SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
Faculty of Engineering
Website: https://www.eng.nus.edu.sg/ece/

Area: Microelectronic Technologies & Devices

Host: Prof. Hong Minghui

TOPIC	**:**	**Enhancement Of Non-Contact Photoacoustic Detection Via Elliptical Reflector**
SPEAKER	**:**	**Ms. Meng Xianyu** **Graduate Student, ECE Dept, NUS**
DATE	**:**	**Thursday, 22 April 2021**
TIME	**:**	**2.00PM to 3.00PM**
WEBINAR	**:**	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/83687978613?pwd=ZkVacjFYWnlNRWpYZDJyOGhmaHlxQT09** **Meeting ID: 836 8797 8613** **Password: 952093**

ABSTRACT

All-optical photoacoustic detection as a non-contact detection method is much advantaged in providing high detection resolution and detection speed, at the same time avoiding sample contaminations from contacting or applying coupling agents. However, the all-optical photoacoustic detection is only efficient when working with highly reflective sample surfaces. When the probe signal beam reflects from the rough surface, light scattering reduces greatly the intensity of photoacoustic signal received, which also decreases drastically with increasing roughness. The de-rusting and polishing before detection require additional pre-test preparations and limit the industrial applications of all-optical photoacoustic detection. In this seminar, a novel design based on of elliptical reflector is used to gather the scattered light from rough surfaces and enhance the intensity of photoacoustic signal in an all-optical photoacoustic setup. This design improves the efficiency of photoacoustic signal detection for ~70% when working with rough surfaces.

BIOGRAPHY

Ms. Meng Xianyu is currently pursuing M.Eng in Department of Electrical & Computer Engineering, National University of Singapore (NUS). Her research interests cover optical inspections for subsurface crack detection using laser induced ultrasound. She received her Bachelor's degree in Electrical and Computer Engineering from NUS.