



Candidate Briefing Document

Early Career Fellowships (Permanent Residents
of Taiwan only) – Structural Energy Storage
Composites for Future Electrical Vehicles
(2 posts)

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ulster.ac.uk

Role: Early Career Fellowship (**Permanent Residents of Taiwan only**) - Structural Energy Storage Composites for Future Electrical Vehicles (**2 posts**)

Department: School of Engineering

Grade: 6 (£31,414 per annum)

Responsible to: Principal Investigator

Campus: Belfast

(Fixed-Term for one year / Full-time)

Job Purpose

The School of Engineering at Ulster University (UU) Belfast, has secured funding from the British Council under the International Science Partnerships Fund for the recruitment and training of 2 Early Career Researchers from Taiwan in the field of net zero energy solutions with emphasis on structural energy storage composites for future electric vehicles. The grant will support medium-long term partnerships between the UU and sending institutions from Taiwan, contributing to research capacity strengthening at both individual and institutional levels, alongside support for the individual researcher. One of the key objectives of this fellowship scheme is to nurture talent to drive inclusion in Research & Innovation (R&I). This opportunity is available to early career researchers who have not yet held a full-time research-related post or academic post, who wish to have a research experience at Ulster University in UK

The successful candidates will be active members of a vibrant research project/team assisting in the development of energy generation, storage and conversion devices. One theme is centred on the manufacturing of high-performance materials capable of carrying mechanical loads and storing electrical energy simultaneously. Such multifunctional lightweight materials, have an enormous potential to address some of the grand challenges facing us, particularly those associated with minimising environmental impact and maximising energy efficiency through weight/volume reductions.

The School of Engineering has world-class expertise in the design and manufacturing of novel materials, and the understanding of their properties through experimental and computational methods, for applications in energy generation, storage and conversion for achieving net zero solutions. Spearheading this transformative journey are the new major multimillion pounds projects across School of Engineering that include the Advanced Manufacturing Innovation Centre - AMIC (£87m) and the £33m UKRI-SIP Artemis Technologies project, which is a Belfast Maritime Consortium with Ulster as a core partner to develop zero-emissions and autonomous-ferries.

We welcome applications from individuals with a strong background in engineering or physical sciences with an interest in developing their research skills to have a beneficial impact on environment and society. You will benefit from a unique blend of training in research skills and entrepreneurship, artificially engineered multifunctional materials expertise along with short term industrial placement. Importantly, this Fellowship action will act as a stepping-stone to enhance existing links and develop new collaborative links with Universities and centres of excellence in Taiwan.

Main Duties

Plan and conduct research activities within the project to meet deadlines and deliverables. This includes:

- i. Form a comprehensive understanding of the scientific objectives of the project, its context and the relevant literature.
- ii. Work to achieve and deliver the project's essential objectives and milestones.
- iii. Design with the Principal Investigator and execute experiments covering all stages of the preparation, characterisation and testing of materials and devices.
- iv. Thoroughly analyse and interpret research findings.
- v. Draft research reports and play a significant role in publishing outcomes.
- vi. Communicate and collaborate effectively with Institutes in Taiwan and other members of the research team to facilitate progress on the project.
- vii. Present findings at national meetings and conferences.
- viii. Engage with the research environment within the School.
- ix. Any other duties appropriate to the grade and nature of the post.

Eligibility & Definition of Early Career Researcher

- Be a permanent resident of Taiwan
- Early Career Researchers (ECRs) need to have completed or are close to completion of their PhD, potentially waiting for their final viva voce examination, which must be passed prior to taking up the Fellowship. ECRs will not have held a permanent academic post or a post with a research-related element, or one which allowed them to supervise PhD students or submit research grants as a principal investigator. Time spent in teaching-only roles or academic related roles does not affect ECR status, provided no research element was part of the role. If a researcher does not hold a PhD but has research experience equivalent to a PhD holder, they can still be considered eligible. Participants from for-profit organisations cannot be funded. As we move toward greater inclusivity for ECRs from a wide range of backgrounds, we are no longer counting years spent in a specific career stage.
- Not currently in receipt of financial support or funding towards any other programme in the UK from any other sources.
- Meet the English language requirement of the UK visa.
- Be willing to demonstrate future contribution to capacity-building and socio-economic advancement through the benefits achieved after completing the fellowship programme.
- Agree to maintain contact with the British Council for purposes of monitoring and evaluation during and after their fellowship.
- Demonstrate a plan and a passion to engage other early career researchers from Taiwan.
- Employees of the British Council, the UK government or Scottish, Welsh, or Northern Irish governments are not eligible to apply for this programme.

Benefits

Ulster University is committed to equip and empower all researchers at UU, to succeed in their chosen careers. The University's dedication is exemplified by its endorsement of the 2021 "Concordat to Support the Career Development of Researchers"

Our exceptional employment package encompasses:

- IELTS exam fee (for fellows without a valid Test of English).
- Return economy-class travel from Taiwan to the UK for the applicant and their spouse.

- Visa and insurance / NHS surcharge costs.
- Ad hoc costs (heavy baggage allowance, etc.)
- Where applicable, accompanying child allowance for fellows consistent with UK visa requirements. These rates are decided by the Home Office.
- Training opportunities for career advancement.
- The University has a range of initiatives to support a family friendly working environment, including flexible working.
- Guidance on accommodation options.

(Note - expenses (visa, IELTS, travel etc) can be claimed upon appointment).

The School of Engineering holds a Silver Athena SWAN Award in recognition of our commitment to advancing Gender equality. You can read more about what this means at www.ecu.ac.uk/equality-charters/athena-swan and on our University website <https://www.ulster.ac.uk/peopleandculture/employee-benefits/equality-diversity/athena-swan>.

Informal enquiries may be directed to Prof. Pagona Papakonstantinou (p.papakonstantinou@ulster.ac.uk)

The University is committed to developing all employees and operates a Developmental Appraisal Review (DAR) which is mandatory. You will be required to meet with your manager at least once every two years as part of the DAR process. If you have line management responsibility for other staff, you will be required to conduct a DAR meeting with your staff at least once every two years.

All staff in the University have a responsibility to comply with the University's Equal Opportunities Policy and Health and Safety Policy. Line Managers have particular responsibility for ensuring compliance with these Policies within their own area.

Essential Selection Criteria (this section only includes criteria which are essential for the role)			Evaluation method	
			Application	Interview
Educational and Professional Qualifications	ESSENTIAL	Degree in Engineering, Materials Science, Chemistry, Physics, Physical Chemistry or a closely related discipline.	✓	
		PhD (or nearing completion of a PhD) in an Engineering/Materials/Chemistry science area. OR MSc in Engineering, Materials Science, Chemistry, Physics, Physical Chemistry or a closely related discipline, with publication track record equivalent to a PhD holder.	✓	
Previous Experience / Training	ESSENTIAL	Experience in one or more of the following areas: <ul style="list-style-type: none"> - Experience with fabrication and evaluation of energy generation, storage and conversion devices (e.g. batteries, supercapacitor, solar cells, cells for green fuel production, fuel cells etc). - Experience on fabrication and characterisation of polymer composites or multifunctional materials. - Experience on development of sustainable materials for energy related applications. - Experience on surface characterisation techniques (e.g. SEM/EDX, TEM, Raman, FTIR, XPS). - Experience on nanomaterials synthesis and characterisation. - Experience on electrochemical testing. - Experience on mechanical testing. - Experience on electrical testing. - Experience on modelling the electronic structure of materials for energy related applications. 	✓	✓

Job Related Achievements	ESSENTIAL	Evidence of ability to conduct a research project to successful completion.		✓
		Evidence of ability to work effectively both within a team and independently.		✓
Interpersonal Skills	ESSENTIAL	Good communication skills, both written and verbal.		✓
Research and Analogous Activities	ESSENTIAL	Well-developed time management skills.		✓
		Evidence of writing reports and meeting deadlines.		✓
Other Factors	ESSENTIAL	Able to travel		✓
		Applicants must be permanent residents of Taiwan.	✓	
		Applicants must meet the British Council definition of an Early Career Researcher. <i>(Early Career Researchers are defined as having completed or are close to completion of their PhD. Final viva voce examination must be passed prior to taking up the award. ECRs will not have held a permanent academic post or a post with a research-related element).</i>	✓	

Desirable Criteria

The desirable criteria below are in ranked order of importance/relevance to the role and may be used in the shortlisting process.

1.	Research track record in more than one area indicated in the “previous experience/training” criterion.
2.	Evidence of peer-reviewed research outputs in high quality peer reviewed journals and/or conferences.
3.	Ability to communicate complex, theoretical and technical material in a comprehensive way to a range of audiences including non-specialists.

The University will conduct a shortlisting exercise based on the written information you have provided. The initial shortlisting exercise will be based on the identified criteria from the personnel specification. The University reserves the right to supplement these shortlisting criteria using additional essential and/or desirable criteria from the personnel specification at subsequent stages of the shortlisting process.

HOW TO APPLY:

Application is by submission of a completed online application form by the closing date – 29th September at 23:30

The application form can be completed on-line at <https://www.ulster.ac.uk/peopleandculture/recruitment/jobs>

A CV is required to be submitted together with the University’s online application form.

Late applications will not be accepted.