

## 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: Prof. Armin ABERLE (Main Supervisor) (Host)**

**Dr. Nitin NAMPALLI (Co-supervisor)**

TOPIC	:	Effect of Annealing on The Optical and Electrical Properties of $\text{VO}_x$ Thin Films for Silicon Solar Cells
SPEAKER	:	Mr. Yap Qi Jia Graduate Student, ECE Dept, NUS
DATE	:	Wednesday, 31 May 2023
TIME	:	10:00AM to 11:00AM
VENUE	:	Join Zoom Meeting: <a href="https://nus-sg.zoom.us/j/84978000605?pwd=N2ZLOHdsdVhrZ0lzV2hNaHUvWHJ3QT09">https://nus-sg.zoom.us/j/84978000605?pwd=N2ZLOHdsdVhrZ0lzV2hNaHUvWHJ3QT09</a>  Meeting ID: 849 7800 0605 Passcode: 536794

### ABSTRACT

Vanadium Oxide ( $\text{VO}_x$ ) is a p-type material that has been identified as a possible candidate to be used as functional thin film layers (such as hole transport layers) in advanced solar cells, e.g., dopant free heterojunction solar cells, which has the potential to lower production costs and complexity by avoiding the usage of toxic dopant precursors and expensive chemical vapour deposition tools. This work examines the effects of inert-ambient rapid thermal annealing on a wide range of optical, electrical of thermally evaporated  $\text{VO}_x$  thin films as well as and contact properties of  $\text{VO}_x/\text{Si}$  interfaces. The responses in optoelectrical properties are analysed and their underlying mechanisms and the implications for the development of high efficiency solar cells utilizing  $\text{VO}_x/\text{Si}$  interfaces are discussed.

### BIOGRAPHY

Mr. YAP Qi Jia is a graduate student at ECE and the Solar Energy Research Institute of Singapore (SERIS) at NUS. He received his B.Eng. (Electrical) degree from NUS in 2010 and has previously served as a research engineer and a senior specialist at the Data Storage Institute (DSI) and the Institute of Materials Research and Engineering (IMRE), respectively, at the Agency of Science, Technology and Research (A\*STAR). His research mainly focuses on the development of functional thin films for advanced solar cells.

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