

Candidate Information

Position:	Research Fellow in Spatially Resolved Techniques for Catalysis
School/Department:	School of Chemistry and Chemical Engineering
Reference:	20/108534
Closing Date:	Monday 1 February 2021
Salary:	£33,797 to 35,845 per annum
Anticipated Interview Date:	Wednesday 17 February 2021
Duration:	2 years

JOB PURPOSE:

This 24-month post is related to a newly funded EPSRC grant application – Nitridic and Carbodic Interstitial Pd Nanoparticles for Directed Catalysis. This is an interdisciplinary partnership between researchers at the University of Southampton (Dr Peter Wells, Dr Marina Carravetta, and Prof. Chris Skylaris), Queen's University Belfast (Prof. Alexandre Goguet), and the University of Glasgow (Dr Emma Gibson). The aim of the project is to understand how the dynamic nature of Pd nanoparticles, and their ability to form interstitial structures, can be exploited for enhanced catalysis. The successful candidate is expected to be an active member of the project, assisting in the planning and delivery of the research activities in the area of spatially resolved investigations of heterogeneously catalysed reactions.

MAJOR DUTIES:

1. 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.
2. Design, develop and refine experimental apparatus, field research or experiments in order to obtain reliable data.
3. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to area of research.
4. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
5. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
6. Assist grant holder in the preparation of funding proposals and applications to external bodies.
7. 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.
8. 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.
9. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.
10. Organize and conduct visits to partner institutions relevant to their research project.

Planning and Organising:

1. Plan for specific aspects of research programmes. Timescales range from 1-6 months 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. BSc (Hons): at least 2:1 or equivalent in Chemistry or Chemical Engineering.
2. Have a PhD in Chemical Engineering or related discipline such as Chemistry, with hands-on Chemical Engineering experience.
3. At least 3 years relevant research experience.
4. Publication record commensurate with career.
5. Experience of designing and constructing thermal-chemical conversion reactors.
6. Experience of carrying out gas phase heterogeneous catalysis research.
7. Ability to contribute to broader management and administrative processes.
8. Ability to contribute to the research team's outreach activities.
9. Sufficient breadth and depth of specialist knowledge in reaction engineering applied to heterogeneously catalysed gas phase reactions.
10. Demonstrable ability to communicate complex information clearly.
11. Demonstrable ability to build contacts and participate in internal and external networks.
12. Demonstrable intellectual ability.
13. Demonstrable ability to assess and organise resources.

DESIRABLE CRITERIA:

1. Have published at least one first-author journal paper.
2. Have experience in the design, construction, and operation of spatially resolved experimental setup for the investigation of heterogeneously catalysed reactions.
3. Experience in XAS investigations of catalysts.
4. Have obtained awards of poster and/or oral presentation.