SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING
Website: https://cde.nus.edu.sg/ece

Area: Microelectronic Technologies & Devices

Host: Dr. Zhang Chenghui

TOPIC	:	**Advances in Antiferromagnetic Spin Waves**
SPEAKER	:	**Mr. Yang Dongsheng** **Graduate Student, ECE Dept, NUS**
DATE	:	**Monday, 20 February 2023**
TIME	:	**3:00 PM to 3:30 PM**
VENUE	:	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/87628864709?pwd=b2YxdGQ0eGZ0ckVCTy9MbGkrciszQT09** **Meeting ID: 876 2886 4709** **Passcode: 550903**

ABSTRACT

Propagating spin waves in antiferromagnets, which enable terahertz precession rate, >10 km s^{-1} group velocity and sub-100-nanometer wavelength hold the promise to revolutionize high-speed electronics at nanoscale and up to terahertz (THz) frequencies such as on-chip THz interconnects. In this seminar, we will review the development of antiferromagnetic spin waves including their background, current progress and the future prospects. Time-solved magneto-optical Kerr (TR-MOKE) microscopy is an advanced technique that allows to study antiferromagnetic spin dynamics with sub-picosecond and micrometer time and spatial resolution respectively. By employing optical non-local measurement scheme, the delayed rise time of TR-MOKE signal is observed, clearly indicating its origin of propagating spin waves. We believe that these preliminary results demonstrate the validity of our new approach.

BIOGRAPHY

Yang Dongsheng is currently a PhD student at the Department of Electrical and Computer Engineering, National University of Singapore. His PhD programme is on the realization of terahertz frequency information devices using antiferromagnetic spintronics. His main research topics include antiferromagnetic spintronics, magnonic devices, ultrafast magneto-optic and terahertz spectroscopy.