The Institution of Engineers, Malaysia

ORGANISED BY:
OIL, GAS AND MINING TECHNICAL DIVISION (OGMTD), IEM

BEM APPROVED CPD: APPLYING
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WEBINAR TALK ON
MEMBRANE TECHNOLOGY FOR CARBON CAPTURE IN OIL AND GAS INDUSTRY

Date : 14 March 2026 (Saturday)
Time : 9.00 am - 11.00 am
Platform : Zoom Webinar

Registration Fees:

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

Synopsis:

Membrane technology is an emerging technology for carbon capture in the oil and gas industry, offering a compact, energy-efficient and chemical-free alternative to conventional absorption processes. Membrane is a selective barrier to separate CO_2 from gas streams based on differences in solubility or diffusivity, enabling continuous operation with minimal chemical consumption. In natural gas processing, membranes help remove CO_2 to meet pipeline specifications and improve fuel quality. For post-combustion applications, advanced polymeric, inorganic, and mixed-matrix membranes are being developed to enhance permeability and selectivity, lowering operational costs.

The modular configuration of membrane systems allows flexible installation in offshore platforms, refineries, and gas treatment plants where space and weight are constraints. Although challenges remain—such as short membrane lifespan, hydrocarbon losses and low tolerant to impurities, ongoing research is driving significant improvements, making membrane technology a promising pathway for reducing carbon emissions across the oil and gas value chain.

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This webinar covers the introduction on membrane technology, its application in oil and gas industry and challenges during the implementation of this technology in oil and gas industry.

Speaker: Ir. Dr. Lau Kok Keong

Ir. Dr. Lau Kok Keong, is currently holding the position of Associate Professor at Chemical Engineering Department and Head for Centre of Carbon Capture, Utilisation and Storage (CCUS), Universiti Teknologi PETRONAS, UTP. He has joined UTP since 2007. He is a Chartered Marine Engineer (UK) and Professional Engineer in Malaysia. His expertise covers the Carbon Capture & Utilization include membrane separation, absorption, simulation and process scale-up. Dr Lau has published more than 130 high-impact journals and have been participating in various consultancy and research projects with the total value > USD 5 millions. He also actively collaborates with various research institutions and companies from different countries include Thailand, Netherland, Denmark, UK, etc. In term of innovation, he has filed more than 10 patents/copyrights and commercialized 1 software product.