

Title: Materials for Zero Carbon Energy Systems

Type of award PhD Research Studentship

Department Mechanical Engineering

Scholarship Enhanced stipend, up to £17,000 per year.

Funding Duration 3.5 years

Eligibility Home/EU applicants only

Start date From September 2020

PhD Topic Background/Description

The UK has recently become the first major economy to commit to net zero greenhouse gas emissions, aiming to achieve this by 2050. To support this ambition, nuclear energy systems are very likely to be required. This will involve extending the lifetime of current nuclear reactors and development of new types of nuclear energy systems, including nuclear fusion.

Nuclear energy systems experience extremes of temperature, pressure and irradiation; materials within the reactor must be capable of surviving such physical conditions. Materials for nuclear energy systems is a significant research topic in the UK and worldwide, with University of Bristol (UoB) having a long track record in this area.

A PhD opportunity is available, involving developing new materials for nuclear energy systems and improving understanding and performance of existing materials. There is sufficient flexibility within the UoB research programme to carry out both modelling and experimental work. There is also opportunity for you to design, plan and then deliver experiments at central X-ray and neutron facilities in the UK and internationally. Your research work may result in significant industrial benefit – helping towards the UK's zero carbon aims.

You will join the Solid Mechanics Research Group (SMRG) at UoB, which currently has eight academic staff and approximately twenty researchers (postdoctoral staff and research students). SMRG has substantial laboratory capabilities at Bristol, including the support of two full-time technicians. You will join a highly dynamic and well-resourced research group; you will receive excellent support for technical training, personal development and opportunities to attend international conferences.

This is an excellent platform for future career prospects: many former PhD students in UoB SMRG have gone on to work in significant academic and industrial positions.

URL for further information:

<http://www.bristol.ac.uk/engineering/research/solids/>

Further Particulars

Candidate Requirements

We are looking for an enthusiastic student who must hold/achieve a minimum of a master's degree (or international equivalent) in Engineering, Physical Sciences, Material Science, Mathematical Sciences.

Understanding of the principles of nuclear and / or thermal power generation would be desirable.

Scholarship Details

Scholarship covers full UK/EU (EU applicants who have been resident in the UK for 3 years prior to 1st September 2020) PhD tuition fees and a tax-free enhanced stipend up to £17,000 p.a.

Informal enquiries

For informal enquiries, please email Prof Chris Truman, c.e.truman@bristol.ac.uk or Dr Mahmoud Mostafavi, m.mostafavi@bristol.ac.uk

For general enquiries, please email came-pgr-admissions@bristol.ac.uk

Application Details

To apply for this studentship, submit a PhD application using our [online application system](https://www.bristol.ac.uk/study/postgraduate/apply) [www.bristol.ac.uk/study/postgraduate/apply]

Please ensure that in the Funding section you tick "I would like to be considered for a funding award from the Mechanical Engineering Department" and specify the title of the scholarship in the "other" box below with the name of the supervisor Prof Chris Truman.