



Job title	Research Associate/Fellow in Nano-Electrocatalysis	Job family and level	Research and Teaching Level 4 (Appointment will be Level 4 Career training grade where an appointment is made before PhD has been completed)
School/ Department	Chemistry	Location	Chemistry Building, University Park, Nottingham, NG7 2RD

Purpose of role

The Metal Atoms on Surfaces and Interfaces (MASI) is a large-scale multidisciplinary project led by four UK universities (Nottingham, Cardiff, Cambridge, and Birmingham). The project aims to simultaneously address two major challenges: the sustainable use of metals and the development of low-carbon technologies. MASI is driven by the need to respond to both natural (limited resources of critical metals) and human-caused (overpopulation, global warming) threats that are increasingly impacting society. Through its multidisciplinary research approach, MASI seeks to stimulate innovation across various sectors and expedite the translation of fundamental discoveries into clean technologies, aligning with the ambitions of the EPSRC to achieve a Productive Nation, Resilient Nation, and Healthy Nation.

The project is comprised of four interconnected themes addressing the fundamental aspects of metal nanocluster formation (A), metal-support interactions (B), imaging and analysis of nanocatalysts in action (C), and harnessing their catalytic/electrocatalytic properties in key reactions. These include CO₂ electroreduction and hydrogen generation by electrolysis (D).

We are looking to appoint a postdoctoral researcher with a strong background in electrocatalysis to work on advancing the electrocatalytic conversion of CO₂ to methanol and other liquid products. The Research Associate/Fellow will be appointed for a one-year term and will focus on utilising the electrocatalytic properties of metal nanoclusters, gaining a comprehensive understanding of the reaction pathways, and designing electrocatalytic reactors. The Research Fellow will join the multidisciplinary MASI project team and the Nottingham Nanocarbon Group, led by Prof. Andrei Khlobystov.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	Electrocatalysis.	60%
2	Design and preparation of catalytic nanomaterials.	10%
3	Electron microscopy nanomaterials analysis.	10%
4	Correlating microscopy, electrochemistry and spectroscopy data.	10%

5	Writing progress reports.	10%
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Person specification

	Essential	Desirable
Skills	<p>Proven ability in innovative and effective experimental research in nanomaterials.</p> <p>Evidence of in-depth knowledge and experience in electrocatalysis for CO₂ reduction.</p> <p>Good knowledge and practical skills in advanced spectroscopy methods (e.g. NMR, MS, XPS) for nanomaterials analysis.</p> <p>Good practical knowledge of electron microscopy and software packages for micrograph processing.</p> <p>Excellent oral and written communication skills, including the ability to clearly convey complex information and write to a publishable standard.</p>	
Knowledge and experience	<p>High-level experience of electrochemistry.</p> <p>Publications in international peer-reviewed journals commensurate with stage of career.</p> <p>Experience of effective utilisation of shared/centralised research facilities.</p>	<p>Good knowledge of synthetic chemistry.</p> <p>Experience in (co)supervision of research students.</p>
Qualifications, certification and training (relevant to role)	A PhD in Chemistry, or studying towards a PhD in Chemistry	



The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.

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



