

Job Description

Research Associate in EPR and Magnetism of Molecular Spin Qubits	
Grade	6
Department	Chemistry
Overall Purpose	
Applications are invited for a 2.5-year postdoctoral research associate position for an outstanding and ambitious scientist to undertake research in the fields of EPR spectroscopy and magnetism of transition metal complexes and related systems used for quantum technologies. They will focus on measurement and modelling of low-valent d-block complexes with a variety of ligands, towards understanding their magnetic behaviours and quantum coherence properties, and relationships between molecular structure and magnetic property. The role involves collaboration with the University of Rhode Island (USA) under the project: <i>Pushing Boundaries in Molecular Design to Achieve Long-Lived Qubit Coherence</i>” co-funded by the US National Science Foundation and UKRI.	
About the Team	
The core team members are: Dr Floriana Tuna (Department of Chemistry at Manchester), an expert in inorganic chemistry, EPR spectroscopy and molecular magnetism, who supervises the project. The work is in collaboration with the UK National EPR Facility at Manchester (Prof. David Collison and Prof Eric McInnes), and with our project partner Prof Daniel Huh, University of Rhode Island (USA), an expert in low valent metal-organic chemistry.	
Key Accountabilities	
• Design, plan and perform experiments safely and expertly, including cw EPR, pulse EPR and SQUID magnetic measurements. • Analyse the data obtained from experiments and interpret the results to a high scientific standard. • Manage, risk-assess and conduct individual and collaborative research projects as appropriate. • Communicate complex information orally, in writing and electronically using a range of media. • Use initiative and creativity to develop new research objectives and proposals for own or joint research, with the assistance of a mentor if required. • Disseminate results via reports, oral and poster presentations, and by writing journal articles. • Liaise with colleagues and students, build external contacts, and participate in networking for the exchange of information and to form good relationships for future collaborations. • Be involved in the assessment of student knowledge and supervision of projects and assist in the development of student research skills. • Continually update knowledge and understanding in field or specialism, and translate knowledge of advances in the subject area into research activity. • Attend and contribute to relevant meetings and join external networks to share information and identify potential sources of funding. • Perform necessary administration and supervision tasks for the smooth running of research. • Contribute to collaborative decision making with colleagues in areas of research.	
Person Specification	

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Knowledge	Essential – Specialist knowledge of electron paramagnetic resonance (EPR) spectroscopy and/or magnetic measurements. Knowledge of electronic structure theory.
	Desirable – Knowledge of handling highly air-sensitive samples, using glove boxes, d/f element chemistry, characterising paramagnetic compounds, and of a variety of characterisation techniques and calculations.
Experience	Essential – Experience of performing cw or pulse-EPR spectroscopic measurements and/or magnetic measurements. Experience of analysis and modelling of experimental magnetic or spectroscopic data.
	Desirable – Experience of handling highly air-sensitive samples, using glove boxes, d/f-block chemistry, characterising paramagnetic compounds, and performing a variety of characterisation methods and calculations (e.g. DFT or CASSCF). Experience in electronic structure calculations. Experience of EPR spectra simulations using EasySpin or other suitable software. Electrochemistry. Transient/light-induced EPR.
Skills	Essential – Collection, interpretation, analysis and modelling of experimental data
	Desirable – Performing high performance computing calculations and interpreting computational data
Education	Essential – PhD or equivalent in Chemistry, Physics, or a related subject
	Desirable – Undergraduate degree or equivalent in Chemistry, Physics, or a related subject
Other	Essential – Excellent communication and interpersonal skills
	Desirable – Ability to write high quality scientific papers and proposals. Strong publication record.
Key Behaviours	
Service Excellence: Committed to prioritising service excellence and high performance to deliver great people-centred experiences. Working hard: Demonstrate a commitment to working hard and intelligently to achieve outstanding science. Sustainability: A sustainable approach that safeguards the University of the future by championing environmental practices, advancing digital capability, and supporting financial stability and philanthropic initiatives. Inclusion: A commitment to furthering equality, diversity, inclusion and wellbeing to create a positive	

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work environment and culture.

Social Responsibility: Promote and champion the University's social responsibility ambitions to advance social inclusion, prosperous communities, better health, and cultural engagement.

People Leadership: Demonstrates effective leadership by empowering, motivating, and developing teams to achieve high performance. Builds a collaborative and inclusive work environment and provides clear direction, support, and feedback.