

## JOB DESCRIPTION

## Vacancy Ref: A2922

Job Title:Senior Research Associate in Nanoscale Characterisation of Na-		Present Grade: 7
ion Battery Materials (Faraday Institution's NEXGENNA project		
Department/College:	Physics/Materials Science Institute	
Directly responsible to:	Prof. Oleg Kolosov	
Supervisory responsibility for:	: Some supervision of postgraduate and research students and junior PDRA's.	
Other contacts		
Dr. Nuria Tapia-Ruiz (Chemistry)		
Internal:		
Dr. John Griffin (Chemistry), Dr. Ben Robinson (Physics)		
External:		
The NEXGENNA consortium (St. Andrews, UCL, Cambridge, Oxford, Sheffield and industrial partners)		
Major Duties:		

The postdoctoral research associate will carry out research in nanoscale characterization of Na-ion battery materials and their interfaces including but not limited to scanning probe microscopy (SPM), surface and nano-gravimetric analysis, electron and optical microscopy and spectroscopy, etc. This will include setting up nano-characterisation systems in the controlled (glove box) environment, preparation of battery electrodes using materials provided by the collaborators, performing electrochemical experiments, interpreting and cross-correlating data with other experimental and modelling techniques, and reporting these to the consortium and in the scientific publications.

## Key Responsibilities:

Under the supervision of Prof Oleg Kolosov the postdoctoral research associate will be responsible for:

- Planning and conducting assigned research in accordance with the project deliverables and research strategy. Surveying the research literature and environment, understanding the research challenges associated with the project & subject area, & developing/implementing a suitable research strategy.
- Contributing to the acquisition, set up, maintenance and integration of experimental apparatus and analysis strategies: SPM techniques (AFM, electrochemical AFM, Kelvin probe, scanning spreading resistance, etc), electrochemical quartz crystal microbalance (EC-QCM), micro-Raman, electron and optical microscopy etc. in the ambient, vacuum and controlled (glove box) O2/H2O free environment.
- Preparing samples from the materials provided by collaborators into test structures, performing on these electrochemical experiments (cyclic voltammetry, charge-discharge tests etc) for the follow-up analysis.
- Processing the samples in the Ar-ion nano-cross-sectioning for interfacial and 3D analysis of materials.
- Documenting research output including analysis and interpretation of all data, maintaining records and databases, drafting technical/progress reports and papers as appropriate. Preparing internal reports as well as progress reports for the NEXGENNA consortium and Faraday Institution.
- Disseminating research findings at national or international meetings and conferences, preparing manuscripts for publication, establishing and sustaining a strong track record of published research.
- Contributing to the running of the research group, by providing technical training and contributing to resource management (ordering, generating health and safety documentation, etc.). Performing administrative tasks related to the research group activities, including Budgets/Expenditure and project administration.
- Participate in the normal activities of the research group, including meetings and presentations. Contribute to the organisation, supervision, mentoring and training of undergraduate and/or postgraduate students and less experienced members of the project team to ensure their effective development.
- Engage in personal, professional and career development to enhance both specialist and transferable skills.
- Undertake any other duties of equivalent standing as assigned by the PI.