughout the bidding process and remains a key player in Hull’s cultural heritage. The campus will be the venue for City of Culture events, and its alumni, students and staff will be personally involved.**

**GENERIC JOB DESCRIPTION**

The job duties and responsibilities listed below are intended to describe the general nature of the role. The duties and responsibilities and the balance between the elements in the role may change or vary over time depending on the specific needs at a specific point in time or due to changing needs in the department. Candidates should note that there may not be an immediate requirement to carry out all the activities listed below.

### Overall Purpose of the Role

The researcher at this level will be:

* An experienced and professional researcher and will be a subject specialist, drawing upon knowledge gained from postgraduate research and/or working within a Research Band 6 role.
* Associated with a particular project (or projects) and will contribute ideas, and/or enhancement of techniques or methodologies and be expected to take significant initiatives in their work and consult with the Principal Investigator over the details of the project. They will work under supervision and receive academic, pastoral support and guidance which may include specific training, career opportunities and mentoring.

They may contribute to the Department’s teaching, through supervision of projects, overseeing practical classes, or taking small group tutorial classes.

The main focus of the work will involve conducting individual and collaborative research projects under the general guidance of a senior academic or Principal Investigator using new research techniques and methods, analysing and interpreting data and writing up research for publication.

**Main Work Activities**

1. Conduct individual and collaborative research projects to include:

* Using expertise to carry out projects they are working on.
* Contribute to the preparing proposals and applications for external bodies, e.g. for funding and contractual purposes with appropriate support or contribute to the writing of collective bids.
* Use new research techniques and methods.
* Analyse and interpret research data.
* Write up research work of the project and its dissemination through seminar and conferences presentations and publications.

1. Responsible for the management of projects to include:

* Plan and manage own research activity in collaboration with others.
* Manage administrative activities with guidance if required.
* Plan and monitor the work of the project or projects if applicable.

1. Assist with teaching and learning support in own area of study to include:

* Assist in the development of student research skills.
* Assess student knowledge and supervision of projects.
* Supervise and guide final year students.

1. Develop and initiate collaborative working internally and externally to include:

* Build internal contacts and participate in internal networks for exchange of information and to form relationships for future collaboration and to progress their research.
* Develop links and join external networks to share information and identify future potential sources of funding.
* Work with colleagues on joint projects as required.
* Attend and contribute to relevant meetings.

1. Demonstrate evidence of own personal and professional development to include:

* Continually update knowledge and understanding in field or specialism.
* Appraisal, induction and performance reviews.
* Participate in training and development activity.
* Maintain links with professional institutions and other related bodies.
* Collaborate with academic colleagues on areas of shared research interest.

### Additionally the post holder will be required to:

* Fulfil the employees’ duties described in the University’s health and safety policies and co-operate with the health and safety arrangements in place within the department. May be required to undertake specific health and safety roles on request e.g. Display screen equipment assessor, departmental safety officer, fire warden etc.
* Show a commitment to diversity, equal opportunities and anti-discriminatory practices this includes undertaking mandatory equality and diversity training.
* Comply with University regulations, policies and procedures.

**PERSON SPECIFICATION – Research Band 7**

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| **Specification** | **Essential** | **Desirable** | **Examples Measured by** |
| **Education and Training**  Formal qualifications and relevant training | * A PhD in Chemical Engineering and or Chemistry but in a closely related field. | Previous experience in working as a Research Associate in the field | Application  Interview  Other |
| **Work Experience**  Ability to undertake duties of the post | **Evidence of:**   * A proven track record in solid fuels biomass-bioenergy research field, including scientific publications, presentations at scientific conferences and contributing to grant applications | Experience of undergraduate –post graduate teaching | Application  Interview  Other |
| **Skills and Knowledge**  Includes abilities and intellect | **Evidence of:**   * Participation in networks that seek to promote research collaboration * Effective management of resources Contribution to the supervision of undergraduate project, masters or PhD students | Experience of completing professional quality deliverables to schedule. | Application  Interview  Other |
| **Personal Qualities**  Includes any specific physical requirements of the post – (subject to the provisions of the Equality Act 2010) | * An expectation to positively contribute to University activities and initiatives which may include open days, graduation ceremonies, etc., and have a willingness to undertake administrative activities * Show evidence of collaborative working, particularly on interdisciplinary activities * Evidence of working in an open and transparent way, providing information and communicating effectively with colleagues * Evidence of Continuous Professional Development |  | Application  Interview  Other |