SEMINAR ANNOUNCEMENT

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

Area: Microelectronic Technologies & Devices (MTD)

Host: Dr Huo Jiali

TOPIC	:	**Reliable SnP_2S_6 Memristors for Reconfigurable Logic-in-Memory Computing**
SPEAKER	:	**Mr Thaw Tint Te Tun** **Graduate Student, ECE Dept, NUS**
DATE	:	**Wednesday, 18 November 2026**
TIME	:	**10:00AM-10:45AM**
VENUE	:	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/86868067367?pwd=FJU9eL4NjQbJUkQn2q5PaDS1uaas7L.1** **Meeting ID: 868 6806 7367** **Passcode: 233574**

ABSTRACT

Memristor-based logic-in-memory computing can reduce data movement, but switching variability remains a challenge. In this talk, I will present SnP2S6 memristors that combine intrinsic nanopores with guided titanium filament formation to improve switching uniformity. Partial RESET operation reduces cycle-to-cycle SET voltage variability from 27.01% to 6.62%. I will discuss the switching mechanism, supported by experimental measurements and density functional theory calculations, and demonstrate 14 two-input Boolean logic functions within a single device. Finally, I will present a simulation-based dynamic object tracking framework incorporating a binary convolutional neural network, achieving 96% classification accuracy. These results highlight the potential of SnP2S6 memristors for compact, reconfigurable logic-in-memory computing.

BIOGRAPHY

Thaw Tint Te Tun received his bachelor's degree in Electrical and Electronic Engineering from Nanyang Technological University (NTU), Singapore, in 2023. He is currently pursuing a Ph.D. in Prof. Ang Kah Wee's group in the Department of Electrical and Computer Engineering at the National University of Singapore (NUS). His research interests include 2D materials-based devices, such as memristors.

https://cde.nus.edu.sg/ece/highlights/events/