

令和元年 6 月 1 日

応用物理学会北海道支部
会員各位

応用物理学会北海道支部

講演会のお知らせ

下記講演会を開催いたしますので、多数ご参加下さいますようご案内申し上げます。

演題 : Imaging and Characterisation with Gigahertz Frequency Phonons

講師 : Salvatore La Cavera III 氏

(Optics and Photonics Group, Faculty of Engineering, University of Nottingham, postgraduate researcher)

日時 : 令和元年 6 月 18 日 (火) 16:00~17:00

場所 : 北海道大学工学部応用物理学専攻会議室 (A3-62)

主催 : 応用物理学会北海道支部

講演の要旨

Using phonons instead of photons to interrogate a specimen provides many advantages. For example, in materials such as biological tissue and metals, the sound is capable of travelling much longer distances than light, and consequently is a ubiquitous tool for performing non-destructive evaluations in biomedical and industrial engineering applications. From the perspective of imaging, the acoustic analogue of the index of refraction, acoustic impedance, provides significant elastic contrast in low-optical-contrast materials. In particular, the generation and detection of gigahertz frequencies of ultrasound allow nanometre-scale axial measurements to be made. In this talk, I will discuss our research group's utilisation and manipulation of gigahertz frequency phonons in the context of biological imaging and material/structure characterisation. We have developed a range of opto-acoustic transducers which are capable of: ultrasonically imaging living cells in three dimensions, characterising and super-localising metallic nano-particles, characterising sub-micron polymer thin films, and even performing spectroscopic measurements from the tip of a single-mode optical fibre.

世話人 松田理

北海道大学大学院工学研究院応用物理学部門

電話 : 011-706-7190 omatsuda@eng.hokudai.ac.jp