

## SEMINAR ANNOUNCEMENT

### DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Faculty of Engineering

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

**Area: Microelectronic Technologies & Devices**

**Host: A/Prof Zhu Chun Xiang**

|         |   |                                                                                                                                                                                                                                         |
|---------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TOPIC   | : | Surface Plasma Treatments Of Graphene And Its Effect On Drift And Sensitivity Of Graphene-Based EG ISFETs                                                                                                                               |
| SPEAKER | : | Mr Zeng Zhe<br>Graduate Student, ECE Dept, NUS                                                                                                                                                                                          |
| DATE    | : | Tuesday, 27 July 2021                                                                                                                                                                                                                   |
| TIME    | : | 2.00PM to 2.30PM                                                                                                                                                                                                                        |
| WEBINAR | : | Join Zoom Meeting<br><a href="https://nus-sg.zoom.us/j/82548801259?pwd=T2ZOYzUwSFZ2U0ZhRE4xNjVYZFVlZz09">https://nus-sg.zoom.us/j/82548801259?pwd=T2ZOYzUwSFZ2U0ZhRE4xNjVYZFVlZz09</a><br>Meeting ID: 825 4880 1259<br>Passcode: 980887 |

### ABSTRACT

CVD Graphene-base Ion Sensitive Field Effect Transistors (ISFETs) have been previously examined to exhibit low-drift, low-hysteresis behaviours, resulting in stable pH readings. In this work, the graphene ISFETs have been further investigated by plasma treatment on graphene surface. The effects of surface treatment on the sensitivity and drift of graphene ISFETs have been studied and it is found that freshly made high-quality pristine CVD graphene has low sensitivity to pH; the CF<sub>4</sub> plasma treated graphene has moderate sensitivity; while the O<sub>2</sub> plasma treated graphene has higher sensitivity and better stability.

### 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.

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