Fully funded PhD studentship - Acoustic and Elastic Wave Modelling

Department of Mechanical Engineering
The University of Sheffield, United Kingdom

Title: Sensing with ultrasonic waves

We have built a world primarily out of steel, concrete, and other hard solids. The overall aim of this fully funded PhD is to use ultrasonic / elastic waves to measure stress within solids. New ways to measure stress are needed to help maintain our infrastructure, such as large wind turbines, railways, pipes, and bridges. Developing new sensors is part of Industry 4.0 which aims to develop smart structures which can diagnose themselves.

As part of the team, your role would be to develop mathematical models and computational methods to understand how ultrasonic waves propagate in complex solids under tension. There will be plenty of opportunities for interaction with industrial partners and working alongside experimentalists as part of our world-class Leonardo Tribology Centre.

The research project will be supervised by Dr Artur Gower (arturgower.github.io) and Prof. Rob Dwyer-Joyce (www.sheffield.ac.uk/mecheng/people/academic/rob-dwyer-joyce).

Location: The University of Sheffield is part of the prestigious Russell Group universities.

The department of Mechanical Engineering ranks among the top in the UK, and has among the highest levels of research income.

Duration: 3.5 years.

Nationality: The studentship is available for a student from the United Kingdom or from the European Union with 3 years residency in the UK.

Education: A good degree or Masters in Applied Mathematics, Physics, Mechanical, Aeronautical, Civil, or other engineering.

Desirable skills

- Mathematical modelling
- Solid mechanics or wave propagation
- Numerical methods
- Good programming skills in any language

Other requirements

- Self-motivated and a passion for the subject
- Excellent communication skills

Deadline: as soon as possible or until position is filled.

Start: October 2021

Apply: please send a letter expressing your interest and a copy of your CV with the contacts of two academic referees as a single pdf file to: Artur Gower <a.l.gower@sheffield.ac.uk>