Title: Vibration Absorber Design using Experimental Testing within a Digital Twin

Type of award   PhD Research Studentship

Department   Mechanical Engineering

Scholarship   £15,009 p.a.

Duration  3.5 years

Eligibility  Home / EU only

Starting Date:  1 October 2019

PhD Topic Background/Description
Unwanted vibrations in engineering systems can drastically decrease their working lives, lower their efficiency, and result in spiralling maintenance costs. This project aims to address vibration suppression problems by systematically designing vibration absorbers using “digital twins” technology and specifically advanced experimental methods. A digital twin is not only a numerical model, but a virtualised proxy version of the physical system built from a fusion of data with models of differing fidelity, using novel techniques in uncertainty analysis, model reduction, and experimental validation.

Throughout the project, the student will build solid skills in the field of dynamics and control theory, mechanical modelling and simulation. This project forms part of a wider body of work under the Digitwin project (http://digitwin.ac.uk/), an EPSRC Programme Grant that spans 6 UK institutions (University of Sheffield, Bristol, Cambridge, Liverpool, Southampton & Swansea). The student will also have the opportunity to give presentations at regular Digitwin project meetings, communicate with our industry partners across a wide range of sectors, as well as publish journal papers and attend international conferences.

URL for further information  http://digitwin.ac.uk/

Candidate Requirements
We are looking for a committed and highly motivated student holding (or close to achieving) a minimum of a master’s degree (or international equivalent) in a relevant discipline.

If English is not your first language, please provide a recognised English language qualification at Profile E. Further information:  http://www.bristol.ac.uk/study/language-requirements/profile-e

Basic skills and knowledge required.
The successful applicant will have good communication skills and will be competent in the following:
• analytical and numerical methods;
• dynamic analysis for mechanical systems;
• matlab modelling.

Equal opportunities statement
We seek an inclusive environment that respects the diversity of our staff and students and enables them to achieve their full potential, to contribute fully, and to derive maximum benefit and enjoyment from their involvement in the life of the University. We are committed to building and sustaining an excellent learning experience for our students, where staff are equally valued and respected, and students are inspired to thrive academically.

Scholarship Details
The scholarship covers the following for 3.5 years:

• full UK/EU (EU applicants who have been resident in the UK for 3 years prior to 1st September 2019) PhD tuition fees
• Tax free stipend (£15,009pa for 2019/20)

EU nationals resident in the EU may also apply but will only qualify for PhD tuition fees.

Informal enquiries
For informal enquiries, please email Dr Jason Zheng Jiang, z.jiang@bristol.ac.uk or Prof Simon Neild, simon.neild@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 [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 Mechanical Engineering Department” and specify the title of the scholarship in the “other” box below with the name of the supervisor.

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