

JOB DESCRIPTION

Vacancy Ref: A3045

Job Title: Senior Research Associate in Nanoscale Thermal Phenomena in 2D Materials (EU Graphene Flagship project)	Present Grade: 7
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. Leonid Ponomarenko (Physics) Internal: Dr. Samuel Jarvis, Prof. Colin Lambert, Dr. Rostislav Mikhailovsky. External: Dr. O. Kazakova (NPL), Dr. R. Gorbachev (NGI), EU Graphene Flagship consortium and industrial partners.	
Major Duties: The senior postdoctoral research associate will carry out research in nanoscale exploration of physical properties of two-dimensional (2DM) materials (graphene, transition metal dichalcogenides and their heterostructures) focusing on their thermal and thermoelectric properties. The approaches will include but are not limited to scanning probe microscopy (SPM), surface analysis, electron and optical microscopy and spectroscopy, electron and thermal transport, and related nano-characterisation systems in the controlled (vacuum and cryogenic) environment, preparation of materials and devices and adapting those provided by the collaborators, performing experiments, leading interpretation and cross-correlating data with other experimental and modelling techniques, in close internal and external collaboration, and reporting these to the consortium and in the leading scientific publications.	
Key Responsibilities: Under the supervision of Prof Oleg Kolosov the postdoctoral research associate will be responsible for: <ul style="list-style-type: none"> • 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. • Setting up, integrating and maintaining of experimental apparatus and developing analysis strategies: SPM techniques (AFM, SThM, KPFM, SSRM, including optical and thermal excitations), micro-Raman, electron and optical microscopy and spectroscopy in the ambient and controlled (vacuum, cryogenic) environments. • Preparing samples of 2DMs materials and processing sample provided by collaborators into test structures, micro and nanofabrication, processing the samples in the Ar-ion nano-cross-sectioning for interfacial and 3D analysis of materials, and performing characterisation experiments. • Documenting research output including analysis, modelling and simulation 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 Graphene Flagship consortium. • 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, 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. 	