Candidate Information

Position:	Research Fellow
School/Department:	School of Mathematics and Physics
Reference:	22/109585
Closing Date:	Friday 18 March 2022
Salary:	£34,304 per annum
Anticipated Interview Date:	Week commencing 4 April 2022
Duration:	Available until 28 February 2026

JOB PURPOSE:

To be a highly productive, ambitious and collaborative member of the research team working on the US-Ireland grant project entitled mechanics of 2D Material Pleats: Nanomechanical Nucleation, self-assembly and superlubricity assisting in the development of research proposals and the planning and delivery of the research activity specifically running molecular dynamics and Monte Carlo simulations of the nucleation and growth of pleats in 2D materials.

The post is a critical role, and as such, successful applicants will have responsibilities in independent research, supervision, planning, collaboration, outreach and running simulations on supercomputers.

MAJOR DUTIES:

1. Undertake research under supervision within a specific research project or as a member of a research team.
2. Design, develop and refine research using a range of simulation techniques.
3. Carry out analyses, critical evaluations, and interpretations of data from simulations and the literature using methodologies and other techniques appropriate to area of research for example molecular dynamics, Monte Carlo and enhanced sampling methodologies.
4. Produce high quality research outputs consistent with project aims and commensurate with career stage. This will include collaborating and co-authoring with PI and project team (as appropriate) on outputs.
5. In consultation with the project team, promote research milestones and outputs at national and international conferences.
6. Assist grant holder in the preparation of funding proposals and applications to external bodies.
7. Carry out occasional educational supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
8. Undertake supplementary duties relevant to the success of the project including administrative duties and additional training and development activities as required.

Planning and Organising:

1. Plan own day-to day activity within framework of the agreed research programme.
2. Contribute to the planning of research project, reports and publications etc.
3. Assist PI and project team in organising relevant events.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance, as required, to ensure a safe working environment.

Internal and External Relationships:

1. Liaise on a regular basis with members of the project team.
2. Liaise on a regular basis with project partners in the USA and the Republic of Ireland.
3. Build contacts with relevant stakeholders to form relationships for future collaboration and project dissemination.

ESSENTIAL CRITERIA:

1. Normally have or be about to obtain a PhD in physics, chemistry, materials science or a related discipline.
2. At least 3 years research experience in statistical mechanics and computer simulation to include:
   • Undertaking research in statistical mechanics and computer simulation.
   • A proven track record in carrying out computer simulations and then analysing, critically evaluating, and interpreting the simulation results.
   • Working effectively as part of a research team in the development and promotion of the research theme.
3. Strong publication record commensurate with stage of career.
4. Ability to contribute to broader management and administrative processes.
5. Practical problem solving skills, independence of thought and initiative.
6. Ability to assess and organise resources.
7. Ability to communicate complex information in English effectively in oral and written.
8. Ability to build relationships to develop internal and external networks.
9. Commitment to continuous professional development.

DESIRABLE CRITERIA:

1. Training in atomistic simulation.
2. Knowledge of literature related on topics under study in grant proposal.
3. Contribute to the School’s outreach programme by links with industry, community groups etc.