

## **15<sup>th</sup> Anglo-French Physical Acoustics Conference (AFPAC2016)**

### **FOREWORD/PREFACE**

The 15<sup>th</sup> Anglo-French Physical Acoustics Conference (AFPAC) was held at Selsdon Park Hotel, near London, United Kingdom, on 13-15 January 2016. The venue was an excellent location to exchange ideas, regardless whether this took place in the conference room, over lunch, at the drinks reception, or in the bar after the conference dinner. A total of 65 papers were presented at the conference. There were over 80 delegates from institutions covering five countries.

On the first day of AFPAC, the Institute of Physics joined forces with the National Physical Laboratory (UK) to host a special session on cavitation. The Cavitation User Forum, a bi-annual event specifically dedicated to applications of high power ultrasound, brought together experts from academia and from the cleaning, processing and medical industries. This session was kicked off with an invited talk by Dr David Fernandez Rivas (University of Twente, The Netherlands), on the reproducibility of sonochemistry and ultrasonic cleaning.

The Cavitation User Forum was followed by a special session on biomedical ultrasound, co-sponsored by the Medical Physics Group of the Institute of Physics, which featured a keynote talk by Prof Robin Cleveland (University of Oxford) on ultrasonic surgery. The session included talks on acoustic microscopy of live cells, histotripsy, phase-insensitive ultrasound computed tomography for the diagnosis of breast cancer, high-intensity focused ultrasound and the biomedical applications of solitary wave impulses generated by granular chains

The second day featured an invited presentation by Prof Tim Leighton (University of Southampton, UK) on the acoustic bubble, which discussed ocean, cetacean and extra-terrestrial acoustics, and cold water cleaning. Prof Christ Glorieux (KU Leuven, Belgium) discussed the applications of photothermal and photoacoustic methods using different spatiotemporal excitation patterns. A broad range of physical acoustics topics was reviewed that day. Work was presented on phononic crystals, high resolution imaging of in-depth rough interfaces, shear wave reconversion in nano-fluids and the prediction of radiation by finite-sized sources in semi-infinite isotropic plates. The field of non-destructive evaluation was well represented, with a presence from institutions such as Imperial College London, University of Nottingham and Université de Montpellier.

During the Conference Dinner, the 2015 Bob Chivers prize was awarded to Dr Bo Lan for his paper entitled "Experimental and computational studies of ultrasound wave propagation in hexagonal close-packed polycrystals for texture detection".



On the final day of the conference, Prof Olivier Dazel (Université du Maine, Le Mans, France) gave an invited talk discussing the past present and future of the modelling of sound absorbing materials.

The UK organising committee was particularly happy to welcome the many French contributors that travelled to Selsdon Park and would like to thank Alain Lhémery and the Société Française d'Acoustique (SFA) for publicising the event in France. We are happy to announce that many of the presented papers will be published in the conference proceedings in Journal of Physics: Conference Series. We would also like to draw the reader's attention to the upcoming 16<sup>th</sup> AFPAC conference that is scheduled to take place on 23-25 of January 2017 at the Laboratoire de Mécanique et d'Acoustique, Marseille, France.

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