University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Postdoctoral Research Assistant in Metal Oxide Recycling	Job family and level	Research and Teaching Level 4/4A
School/ Department	School of Chemistry	Location	University Park Campus

Purpose of role

The purpose of the role is to work in the School of Chemistry on the dissolution and chemical transformation of metal oxides in sustainable solvents. The project will investigate the behaviour of metal oxide materials in alternative solvents such as ionic liquids and deep eutectic solvents, with the aim of developing greener approaches to metal processing, recycling, and materials chemistry.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	**To plan and conduct research in metal oxide processing with sustainable solvents:** ▪ Quantify and study the dissolution of metal oxides in ionic liquids and deep eutectic solvents with advanced analytical methods, including ICM-MS, XPS, and XAS. ▪ Study the electrochemical separation of solvated metals and quantify/test the isolated materials. Working in a team alongside an industrial collaborator to develop an integrated metal oxide recycling process	65%
2	**Write high quality scientific articles for publication in high-impact international peer-reviewed journals, including:** ▪ Sustainability focused publications reporting the developments carried out by the Research Fellow. Contributing the chemical state analysis to the research outputs of the wider multidisciplinary collaboration.	10%
3	**Identify and develop new directions for sustainable metal oxide recycling, including:** ▪ Working with external partners to align lab-based methods to their processing facilities.	10%

	Contribute to the preparation of new research proposals for submission to external funding agencies.	
4.	**Deliver presentations to disseminate findings to both internal and external audiences, including:** ▪ Participate in regular team meetings to share knowledge / skills and discuss ideas with colleagues. Disseminate work by contributing to external meetings and conferences, nationally and internationally, when possible.	5%
5.	**Provide support and participate in knowledge exchange with colleagues and students where appropriate, including:** ▪ Guidance to colleagues and instruction to students on sustainable solvents/analytical chemistry within the Research Fellow's own area of expertise. Training to assist colleagues and students in accessing and utilizing equipment effectively.	5%
6.	**Develop new relationships with academic collaborators as appropriate, including:** ▪ Identifying prospective new collaborative projects with external academic partners. Contribute proactively to advancing collaborative projects, liaising with academic collaborators.	5%

Person specification

	Essential	Desirable
Skills	▪ Excellent oral and written communication skills, including the ability to communicate complex scientific concepts in publications and presentations to internal and external audiences. ▪ Aptitude for analyzing spectroscopic data and handling large datasets ▪ Ability to play a leading role within a multidisciplinary team in the development of new research directions and managing collaborations with external partners.	▪ Ability to use advance processing software for chemical state analysis (XPS or XAS) including CasaXPS, Artemis, Athena.
Knowledge and experience	▪ Demonstrated track record of excellence in chemical state analysis with publications in peer-reviewed journals. ▪ Experience in analytical methods such as X-ray spectroscopies (XPS, XAS), inductively coupled plasma mass spectrometry, or electrochemical methods.	▪ Experience preparing, purifying, and handling ionic liquids or DES ▪ Record of working with external partners
Qualifications, certification and training (relevant to role)	• PhD or equivalent in inorganic or physical chemistry, OR near to completion of such a PhD.	

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

Valuing people	Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
Taking ownership	Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
Forward thinking	Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
Professional pride	Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
Always inclusive	Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others

Line manager

Role holder

Key stakeholder relationships