Applications are invited for a research studentship in the field of advanced non-destructive evaluation (NDE) technique development leading to the award of an Engineering Doctorate (EngD) degree.

NDT Global, the project sponsor, is a leading provider of inspection services evaluating coded sequences for inline pipeline inspection robots. It develops and operates specialized robots that operate autonomously over large areas recording high volumes of ultrasound data. Under specific pipeline conditions, reception of reliable ultrasound signals is challenging due to very low signal to noise ratio (SNR). In addition, due to high propagation speed of the robot and dense integration of transducers, operating a large number of ultrasonic transducers in parallel can result in undesired cross-talk which impairs data quality. The Imperial NDE group has recently presented work on coded excitation of ultrasonic signals in order to reduce the power input and improve the final signal to noise ratio in ultrasound signals. This project will investigate sequence design, transducer effect and electronics hardware.

The student will be based at Imperial College London; travelling to company offices in Aberdeen and Stutensee, Germany, for research visits.

The studentship is offered through the EPSRC Centre for Doctoral Training in Future Innovation in NDE (FIND CDT); a partnership of universities and companies offering a 4-year industrial doctorate designed to launch outstanding graduates into an engineering career. With close links to the related UK Research Centre in NDE, students are part of a vibrant community of over 200 researchers and have access to a range of technical training courses delivered by world leading experts.

You will be an enthusiastic and self-motivated person who meets the academic requirements for enrolment for a doctorate at Imperial College London. You will have a first class honours degree in mechanical engineering, electrical engineering, physics or a related subject, and an enquiring and rigorous approach to research together with a strong intellect and disciplined work habits. Good team-working, observational and communication skills are essential.

The post is supported by a bursary and fees (at the UK/EU student rate) provided by EPSRC, together with a generous top up by the sponsor company, Rolls-Royce. The total stipend will be in excess of £20,000pa, usually tax free. EPSRC candidates should fulfil the eligibility criteria for the award. Please check your suitability at https://www.epsrc.ac.uk/skills/students/help/eligibility/

To find out more about research at Imperial College London in this area, go to: http://www3.imperial.ac.uk/mechanicalengineering

For information on how to apply, go to: http://www.imperial.ac.uk/mechanical-engineering/study/phd/how-to-apply/

For further details of the post contact Dr Frederic Cegla: f.cegla@imperial.ac.uk +44 (0)20 7594 8096. Interested applicants should send an up-to-date curriculum vitae to Nina Hancock:
n.hancock@imperial.ac.uk. Suitable candidates will be required to complete an electronic application form at Imperial College London in order for their qualifications to be addressed by College Registry.

Closing date: until post filled

Imperial Managers lead by example.

Committed to equality and valuing diversity. We are also an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Two Ticks Employer, and are working in partnership with GIRES to promote respect for trans people