

## Online Talk on “Plasma Processing Technology and Its Application in Semiconductor Industries”

**Date** : Saturday, 20 March 2021  
**Time** : 9.00 a.m. – 12.15 p.m.  
**Venue** : ZOOM Application  
**Speaker** : Assoc. Prof. Dr. Nafarizal Nayan, UTHM

### Synopsis

The current pandemic of COVID-19 had transformed us into the new norm of communication. Most engineers, academicians, students, and parents have to rely on computers and smartphones for their online meetings, online lecture, online classroom, etc. The future is very much dependent on these computers, smartphones, and gadgets. More and more functions have been embedded in the devices and the core brain to this functionality is the processor inside the devices. In order to add more application to the electronic devices, the processor has become very dense and compact where the size between the chip inside the processor has narrow down to nano-scale level. The fabrication of this processor is not possible without plasma processing technology. Plasma has been used to deposit thin film at the nano-scale level and also to remove (etch) the unnecessary material at the nano-scale control. Plasma tools such as sputter deposition, plasma-enhanced chemical vapor deposition, and reactive ion etching systems are widely used in semiconductor industries. Most of the plasma tools in Malaysia were imported from overseas and it has been calibrated for its optimized output. In order to prolong the lifetime of these plasma tools, frequent maintenance and cleaning are essential. A fundamental understanding of how the plasma processing tools are operating is also essential. In this half-day talk, we will introduce how to create plasma and its applications focusing on the semiconductor industries.

Time	Tentative Program
8.30 a.m. – 9.00 a.m.	Registration
9.00 a.m. – 9.10 a.m.	Welcome Speech by IEM Southern Branch Organizing Committee
9.10 a.m. – 10.15 a.m.	Session 1: Introduction to plasma processing technology
10.15 a.m. – 10.30 a.m.	Break
10.30 a.m. – 11.45 a.m.	Session 2: Plasma processing for semiconductor industries
11.45 a.m. – 12.15 pm	Question and Answer Session

### About the Speaker:

Dr. Nafarizal Nayan received his Bachelor Degree in Electrical Engineering, Master Degree in Electrical Engineering and PhD in Electrical Engineering from Nagoya University, Japan in 2003, 2005 and 2008, respectively. He received Japan Monbusho Scholarship during his bachelor and master degree studies and KUITTHO’s scholarship (currently known as Universiti Tun Hussein Onn Malaysia, UTHM) for his PhD study. In 2008, he joined UTHM after finishing his PhD Degree at Nagoya University. His permanent position is at Department of Electronic Engineering, Faculty of Electrical and Electronic Engineering. He headed Microelectronic Laboratory and Microelectronic and Nanotechnology – Shamsuddin Research Centre (MiNT-SRC) at UTHM in 2009-2013 & 2016-2018. Microelectronic Lab is a industrial standard cleanroom facility with class level 100, 1000 and 10 000. Since 2019, he has been appointed as Director at Institute for Integrated Engineering (I2E) where he manage the operational of five Centre of Excellences in UTHM. MiNT-SRC is one of the Centre of Excellence under I2E. He was promoted to Associate Professor in 2012. He has been engaged in the research of the characterization and design of low temperature plasma system using vacuum and non-vacuum methods. His research interest is on thin film deposition, plasma diagnostics, plasma processing, and plasma system modification. From 2013 to 2015, he visited the Quantum Science Engineering, Hokkaido University for collaboration research on CZTS thin film fabrication using sputtering technique and synthesis and diagnostics of metal nanoparticles. He is the author and co-author of more than 80 ISI-journal papers, 130 SCOPUS-indexed proceedings and 4 international invited talks. To date, he received more than RM 1.3 million research fund as project leader.

### Participant Fees:

	Online
IEM Member	RM 50.00
Non-Member	RM 100.00

**Closing Date: 19<sup>th</sup> March 2021**

The webinar is strictly limited to **90 participants** only. Registration will be on a first-come-first-serve basis. Kindly return the reply slip to the IEM (SB) office before **19<sup>th</sup> March 2021** together with a non-refundable cheque for the participant fees made payable to **The Institution of Engineers, Malaysia (Southern Branch)**. Alternatively, you could bank-in the participant fees into the Institution's Maybank Current Account (No. 5-013920-15708), and to facsimile both the Bank-in and Reply Slips to the Institution. The Institution requests all members co-operation in ensuring fees are paid in advance to the seminar. Please also be reminded that fees will not be refunded to absent participants who have paid, and to also note that all reservations must be paid despite participant cancellations. Thank you for your continuous support of the Institution.

Chairman, Sub-Committee on Seminar and Technical Talk, IEM (SB)

BEM Approved  
CPD/PDP Hours: 3.0  
Ref No: IEM21/SB/069/T (w)

**REPLY SLIP**

To: Hon. Secretary, The Institution of Engineers, Malaysia (Southern Branch) **Fax: 07 – 3363406**

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Via ZOOM Application

*Details of Online Login ID will be provided after registration*

I wish to attend the above workshop. I enclosed herewith a cheque no..... for the amount of RM..... as payment for the participant fee.

Name: ..... Membership No: ..... I/C No: .....

Tel (O): ..... Tel (H/P): ..... E-mail: .....

**(COMPULSORY)**

Company's Name: .....

Signature: ..... Date: .....

- Note:**
- Kindly email to [iemsouthern@gmail.com](mailto:iemsouthern@gmail.com) the Reply Slip together with the payment slip for confirmation.
  - Attendance by representative will not be issued with the Certificate of Attendance.
  - Participants are to login with FULL NAME as verification of Attendance for the whole duration of the event.

**PERSONAL DATA PROTECTION ACT**

*I have read and understood IEM's Personal Data Protection Notice published on IEM's website at [www.myiem.org.my](http://www.myiem.org.my) and I agree to IEM's use and processing of my personal data*