

Researcher Job Details

Research Assistant/Associate “Developing novel chemical looping processes for hydrogen production and carbon capture”

School of Engineering

Faculty - SAgE

Research Role Profile

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As part of our commitment to career development for research staff, the University has developed 3 levels of [research role profiles](#). These profiles set out firstly the generic competences and responsibilities expected of role holders at each level and secondly the general qualifications and experiences needed for entry at a particular level.

This research associate position is available in one of the leading chemical engineering groups in the UK led by Professor Ian Metcalfe, FREng. The group is currently home to around ten PhD students and five post-doctoral researchers and has excellent research facilities. The project is in the area of solid state oxygen carriers and their interaction with the gas phase, with the work focused on the use of chemical looping processes for reaction and separation. A key global challenge is reducing greenhouse gas emissions. Chemical looping offers the opportunity to produce hydrogen gas and simultaneously capture carbon dioxide, both key components of any industrial greenhouse gas reduction strategy.

Specific Responsibilities of Position

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1. Improve materials performance in chemical looping systems by investigating novel materials and structures
2. Carry out kinetic experiments
3. Develop a kinetic understanding of the relevant process
4. Aid in PhD student supervision
5. Assist with the day-to-day running of the lab
6. Write peer reviewed publications
7. Present research findings at national and international meetings

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Person Specification

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		Essential or Desirable
	Qualifications	
1	At least 2:1 Honours degree or equivalent in chemical engineering, materials science or related subject.	Essential
2	PhD awarded in chemical engineering, materials science or related subject or PhD submitted, awaiting award.	Essential
3		
	Knowledge, Skills and Experience	
1	Experience in at least one of the following: chemical looping, inorganic ion-conducting oxide membranes, synthesis, characterisation and application of metal oxides in chemical processes including the study of surface exchange and ion transport processes.	Essential
2	Ability to write in peer reviewed journals commensurate with experience.	Essential
3	Experience in materials characterisation (e.g., XRD, SEM-EDS, BET).	Desirable
4	Practical experience in chemical kinetics.	Desirable
5		
6		
	Attributes/Behaviours	
1	Hard working and able to take initiative.	Essential
2	Ability to work in a team.	Essential
3	A high level of technical competency.	Essential
4	Ability of original and creative thinking.	Essential
5	Very good laboratory skills.	Essential
6		

HR Office Use Only

SAP Position Number:

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Grade:	Choose an item.
Effective Date:	Click here to enter a date.