

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Faculty of Engineering

Website: <https://www.eng.nus.edu.sg/ece/>

Area: Microelectronic Technologies & Devices

Host: Assoc Prof Zhu Chun Xiang

TOPIC	:	Extend Gate ISFETs Using Graphene As The Sensing Film
SPEAKER	:	Mr Zeng Zhe Graduate Student, ECE Dept, NUS
DATE	:	Monday, 15 March 2021
TIME	:	2.00PM to 2.30PM
WEBINAR	:	Join Zoom Meeting https://nus-sg.zoom.us/j/83124134282?pwd=eIA1WUpNUkVqdmJHcTBRYXlwRStOZz09 ID: 831 2413 4282 Password: qpalm

ABSTRACT

An Ion Sensitive Field Effect Transistors (ISFET) is a potentiometric sensing device of pH/ion concentrations. Its structure can be understood as an open-gated MOSFET with the gate oxide exposed to sample electrolyte, which contains ions of interest to interact with the oxide surface, giving rise to a shift of VTH of the ISFET. ISFET is CMOS compatible with small size and can be widely applied in biosensing areas. However, one of the drawbacks of an ISFET, namely drift, largely affects its stability and obstructs its development. During this seminar, the basic working principles of an ISFET and the concept of drift will be introduced. Besides, the motivations of choosing graphene as the sensing membrane will be discussed and the preliminary testing results of graphene extended gate ISFET will be shared.

BIOGRAPHY

Zeng Zhe graduated with bachelor's degree of Electrical and Electronic Engineering from Nanyang Technological University (NTU) in 2016. He is currently purchasing PhD degree at Electrical and Computing Engineering (ECE) of National University of Singapore (NUS). His research interests are in the area of two-dimensional materials and their applications as pH sensors.

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