



Five Funded PhD Scholarship Opportunities in Marine Renewable Energy at NUIG, commencing from September 2013

Composite Materials and Structural Testing

The SFI Centre for Marine Renewable Energy Ireland (MaREI)

Ireland is in one of the best locations in the world in terms of Marine Renewable Energy (MRE) resources, but requires enabling science and technology to access these resources. Science Foundation Ireland (SFI) has recently funded a €25 million Centre for Marine Renewable Energy Ireland (MaREI).

The Centre is a cluster of key university and industrial partners dedicated to solving the main scientific, technical and socio-economic challenges related to ocean energy. MaREI is shared between third-level institutions in Cork, Galway, Limerick, Maynooth and Dublin in collaboration with more than 50 industry partners. MaREI has access to state-of-the-art laboratories, advanced computational models, and considerable research capability in the basic, applied and social sciences. MaREI will educate and train the next generation of engineers and scientists for Irish industry, and will build upon and promote Ireland's excellent track record in the MRE field.

MaREI's scientific research programme is organized into four Platform Themes focusing on wave energy devices, marine electro-gas, informatics tools, and cost reduction. A series of Targeted Projects involving more than 50 industry partners will also be undertaken. The Targeted Projects are organized into the five Spokes: marine renewable energy devices; novel materials for MRE systems; power take-off and energy storage for MRE; operations support engineering; and MRE decision support and data management. The industry partners cover the spectrum from Irish SMEs to Multinational Corporations.

MaREI will deliver substantial economic and societal impacts. Being industry-centred, MaREI will develop an innovation environment that will yield intellectual property, high potential start-up companies and jobs to support Ireland's economy. There will be direct beneficial impact on the establishment of secure, competitive, sustainable energy supply in Ireland. Societal impact will include a route to achieving binding renewable energy targets for Ireland and an approach to maximising the value and security of Ireland's national renewable energy portfolio.

The establishment of MaREI will enable the emerging MRE industry in Ireland to grow to sufficient scale that it supplies energy and expertise to both indigenous and export markets. MaREI is due to employ ~80 people, including approximately 40 PhD students, and is funded by a total budget of €25 million from Science Foundation Ireland, and contributions by approximately 50 companies.

The attached further particulars describe five exciting funded PhD projects in composite materials and structural testing at NUI Galway, with starting dates from September 2013.

If interested in one of these positions please contact:

- Dr. Conchúr Ó Brádaigh (Email: conchur.obradaigh@nuigalway.ie); or
- Dr. Jamie Goggins (Email: Jamie.goggins@nuigalway.ie); or
- Mr. Ciaran Kennedy (Email: ciaran.kennedy@nuigalway.ie);

and forward a detailed CV and cover letter* to:

Dr. Conchúr Ó Brádaigh,
Mechanical Engineering,
National University of Ireland,
Galway,
Ireland.

*Please mark the subject line of e-mails and /or any hardcopy correspondence: - *“MaREI PhD Scholarship”*.

MaREI – NUI Galway PhD RESEARCH POSITION #1

PROJECT TITLE:

Application of Low-Cost, High Performance Thermoset Materials to Marine Renewable Energy Device Structures

LOCATION: NUI Galway, a partner in the Science Foundation Ireland (SFI) Centre for Marine Renewable Energy Ireland (MaREI). For more information on NUI Galway see:

<http://www.nuigalway.ie/international-students/postgraduate-students.html>

ENTRY QUALIFICATIONS

Applicants should possess a first-class or upper second-class degree in engineering, material science polymer chemistry or related physical science. International equivalents are detailed at:

<http://www.nuigalway.ie/international-students/your-country.html>

FUNDING

This position is funded by Science Foundation Ireland (SFI) as part of its Centre for Marine Renewable Energy Ireland (MaREI). Typically each scholarship attracts an annual stipend of up to €18,000 per annum for 4 years and fees are paid for the student.

DESCRIPTION

This PhD student will work under the supervision of Dr. Conchúr Ó Brádaigh and colleagues at NUI Galway, within the Science Foundation Ireland Centre for Marine Renewable Energy (MaREI). The PhD research will be concerned with the development of low-cost high-performance powder-thermoset composites manufacturing processes for tidal turbine blades and wave energy structures. The PhD student will work in collaboration with leading international OEM companies in marine renewable energy, composite manufacturers and composite materials and fibre suppliers.

Essential

- First-class or upper second-class degree in engineering, material science, or related physical science.
- Interest/experience in composite materials and applications in marine renewable energy.
- Strong analytical skills.
- Good experimental skills and project management experience.
- Good communication skills, including the ability to write concise, readable reports.

Desirable

- Familiarity with composite manufacturing processes.
- Understanding of polymer chemistry relating to thermoset composites.
- Experience in testing of composite materials.

Personal Attributes

- Self-motivation and independent thinking
- Good interpersonal skills
- Enthusiasm and commitment.

MaREI – NUI Galway PhD RESEARCH POSITION #2

PROJECT TITLE:

Application of Low-Cost, Reactive Thermoplastic Materials to Marine Renewable Energy Device Structures

LOCATION: NUI Galway, a partner in the Science Foundation Ireland (SFI) Centre for Marine Renewable Energy Ireland (MaREI). For more information on NUI Galway see:

<http://www.nuigalway.ie/international-students/postgraduate-students.html>

ENTRY QUALIFICATIONS

Applicants should possess a first-class or upper second-class degree in engineering, material science or related physical science. International equivalents are detailed at:

<http://www.nuigalway.ie/international-students/your-country.html>

FUNDING

This position is funded by Science Foundation Ireland (SFI) as part of its Centre for Marine Renewable Energy Ireland (MaREI). Typically each scholarship attracts an annual stipend of up to €18,000 per annum for 4 years and fees are paid for the student.

DESCRIPTION

This PhD student will work under the supervision of Dr. Conchúr Ó Brádaigh and colleagues at NUI Galway, within the Science Foundation Ireland Centre for Marine Renewable Energy (MaREI). The PhD research will be concerned with the development of in-situ polymerised, reactive thermoplastic composites manufacturing processes for tidal turbine blades and wave energy structures. The PhD student will work in collaboration with leading international OEM companies in marine renewable energy, composite manufacturers and composite materials and fibre suppliers.

Essential

- First-class or upper second-class degree in engineering, material science, or polymer chemistry.
- Interest/experience in composite materials and applications in marine renewable energy.
- Knowledge of composite/polymer materials and their processing.
- Strong analytical skills.
- Good experimental skills and project management experience.
- Good communication skills, including the ability to write concise, readable reports.

Desirable

- Familiarity with composite materials and composite manufacturing processes.
- A background in polymer chemistry and processing of polymeric composite materials.

Personal Attributes

- Self-motivation and independent thinking
- Good interpersonal skills
- Enthusiasm and commitment.

MaREI – NUI Galway PhD RESEARCH POSITIONS #3 and 4

PROJECT TITLE:

Structural Testing of Tidal Turbine Blades and Marine Renewable Energy Structures

LOCATION: NUI Galway, a partner in the Science Foundation Ireland (SFI) Centre for Marine Renewable Energy Ireland (MaREI). For more information on NUI Galway see:

<http://www.nuigalway.ie/international-students/postgraduate-students.html>

ENTRY QUALIFICATIONS

Applicants should possess a first-class or upper second-class degree in structural, mechanical or electronic engineering. International equivalents are detailed at:

<http://www.nuigalway.ie/international-students/your-country.html>

FUNDING

These positions are funded by Science Foundation Ireland (SFI) as part of its Centre for Marine Renewable Energy Ireland (MaREI). Typically each scholarship attracts an annual stipend of up to €18,000 per annum for 4 years and fees are paid for the student.

DESCRIPTION

These PhD students will work under the supervision of Dr. Conchúr Ó Brádaigh, Dr. Jamie Goggins and colleagues at NUI Galway, within the Science Foundation Ireland Centre for Marine Renewable Energy (MaREI). The PhD research will be concerned with structural testing of full size tidal turbine blades, and subsections of those blades, using traditional data acquisition and/or optical and structural health monitoring methods. The PhD students will work in collaboration with leading international OEM companies in marine renewable energy and composite manufacturers.

Essential

- First-class or upper second-class degree in Mechanical or Civil/Structural Engineering.
- Interest in composite materials and their application in marine renewable energy.
- Strong analytical skills.
- Good experimental skills and project management experience.
- Good communication skills, including the ability to write concise, readable reports.

Desirable

- Familiarity with composite materials and structures, and composite design processes.
- A background in electronic control of structural testing would be an added advantage.

Personal Attributes

- Self-motivation and independent thinking
- Good interpersonal skills
- Enthusiasm and commitment.

MaREI – NUI Galway PhD RESEARCH POSITION #5

PROJECT TITLE:

Structural Health Monitoring for Marine Renewable Energy

LOCATION: NUI Galway, a partner in the Science Foundation Ireland (SFI) Centre for Marine Renewable Energy Ireland (MaREI). For more information on NUI Galway see:

<http://www.nuigalway.ie/international-students/postgraduate-students.html>

ENTRY QUALIFICATIONS

Applicants should possess a first-class or upper second-class degree in engineering, material science or related physical science. International equivalents are detailed at:

<http://www.nuigalway.ie/international-students/your-country.html>

FUNDING

This position is funded by Science Foundation Ireland (SFI) as part of its Centre for Marine Renewable Energy Ireland (MaREI). Typically each scholarship attracts an annual stipend of up to €18,000 per annum for 4 years and fees are paid for the student.

DESCRIPTION

These PhD students will work under the supervision of Dr. Conchúr Ó Brádaigh and colleagues at NUI Galway, within the Science Foundation Ireland Centre for Marine Renewable Energy (MaREI). The PhD research will be concerned with the development and validation of ruggedised data acquisition systems. The PhD students will work in collaboration with a leading international data acquisition and control company and OEMs in marine renewable energy.

Essential

- First-class or upper second-class degree in electronic engineering, or in physics/instrumentation
- Knowledge of instrumentation, data acquisition and control.
- Strong analytical skills.
- Good experimental skills and project management experience.
- Good communication skills, including the ability to write concise, readable reports.

Desirable

- Familiarity with composite materials and composite manufacturing processes.
- A background in Electronic & Data Systems Engineering, Sensors, Networks, Wireless Data Transmission or Marine Data Systems would be an advantage.

Personal Attributes

- Self-motivation and independent thinking
- Good interpersonal skills
- Enthusiasm and commitment.