The Institution of Engineers, Malaysia
(Penang Branch)

Online Technical Talk

Leveraging CFD for Resilient Malaysian Projects: Integrating Advanced Design, Risk Assessment, and ESG

Synopsis

Complex engineering projects in Malaysia, whether in the built environment, infrastructure, or industry, are inherently linked to the behaviour of fluids and demand rigorous risk management and commitment to sustainability.

Computational Fluid Dynamics (CFD) is a crucial simulation tool providing the analytical power to address these challenges head-on. CFD is applied across diverse project types to enhance resilience and performance. This includes simulating wind impacts on tall buildings to ensure structural integrity and analysing internal airflow for optimising energy efficiency and comfort in Green Buildings. For critical facilities like Data Centres, CFD is vital for detailed thermal management, ensuring operational resilience and optimising energy use.

In industrial settings, it's used to analyse and optimise processes involving mixing, heat transfer, and fluid transport, and to design systems for emission control. A key strength of CFD lies in supporting risk assessment. It quantifies fluid-related hazards such as extreme environmental forces, potential pollutant concentrations, and thermal risks, providing essential data for evaluating vulnerabilities and developing effective mitigation strategies. These applications, by improving efficiency, safety, and environmental performance, directly contribute to project sustainability and broader ESG goals, aligning with Malaysian standards and regulatory requirements.

CFD empowers project teams to deliver high-performing, resilient solutions for Malaysia's development needs.

30 July 2025 ((Wed)

6.30pm-8.30pm

BEM CPD Hours: 2
Ref: IEM25/PG/222/T (w)

IEM Member : RM15
Non-IEM Member: RM50

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About the Speaker

Assoc. Prof. Ir. Dr. Ban Zhen Hong

Assoc. Prof. Ir. Dr. Ban possesses more than a decade of comprehensive expertise in computational fluid dynamics (CFD) modeling across a broad spectrum of systems, with a primary emphasis on the assessment of safety measures and the identification of sources in hazardous gas dispersion. He has further advanced the field by integrating artificial intelligence into various applications within chemical engineering.

Since his appointment at Xiamen University Malaysia (XMUM) in 2016, he has been deeply engaged in the delivery of specialized education in chemical process safety and modeling-focused disciplines. Moreover, he has successfully led a few industrial research initiatives, contributing significantly to the advancement of industry practices and academic knowledge.