

**JOB DESCRIPTION**

**Research Associate in Next-generation K-ion Battery Cathodes**

**Vacancy Reference: 0714-24**

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| **Job Title:** Research Associate in Next-generation K-ion Battery Cathodes | **Present Grade:** 6P |
| **Department/College:** Chemistry | |
| **Directly responsible to:** Dr Xiao Hua | |
| **Supervisory responsibility for:** None | |
| **Other contacts** | |
| **Internal:** academic, research and support staff colleagues in the Department of Chemistry; colleagues across departments of the University and central administration. | |
| **External:**  Representatives of the funders; stakeholders from partner institutions; and external agencies | |
| **Major Duties:**  The research associate will carry out research into the development of novel metal fluoride-based cathodes in the KIB applications. This will involve material preparation followed by a series of routine and advanced material characterizations, as well as collaboration with the EU-based KIB consortium SPIRIT on joint projects concerning solid-state KIB testing and characterizations. Key Responsibilities Under the supervision of Dr Xiao Hua the research associate will be responsible for:   * To support and undertake a range of research activity including:   1. The Synthesizing of metal fluoride materials mainly using mechanochemical methods   2. Perform material characterization techniques (e.g. XRD, solid-state NMR and SEM) to obtain phase, structure, and morphology information   3. Assemble battery cells and perform electrochemical tests to evaluate the materials’ performances   4. Utilize in-house X-ray total scattering instrument to obtain PDF data and carry out PDF analysis to study the atomic structure of the materials   5. Employ advanced synchrotron-based techniques for operando or ex situ measurements to obtain in-depth knowledge of the materials’ structure-property relationships * Contribute to the running of the research group, by providing technical training and contributing to resource management (ordering, generating health and safety documentation, etc.) * To contribute to internal and project reports and presentations to stakeholders where appropriate * Participate in the normal activities of the research group, including meetings and presentations * Help to train undergraduate and postgraduate students and advise them and other staff regarding research methodology and techniques. * Under the direction of your Line Manager, to make a contribution to the development of applications for future research grant funding. * To support the dissemination of the research, including contribution to research publications and conference presentations. * You may also be required to carry out any other duties, commensurate with the grade of the post, as directed by your line manager or their nominee. | |