Wind Blade Design For Disassembly

Type of award Advanced Composites PhD

Department EPSRC Centre for Doctoral Training in Composites Science, Engineering and Manufacturing. This is based in the School of Civil, Aerospace and Mechanical Engineering

Scholarship Details Funding is available for UK/EU students covering UK tuition fees and a tax-free stipend at the UKRI doctoral stipend level (expected to be £15,609 in 2021/22) topped up to a minimum of £17,109. The PhD comes with a generous allowance for equipment, software and conference travel

Duration 4 years

Eligibility Home/EU (UK settled status) with permanent UK residency

Start date September 2021

PhD Topic Background/Description
Wind turbine blades are monolithic structures made from glass and carbon fibre reinforced composites glued together. The structure and materials make blades difficult to recycle and to get value out of the materials at end-of-life.

Blade design traditionally focuses on material properties, sourcing, manufacturability, and durability. Since planet resources are limited, end-of-life and circular economy will need to be an integrated part of blade design. An industry sponsored PhD project titled “Wind Blade Design for Disassembly” will develop existing blade designs that can be disassembled at end-of-life and where the materials are still attractive. It is important that the blade still lives up to the requirements that industry have for modern blades. Focus is on structural design and materials that allow for blade disassembly at end-of-life.

Some of the aspects expected to be explored as part of this project are:
- Introduce end-of-life into the design
- Design for disassembly
- Design for manufacture
- Introduction of new materials, technologies
- Work with material supply chain

The four-year Advanced Composites PhD programme is based in the EPSRC Centre of Doctoral Training in Composites Science, Engineering and Manufacturing. It comprises one-year of innovative taught components and a three-year research project (as specified above). The taught components will fast-track graduates with science and mathematics backgrounds to acquire core engineering skills, while engineering
graduates will broaden their scientific knowledge before specialising in industrial application.

The three-year research project will be jointly supervised by the academic and industrial supervisors. It is an excellent opportunity to collaborate with a world leading research team in aerospace composites.

For more information on the programme structure and the opportunities available to you on this degree please visit the CDT website.

Further Particulars

Candidate Requirements
We’re looking for exceptional students, with at least a high 2:1 Honours degree, from across all engineering and science subjects. See international equivalent qualifications on the International Students website.

If English is not your first language, you need to meet this profile level:
Profile E
Further information about English language requirements and profile levels.

Scholarship Details
Stipend at the UKRI minimum stipend level (£15,609 in 2021/22) plus a £1,500pa CDT top-up. The scholarship will also cover the amount of tuition fees associated with UK-based students. Funding is subject to eligibility status and confirmation of award.

Funding is open to EU applicants who have no restrictions on how long they can stay in the UK and have been ordinarily resident in the UK for at least 3 years prior to the start of the studentship (with some further constraint regarding residence for education).

For EPSRC funding, students must meet the EPSRC residency requirements.

Informal enquiries
For enquiries, please email the Centre for Doctoral Training - composites-cdt@bristol.ac.uk

Application Details
To apply for this studentship, submit a PhD application using our online application system. [www.bristol.ac.uk/pg-howtoapply]

Please select PhD Advanced Composites on the Programme Choice page and enter details of the studentship when prompted in the Funding and Research Details sections of the form.

Closing date for applications: 18th June 2021

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