

# QUB- Mechanical and Aerospace Engineering PhD Project 2018-2019

## Title: Simulation of the Advanced Manufacturing of Multi-layer Rotomoulded Structures for the Renewable Energy Sector

### Project description:

Applications are invited for a 3.5 year research studentship in the field of polymer process modelling, leading to the award of a PhD degree. The post is open to students worldwide and generous funding has been provided through the EU Interreg Programme 'Renewable Engine' ([www.renewableengine.eu](http://www.renewableengine.eu)), which is focussed on the development of advanced manufacturing technologies for the renewable energy sector.

Queen's University Belfast have been at the forefront of developments in rotational moulding technologies for more than 30 years ([www.qub.ac.uk/pprc](http://www.qub.ac.uk/pprc)). This has included the development of the revolutionary process monitoring system, 'Rotolog' and the process simulation package 'Rotosim'. Through the new Renewable Engine Programme, we are looking to add an additional research team member whose role will be to develop, adapt and expand the present process simulation package to address the challenges of manufacturing the very large structures required in future wind, wave and tidal energy systems.

We are looking for an outstanding candidate with a very strong mechanical engineering background coupled to an interest in computer-based simulation. Knowledge of polymer materials and processing, and experience in the use of process modelling and computer programming software would be distinct advantages.

### Academic Requirements

Ideally candidates should either have a first class honours degree (or equivalent) in Mechanical Engineering or a related discipline, or have a high 2.1 honours degree (or equivalent) in Mechanical Engineering or a related discipline, and have either a relevant postgraduate qualification or relevant work experience.

*English: Requires a valid English language test such as IELTS with 6.0 overall and a minimum of 5.5 in English language test components or acceptable alternative to satisfy course and UKVI requirements'.*

### Funding

Full funding packages are available for both home/EU and international students for 3.5 years (42 months) and over this time the successful applicant is expected to complete the required research project (3 years) and write and submit their PhD thesis (6 months).

For International students the funding package available is made up of a full stipend award of £14,553 per annum (index linked and payable over 3.5 years), full university registration fees for 3 years at the overseas rate (currently £18,800 per annum), plus 6 months at the 'thesis only' rate.

For UK/EU students the funding package available is made up of a full stipend award of £14,553 per annum (index linked and payable over 3.5 years), a home/EU stipend top-up of £5,000 per annum, full university registration fees for 3 years at the home/EU rate plus 6 months at the 'thesis only' rate.

The post is available immediately and the successful candidate is expected to start as soon as possible. The deadline for applications is **Tuesday 30<sup>th</sup> January 2018** and interviews will be scheduled immediately after that date.

### Key transferable skills that will be developed during the PhD:

- Experimental mechanics and thermodynamics
- Structural design for the renewable energy sector
- Simulation and modelling techniques
- Software design and computer programming

- Project management and presentational skills

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