

Technical Talk

Manipulating materials for sustainability and performance: Route for Advanced Healthcare and Electronics

Synopsis

As global demand for advanced technologies surges, responsible innovation is critical to ensuring long-term sustainability and ethical progress. Our work centers on the development and integration of novel, sustainable materials into key sectors such as healthcare and electronics, with a particular emphasis on printed and flexible devices. By unlocking mechanisms found in nature and manipulating structural properties, such as in bio-derived polymers and nanocomposites, we aim to preserve biodegradability while enhancing performance and flexibility.

In healthcare, these materials are being used to create biodegradable implants, responsive drug delivery systems, and energy-efficient wearable and flexible medical devices. In electronics, we are engineering materials for low energy consumption, recyclability, and compatibility with printed and flexible form factors, helping align our innovations with global sustainability initiatives. Through this approach, we are establishing new pathways that underscore a materials-centric and responsible route to technological advancement.



About the Speaker
Dr. Shweta Agarwala

Dr. Shweta Agarwala is an Associate Professor at Aarhus University, Denmark, where she leads the Printed Electronics Technology Laboratory. Her research lies at the intersection of materials science, electronics, and sustainability. She pioneers the development of soft, flexible, biodegradable, and bioresorbable electronic materials and devices, aiming to reduce the environmental footprint of electronics. Her vision is to create a new generation of fully sustainable electronic systems with transformative applications in healthcare, wearables, smart textiles, and soft robotics.

Her work bridges disciplines, focusing on the development of sustainable electronic materials and devices, with a vision to drive environmental responsibility in electronics through the creation of fully biodegradable and flexible devices.



9 Sept 2025 (Tues)



10.00am – 12.00pm



**Universiti Teknologi PETRONAS,
Seri Iskandar, Perak**

BEM CPD Hours: 2

Ref: IEM25/PG/446/T

FREE ADMISSION

REGISTER NOW

event.iempenang.org

Moderators:

- **Ir Dr Huzein Fahmi bin Hawari**
- **AP Dr Zainal Ariff**

This event is organized by:

