Advanced Composites PhDs supported by Rolls-Royce

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

Collaborative PhD projects between the University of Bristol and Rolls-Royce are available as follows:

- Ceramic Matrix Composites (CMC) Oxidation modelling
  CMCs are materials that are used in high temperature applications. Therefore, as well as thermo-mechanical loads and damage, they also encounter environmental degradation. This project will develop numerical models for this environmental degradation and its interaction with mechanical damage modes for CMCs.

- Strain energy release rates of real fracture surfaces
  Delamination is a major composites failure mode, characterised by strain energy release rate, measured using small coupon tests. In real structures however the failure is more complex, being affected by factors such as ply angles, friction and environmental and rate effects, and length scale. This project aims to better understand structural scale delamination failure mechanisms and how to account for this in numerical models.

Funding is available for one of the two project descriptions above.

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 allow engineering graduates to broaden their composites and scientific knowledge or fast-track graduates with science and mathematics backgrounds to acquire core engineering skills, before specialising in industrial application.
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 Office 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](mailto: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 application:** 31 July 2021

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