

Candidate Information

Position:	Research Fellow - Heterogeneous Catalysis
School/Department:	Chemistry and Chemical Engineering
Reference:	21/108690
Closing Date:	Monday 12 April 2021
Salary:	£33,797 per annum
Anticipated Interview Date:	Thursday 22 April 2021
Duration:	This is a fixed term contract for 3 years or until 29 February 2024 (whichever is soonest)

JOB PURPOSE:

We are seeking to recruit a highly motivated and enthusiastic postdoc for a period of up to 3 years. The researcher will perform catalytic production of advanced biofuels and renewable chemicals to facilitate UK's 2050 net zero emissions target. This is a fantastic opportunity for the researcher to work within a vibrant multidisciplinary environment, interacting with colleagues from Chemistry, Chemical engineering, Computational simulations as well as interact on regular basis with our collaborators from refinery and renewable energy companies.

MAJOR DUTIES:

1. To prepare heterogeneous catalysts and evaluate these systems for the upgradation of biomass to biofuels and chemicals under batch and continuous flow conditions.
2. To work with the collaborators within the consortium.
3. Participate in the development of the research strategy for within the research group.
4. Preparation of reports, presentations and research/journal papers and assisting in supervision of PhD/MEng students.
5. Develop and plan an area of personal research and expertise, and/or undertake research under supervision within a specific research project or as a member of a research team.
6. Design, develop and refine experimental apparatus, field research or experiments in order to obtain reliable data.
7. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to area of research.
8. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
9. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
10. Assist grant holder in the preparation of funding proposals and applications to external bodies.
11. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
12. Carry out occasional undergraduate supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
13. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

Planning and Organising:

1. Plan for specific aspects of research programmes. Timescales range from 1-4 weeks in advance and contribute to research group planning.
2. Plan for the use of research resources, laboratories and workshops where appropriate.
3. Plan own day-to day activity within framework of the agreed research programme.
4. Plan up to a year in advance to meet deadlines for journal publications and to prepare presentations and papers for conferences.

5. Coordinate and liaise with other members of the research group over work progress.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and any students who may be assisting with research.

Internal and External Relationships:

1. Liaise on a regular basis with colleagues and students.
2. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
3. Join external networks to share information and ideas.
4. Contribute to the School's outreach programme by establishing links with local community groups, industries etc.

ESSENTIAL CRITERIA:

1. Have or be about to obtain a PhD in Chemistry or Chemical Engineering or a related subject.
2. BSc (Hons) or equivalent in Chemistry or Chemical Engineering or related subject.
3. At least 3 years recent relevant experience to include:
 - Proven experimental experience in heterogeneous catalysis for gas/liquid phase reactions at postgraduate or postdoctoral level.
 - Demonstrable experience in proving a design, construct and refine of the experimental rig using pumps, mass flow controllers and back-pressure regulators.
4. Publication record commensurate with stage of career.
5. Ability to contribute to broader management and administrative processes.
6. Contribute to the School's outreach programme by links with industry, community groups etc.
7. Proven ability to assess and organise resources to ensure delivery to project milestones.
8. Proven ability to prepare high quality journal and conference papers.
9. Good written and verbal communication skills.
10. Proven ability to communicate complex information clearly.
11. Proven ability to build contacts and participate in internal and external networks.
12. Demonstrable intellectual ability.
13. Proven ability to work effectively within a team.
14. Willingness and availability to work for periods in other laboratories including industrial laboratories.
15. Willingness and availability to travel and work in other locations in the UK.

DESIRABLE CRITERIA:

1. Demonstrable experimental experience of catalytic production of biofuels and fuel-additives using feedstocks such as biomass, sugars, oils and volatile fatty acids, CO₂ including process development, catalyst synthesis, characterisation and analytical methods.
2. Demonstrable experience in liquid phase hydrogenation /hydrodeoxygenation reactions.
3. Demonstrable experience in use and operation of continuous flow reactors and in-line reaction monitoring techniques.
4. Demonstrable experience of working with an industry partner eg a technology Company.
5. Willingness to carry out occasional teaching/supervision duties under the direct guidance of a member of academic staff.