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16th Anglo-French Physical Acoustics Conference (AFPAC)

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16th Anglo-French Physical Acoustics Conference (AFPAC 2017)**FOREWORD/PREFACE**

The 16th Anglo-French Physical Acoustics Conference (AFPAC) was held on 23-25 January 2017 at the Laboratoire de Mécanique et d'Acoustique (LMA), Marseille, France. The event was organised by Dr Cécile Baron and Dr Philippe Lasaygues (LMA), who ensured a successful unfolding of both the conference sessions at the laboratory, and the social events in the city centre. The involvement of other staff from the LMA guaranteed that everything went very well and smoothly. A total of 50 papers were presented at the conference, which featured over 60 delegates. We would like to extend our thanks to Cécile, Philippe and the LMA staff for the pleasant times we had.

The first day of AFPAC kicked off with an invited presentation by Dr Claudia Fritz (Institut Jean Le Rond d'Alembert, Paris, France) who provided a fascinating insight into the qualities of Stradivarius versus modern-built violins, with surprising results. A diverse range of physical acoustics topics were broached on this day, ranging from the experimental ultrasonic characterisation of cultural heritage reproductions, acoustic emissions as a tribochemical sensing technique, acoustic characterisation of microbubble clouds and defect characterisation using ultrasonic arrays. The first of two Conference Dinners was held at Le Malthazar, in the Vieux-Port area of Marseille. The second day featured an invited presentation by Prof Geoff Nash (University of Exeter, UK) on surface acoustic wave-graphene interactions. Other works presented on this day included liquid foams, soap films and acoustic dissipation processes, nonlinear elastic metamaterials, transcostal high-intensity focused ultrasound for the treatment of liver tumours, torsional guided wave EMAT for SHM, the acoustic signature of skin samples for cosmetic applications and a range of numerical methods for NDE. An invited talk was given by Dr Frédéric Padilla (Labtau, INSERM, Lyon, France), who discussed the applications of ultrasound for bone tissue engineering and regenerative medicine. The second Conference Dinner was held at Les Arcenaux, also in the Vieux-Port area, and offered a selection of locally sourced foods and organic wines. During the Conference Dinner, the 2016 Bob Chivers prize (a prize awarded by IOP / Physical Acoustics Group to students engaged in a PhD in a UK university) was awarded to Dr Anton Van Pamel (Imperial College London, UK) for his paper entitled "Finite element modelling of elastic wave scattering within a polycrystalline material in two and three dimensions".

On the final day of the conference, Prof Jeff Bamber (Institute of Cancer Research, London, UK) gave an invited talk reviewing elastography as an imaging modality for characterising the biomedical properties of tissue, in research and in clinical medicine. The conference concluded with a tour of the state-of-the-art facilities at the Laboratoire de Mécanique et d'Acoustique.

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