

CIU Focus Groups 2016

It has now been over 5 years since we set up the CIU and we have decided that it is time to undertake another comprehensive review of the CIU and how it interacts with our industrial partners. We are initially going to do this through 3 Focus Group meetings during October and November 2016.

The CIU has completed over 40 projects with industrial members since 2011, covering a wide range of application areas, spanning flow measurement, medical applications, NDT and ultrasonic metrology. The work from some of these projects has led to new projects and patent applications, many technical reports and evaluations, the production of valuable information that is used in commercial technical and advertising literature, and several postgraduate and postdoctoral researchers gaining valuable experience that has enabled them to go into industry where their skills are highly sought.

We want to ensure that the CIU provides the interaction and support that our industrial partners need, and we want to understand if there are any improvements to the delivery mechanisms that we should consider. As part of this, we want to raise the profile of ultrasonic technology in the UK and the excellent innovation and ambition of CIU members: a local MP is expected to attend each Focus Group meeting, to give CIU members the opportunity to engage with policy makers and understand what their views may be for opportunities for innovative technical companies.

Focus Group Meetings Locations and Dates:

October 21st - Colne, Lancashire (hosted by Detectronic)

November 11th - University of Warwick

November 25th - Letchworth, Herts (hosted by Rainbow Medical)

If you want to attend one of the free Focus Group meetings and are not already booked in to one of these events, then please contact Alan Finn now - but please note spaces are limited: (Alan.Finn@warwick.ac.uk)

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Project focus and
new initiatives

Professor Dave Hutchins elected as Fellow of the Royal Academy of Engineering

Professor David Hutchins, Deputy Director of the CIU and Professor in the University of Warwick's School of Engineering has been elected a Fellow of the Royal Academy of Engineering. World renowned engineers from across the country are elected to the Academy in recognition of their outstanding and continuing contributions to the profession, with around 1500 Fellows from industry and academia, in the UK and overseas.

New starters

Postdoctoral Researcher: Dr Andrew Feeney

Andrew obtained his PhD in 2014 from the University of Glasgow, focusing on the implementation of shape memory alloys in power ultrasonic devices and has recently been a Research Associate at Glasgow working on power ultrasonic for sub-sea environments. Andrew will be working on an EPSRC funded project to develop high frequency flexural ultrasonic transducers in collaboration with Steve Dixon.



Senior Research Group Technician: Jonathan Harrington



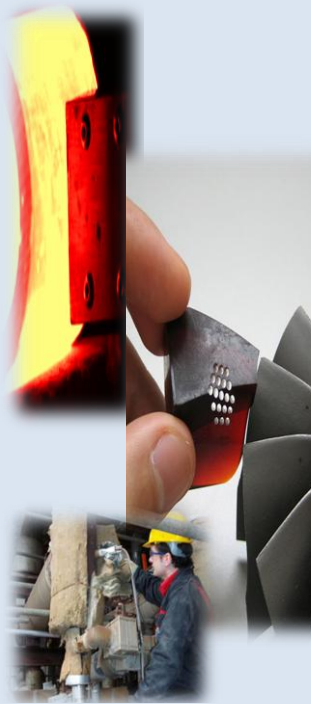
Jonathan started with us in September as the new Senior Research Group Technician at the CIU, based in the Department of Physics. He previously worked at the University of Surrey as a Senior Workshop Technician, supporting work in the Engineering Department.

And leavers.....

Over the summer, two of our overseas visiting academics Dr Ping Cui and Dr Yao "Wayne" Wenqing returned to their academic posts in China. We very much enjoyed working with them here and hope to continue to work with them in the future.

Around this time every year we see some of our CIU postgraduate researchers move on to new challenges as they submit their theses. This Autumn we have four research students submitting their theses and moving on from the CIU: Matt Clough; Tobias Eriksson; Yav Arnaudov and Marinos Antoniou.

We wish all those moving on to other things best wishes for the future - and look forwards to working them again in the future. In addition to the two new starters mentioned above, we are expecting a two new research students and three new academic visitors from South America, Asia and the Middle East to join us over the coming months.



Research Project Focus

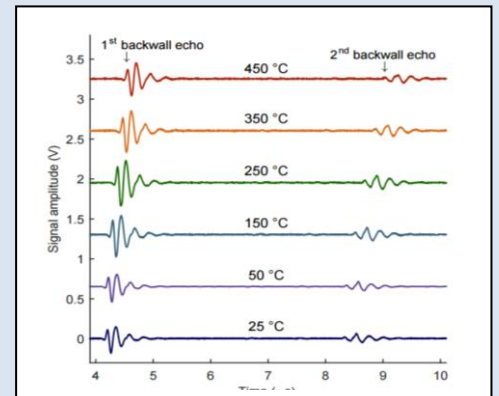
High temperature ultrasonic sensors for operation on mild steel pipes:

One of our Engineering Doctorate Students, Natasha Lunn, has recently presented results from her work on developing un-cooled, high temperature Electromagnetic Acoustic Transducers EMATs for use on mild steel

components at temperatures of over 450°C. EMATs operate without needing to contact the sample, so that there are no issues with couplants not surviving high temperatures. Whilst EMATs can be water cooled for high temperature operation, there are instances where the

potential for a water leak by the component or the need to keep water constantly flowing through the EMAT rules them out.

This new design of EMAT is designed to operate at up to 480°C, with all the components of the transducer, including the cabling being designed to operate indefinitely at this high temperature.



Ultrasonic signal A-scans on a 6.8 mm thick steel sample at temperatures between 25°C and 450°C.

EPSRC Fellowship Project: Steve Dixon has been awarded a 5-year Fellowship project from EPSRC to develop the next generation of high frequency flexural ultrasonic transducers (or HiFFUTs). This follows on from work that Tobias Eriksson published during his PhD studies at the CIU. The total project has a value of more than £1.2M and will involve industrial members of the CIU.

High resolution biomedical imaging: Dave Hutchins was recently awarded a new EPSRC project on high resolution biomedical Imaging using ultrasonic metamaterials, with a value of £392k. In the project, novel new designs of metamaterials will first be modelled theoretically, and then constructed using high-resolution additive manufacturing techniques. It is hoped that this will lead to a new approach for diagnostic ultrasound, with resolution enhancement that could be useful for cardiovascular disease, prostate and skin-cancer diagnosis.

Planned conference attendance for 2016: Members of CIU will be presenting their work at a number of national and international conferences in 2016.

Flow Measurement Institute Conference (Coventry, 2016)
 QNDE 2016 (Atlanta, July 2016)
 IEEE Int. Ultrasonics. Symp. (Sept 2016)
 NDT 2016 (UK, September 2016)



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