Modelling of oxide-based CMC fatigue for Structural Analysis

**Type of award**  PhD Research Studentship

**Department**  Aerospace Engineering

**Scholarship Details**  Minimum £15,285 p.a. subject to eligibility status and confirmation of award.

**Duration**  3.5 years

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

**Start Date**  1 October 2021

**PhD Topic Background/Description**

As components made from composite materials are being used more extensively in the aerospace industry for light-weighting of environmentally friendly transport, it is becoming essential to better understand and predict their behaviour. In particular, for aero-engine parts, fatigue due to cyclic loading of often critical as a criterion to ensure safe design.

This project aims to develop novel non-linear analysis methods for oxide-based Ceramic Matrix Composites (CMCs) and their extension to fatigue modelling. It will be sponsored by Rolls-Royce, as part of the Composites University Technology Centre (UTC) at the University of Bristol, that is a multi-million pound partnership that has been running since 2007.

The project will be based in the Bristol Composites Institute (ACCIS), a world-leading research centre at the heart of the UK Government Composites Strategy. The institute has over 150 researchers and works closely with the £60M National Composites Centre, which is a wholly owned subsidiary of the University engaged with industry to fully exploit and develop composites technology.

Further details of our composites research can be found via [www.bris.ac.uk/composites/research](http://www.bris.ac.uk/composites/research)

**Further Particulars**

**Candidate Requirements**

Applicants must hold/achieve a minimum of a Master’s degree (or international equivalent) in a science, mathematics or engineering discipline. Applicants without a Master’s qualification may be considered on an exceptional basis, provided they hold a first-class undergraduate degree. Please note, acceptance will also depend on evidence of readiness to pursue a research degree.

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](http://www.bris.ac.uk/composites/research).
Scholarship Details
Minimum £15,285 p.a. subject to eligibility status and confirmation of award
For EPSRC funding, students must meet the EPSRC residency requirements

Informal enquiries
For questions about the research topic please contact Dr Giuliano Allegri (Giuliano.allegri@bristol.ac.uk) or Professor Stephen Hallett (Stephen.hallett@bristol.ac.uk)
For questions about eligibility and the application process please contact CAME Postgraduate Research Admissions came-pgr-admissions@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 ensure that in the Funding section you tick “I would like to be considered for a funding award from the Aerospace Engineering Department” and specify the title of the scholarship in the “other” box below along with the name of the supervisor. Interested candidates should apply as soon as possible.

Deadline for applications: Friday 26 February 2021.

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