

Organised by:  
**PUBLIC SECTOR ENGINEERS SPECIAL INTEREST GROUP (PSESIG), IEM**

**BEM APPROVED CPD: APPLYING**

**REF NO: APPLYING**

## **WEBINAR TALK ON IOT BASED ENVIRONMENTAL ACID DEPOSITION SYSTEM: ENGINEERING EXPERIENCE AND HANDS-ON IMPLEMENTATION**

**Date : 31 March 2026 (Tuesday)**

**Time : 11.00 am - 1.00 pm**

**Platform : ZOOM Webinar**

### **Registration Fees:**

- **Student Member : FOC**
- **IEM Member : RM 15.00**
- **Non-Member : RM 70.00**

### **Synopsis:**

Acid deposition is a critical environmental concern due to its adverse impacts on ecosystems and built environments. It contributes to soil and water acidification, affecting forests, lakes, and rivers, while also causing corrosion of metals, concrete, stone buildings, and cultural heritage structures. To understand its dose-effect relationship, five key monitoring parameters are used: Wet Deposition (rainwater), Dry Deposition (air concentration), Soil and Vegetation, Inland Aquatic Environment, and Catchment. Malaysia is responsible for providing data on wet and dry deposition, collected using the Environmental Low-Cost Acid Precipitation Sampler IoT-Based (EL-APSIoT). This effort supports EANET, an international initiative involving 13 East Asian countries aimed at addressing acid deposition and air pollution arising from rapid industrialization. EANET emphasizes high-quality open data, knowledge sharing, capacity building, and public awareness. The webinar presents an engineering-based solution through the development of an IoT-based low-cost monitoring system, detailing system redesign, sensor optimization, firmware logic, and field validation in Malaysian environmental conditions, while ensuring compliance with EANET and WMO GAW guidelines.

### **Speaker : Ir. Ts. Muhammad Ikmalnor bin Mustafa Kamal**

Ir. Ts. Muhammad Ikmalnor bin Mustafa Kamal is an Assistant Meteorological Officer at the Malaysian Meteorological Department, specializing in atmospheric science and cloud seeding. He holds a Bachelor of Mechanical Engineering (Hons) from Universiti Teknologi MARA and is a registered Professional Engineer and Professional Technologist in Atmospheric Science and Environment Technology. Since 2019, he has been responsible for maintaining and calibrating atmospheric monitoring instruments, providing technical training, supporting procurement, and contributing to research and development using low-cost sensors and microcontrollers. His work includes CFD analysis, UAV cloud seeding collaboration, innovation projects, and peer-reviewed publications in meteorology and environmental instrumentation.

