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**Job Description**

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| **Job title** | Research Associate |
| **Department/School** | Chemistry |
| **Job family** | Education and Research |
| **Grade** | 7 |
| **Reporting to** | Principal Investigator (PI) or Co-Investigator (CI) |
| **Responsible for** | There may be a requirement for:day to day supervision of other staff e.g. technical staff or, co-supervision of doctoral or undergraduate students |
| **Location** | University of Bath premises |

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| **Background and context** |
| Nuclear Magnetic Resonance (NMR) spectroscopy has become one of the essential characterization techniques in chemistry. However, paramagnetic molecules are often discarded from NMR characterization as analysis of their NMR spectra is deemed to be too complex. While there have been significant advances in the theoretical understanding of paramagnetic NMR (pNMR) spectra, there is still a huge gap between theorists and experimentalists as most of the computational approaches are not translated into tools accessible for inorganic chemists to analyse their paramagnetic metal complexes with NMR.  The proposed research project will innovate paramagnetic NMR data analysis by integrating high-level quantum chemistry methods, tailored models for the paramagnetic shift, and relaxation enhancement supported by machine learning with the goal of making pNMR analysis as simple, rigorous, and accessible as the standard NMR of diamagnetic molecules. |

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| **Job purpose** |
| To provide subject-specific research expertise and undertake specific research work to a Principal Investigator (PI)/Co-Investigator (CI) and their research team for a specified grant/project. |

| **Main duties and responsibilities** | |
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| Responsible to the PI/CI for (as appropriate to discipline): | |
| **1** | Conduct individual and/or collaborative research projects. Contribute to the design and execution of the project e.g. timetabling and meeting project milestones; participating in regular discussions with collaborative partners. Generate, collect and analyse existing data related to the project using qualitative and/or quantitative techniques. |
| **2** | Writing up results of research and contributing to the publication of results in high-quality peer-reviewed academic literature. |
| **3** | Disseminating results of research project as appropriate to the discipline through activities such as   * overseas research visits * conference presentations * public engagement activities |
| **4** | Participate in departmental/group meetings and prepare and deliver presentations/seminars to project team, internal and external stakeholders or funders. |
| **5** | Assist with the supervision of postgraduate students and undergraduate project students and the assessment of student knowledge. |
| **6** | Continually update knowledge and understanding in field or specialism to inform research activity. |
| **7** | Identify sources of funding and provide assistance with preparing bids to funding bodies. Develop ability to secure own funding e.g. travel grants. |
| **8** | Contribute to the development of research objectives and proposals for own or joint research projects, with assistance of a mentor, if required. |
| **9** | Disseminate knowledge of research advances to inform departmental teaching. |
| You will from time to time be required to undertake other duties of a similar nature as reasonably required by your line manager. You are required to follow all University policies and procedures at all times and take account of University guidance. | |

**logo-uob-resize[1] Person Specification**

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| **Criteria** | **Essential** | **Desirable** |
| **Qualifications** |  |  |
| A PhD degree in subject area of direct relevance for the project, or equivalent significant relevant experience and professional qualification | √ |  |
| **Experience/Knowledge** |  |  |
| Post doctoral experience |  | √ |
| Experience in ab initio simulations | √ |  |
| Knowledge of spin dynamics |  | √ |
| Experience in coding |  | √ |
| Demonstrated significant depth and breadth of specialist knowledge of subject matter to contribute to research programmes and to the development of departmental research activities | √ |  |
| Demonstrated awareness of latest developments in the field of research and in research design | √ |  |
| Demonstrated potential to publish in high quality, peer reviewed journals | √ |  |
| **Skills** |  |  |
| Ability to prepare research proposals, to conduct individual research work and to disseminate results |  | √ |
| Ability to organise and prioritise own workload to meet required deadlines | √ |  |
| Ability to write research reports and to effectively disseminate outcomes | √ |  |
| Excellent oral, interpersonal and written communication skills | √ |  |
| Proficiency in appropriate techniques (as appropriate to discipline) | √ |  |
| Proficiency in IT skills (as appropriate to discipline) | √ |  |
| **Attributes** |  |  |
| Commitment to working within professional and ethical codes of conduct | √ |  |
| Innovation and developing creative solutions | √ |  |
| Commitment to excellence in research | √ |  |
| Enthusiasm and self-motivation | √ |  |
| Tenacity – working to achieve own and team objectives and to overcome obstacles | √ |  |
| Ability to be an effective team worker | √ |  |
| Commitment to safe working practices | √ |  |