SEMINAR ANNOUNCEMENT

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

Area: Microelectronic Technologies and Devices

Host: Prof Hong Minghui

TOPIC	**:**	**Optical Nano-Imaging Via Microsphere Compound Lenses Working In Non-Contact Mode**
SPEAKER	**:**	**Mr. Wu Guangxing** **Graduate Student, ECE Dept, NUS**
DATE	**:**	**Friday, 12 March 2021**
TIME	**:**	**4.30PM to 5.30PM**
WEBINAR	**:**	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/85098673234?pwd=TmhXMEdpSzA2SWpOaFNQZE9mbUlydz09** **Meting ID: 850 9867 3234** **Passcode: 459008**

ABSTRACT

Microsphere lens for nano-imaging has been widely studied because it can magnify nano-patterns to the scale that can be resolved by a conventional optical microscope. However, the further development of the microsphere microscope has been restricted by its limited magnification and small field-of-view. In this work, the microsphere compound lenses (MCL) which allow enlarged magnification and field-of-view simultaneously in non-contact imaging mode have been demonstrated. A theoretical model involving wave-optics effects is established to guide the design of MCL for different magnifications and imaging configurations. Experimentally, using MCL to image the specimen with magnification as large as 10.3× is realized and nano-patterns with feature size as small as ~76 nm can be resolved. The scanning working manner of the MCL has also been demonstrated to image sample with a large area. Prospectively, the well-designed MCL will become irreplaceable components to improve the imaging performances of microsphere microscope just like the compound lens in conventional macroscopic imaging system.

BIOGRAPHY

Wu Guangxing is currently working towards his Ph.D. degree in the Electrical and Computer Engineering Department at the National University of Singapore. His current research interest focuses on improving the performances of microsphere nanoscope and extending its application region.

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