THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

FACULTY OF ENGINEERING 工程學院 WHERE CONCEPTS BECOME REALITY

BME DEPARTMENT OF BIOMEDICAL ENGINEERING 生物醫學工程學系

BME RESEARCH SEMINAR

SMC Applications of Respiratory Monitoring and Clinical Diagnostic

DATE:
14 June 2019 (Friday)

TIME:
11:00am - 12:30pm

VENUE:
QR504, The Hong Kong Polytechnic University

OVERVIEW OF THE LECTURE:

Respiratory diseases are among the most prominent medical preoccupations and a worldwide public health issue. Under this circumstance, clinical examination is the starting point of the diagnosis and of the monitoring processes. However, a thorough physical examination of the chest is time-consuming. Its results are by nature operator dependent, and they are not substantiated by a storable and transferable document beyond the written transcription of the physician's observations. Its accuracy is limited by the ability of human senses to detect differences in physical sensations, and this can be further impaired by contextual elements. Finally, and by definition, physical examination of the chest requires the presence of the patient and the physician at the very same location.

For all these reasons, a diagnostic tool that would allow the detection of thoracic and abdominal asymmetries rapidly and with increased sensitivity, with minimal bulk and no ionizing radiations, appears desirable (notion of "enhanced clinical examination"). The ability of this tool to provide operator independent results that would be storable for future reference and transferable would be an obvious advantage, as would be the ability of the tool to be operated without the physical presence of a practitioner (telemedicine applications). Finally, such a tool would open the possibility of a continuous clinical monitoring of thoracic abnormalities that is beyond the reach of physical examination itself. The proposed airborne ultrasound Surface Motion Camera (SMC) fully answers the above specifications.

GUEST SPEAKER :

Dr. Ros Kiri ING

Senior Associate Professor

Langevin Institute

ESPCI Paris, PSL Research University, CNRS

Paris, France

About the Speaker:

Ros-Kiri Ing received his doctoral degree in 1990 in optics and photonics from the Pierre et Marie Curie University, Paris, France. From 1987 to 1990, he worked with the Groupe de Physique des Solides, Paris, France, on laser generation of ultrasound. From 1990 to 1993, as a research associate, he worked with the National Research Council of Canada on laser interferometers using photorefractive crystals. Since 1993, he is Associate Professor of Physics at University of Paris Diderot (University of Paris). In 2003, he founded the startup company Sensitive Object in Paris, France, to promote an innovative acoustic technique to detect and localize any surface impact on any kind of rigid object. Although his professional experience places him mainly in research, he was president, member of the board of directors, deputy general manager of Sensitive Object. In addition, Dr. Ing received several awards between 2003 and 2008. He filed 15 patents mainly as the first inventor. Currently, he works at the Institute Langevin, Paris, France, where he is involved, among other things, in the development of the airborne ultrasound Surface Motion Camera (SMC) for medical prediagnosis purposes.

Supporting Organizations:

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