

Title of studentship:	Four-year EngD scholarship with the National Composites Centre: "Exploitation of Novel Material Technologies (ExMaT)"
Faculty/School/Department(s)	Faculty of Engineering (University of Bristol)
Location	National Composites Centre, Bristol (BS16 7FS)
Salary/stipend	£20,450 p.a.
Hours	Full time
Contract (temp/perm)	Contract/temporary
Closing date	31 st August 2019/Once vacancy is filled

Project Title:

Exploitation of Novel Material Technologies (ExMaT)

Project Outline:

Through our research activities at the NCC, we often identify or are made aware of novel materials with very interesting and promising mechanical or functional properties, or which may enable alternative processing methods and could offer significant benefits to the end users. The degree of unknowns and the high risks involved in the adoption of such technologies (especially within conservative and risk-adverse sectors) often mean that these materials are unnecessarily ruled out at a very early stage of the down-selection process. In order to be able to fully take advantage of the potential benefits of such novel materials, researchers and users need to be better prepared to investigate and understand their specific and general properties. NCC's experience to date demonstrates that designing a suitably comprehensive and 'intelligent' system to identify and capture relevant material properties and make them easily available to potential users is critical to enable exploitation of novel material technologies

This programme of work will initiate such a process by identifying materials with key characteristics which make them particularly attractive to selected leading aerospace and defence companies, and taking them through a screening process to identify and undertake a characterisation protocol. The scope of work is not limited to basic mechanicals but covers the full spectrum of materials properties, e.g. electrical, thermal & sensing functions.

The collated data will inform and drive the definition of the requirements for a bespoke material information sharing system, suitably structured to host such data, and capable of enabling easy retrieval. The long term project vision is the generation of a framework to provide a quick-response and low-cost screening process, as well as continued population of the results database with additional materials; however, in the first 12 months, the research work is likely to be limited to the following activities:

- Requirements capture from NCC company members (mostly leading aerospace OEMs and suppliers)
- Design of materials down-selection process (to include screening workshop and agreement of test plan with Members)
- Materials testing (acquiring materials, making coupons, internal and external testing of properties and functionality)
- First year reporting including recommendations for future plans

PLEASE NOTE: Applications are considered as soon as they are received, and the position will be allocated as soon as a suitable candidate is found.

How to apply: If you are interested in applying for this EngD project please send your CV, covering letter and academic transcript to idc-composites@bristol.ac.uk

About the IDC and the EngD programme:

For further information about the IDC and the EngD programme please visit:

<http://www.cimcomp.ac.uk/idc>

Candidate requirements:

PLEASE NOTE THAT THIS PROJECT IS NOT AVAILABLE TO INTERNATIONAL STUDENTS DUE TO TIER 4 VISA REQUIREMENTS.

Applicants with 'home student' status and holding or about to graduate with a first or 2.1 degree in structural or chemical engineering, materials science or physical sciences.

Funding:

Stipend: £20,450k p.a.

Standard EPSRC studentship eligibility criteria apply:

<http://www.epsrc.ac.uk/skills/students/help/Pages/eligibility.aspx>

Contacts:

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or contact idc-composites@bristol.ac.uk