Organised by Material Engineering Technical Division (MaTD)

IEM
The Institution of Engineers, Malaysia

WEBINAR TALK ON

ADVANCED MATERIALS SELECTION STRATEGIES FOR ROTATING EQUIPMENT IN MODERN OIL & GAS OPERATIONS

Speaker:

Mohamed Fuad Al Farabi Shazi Bin Shaarani

28 MARCH 2026, SATURDAY

10.00AM - 12.00PM

Registration Fees:
Student Members : Free
IEM Members : RM 15.00
IEM Non Members : RM 70.00
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BEM Approved CPD: 2
Ref. No.:IEM26/HQ/012/T(w)

SYNOPSIS

Rotating equipment, such as compressors, pumps, and turbines, operates under some of the most demanding conditions, specifically harsh environments, in the oil and gas industry. Elevated temperatures, corrosive process media, high vibration, erosive particulates, and exposure to sour service environments place stringent requirements on material performance and reliability. Inadequate or outdated material selection remains a leading cause of premature failures, unplanned shutdowns, and escalating lifecycle costs.

This webinar explores advanced, fit-for-purpose material engineering and selection strategies specifically for rotating machinery used in upstream, midstream, and downstream applications. The session will cover the behaviour and suitability of common metallurgy families, carbon steels, low alloys, stainless steels, nickel-based alloys, duplex and super duplex grades, as well as emerging surface-enhancement technologies such as thermal spraying, abradable coatings, and diffusion treatments.

Participants will gain insights into how materials respond to corrosion, erosion, high-temperature creep, hydrogen embrittlement, and stress corrosion cracking, as well as how to match material properties with real-world process conditions. Practical case studies will demonstrate how proper material selection can improve reliability, extend equipment life, and mitigate risks associated with sour gas, high CO_2 systems, wet gas compression, and heavy-duty hydrocarbon streams.

SPEAKER'S PROFILE

Mohamed Fuad Al Farabi Shazi is a Technical Manager & Staff Engineer for Rotating Equipment, working at PETRONAS with more than 15 years of working experience in the Oil & Gas Industry. He graduated from Universiti Teknologi PETRONAS with a degree in Mechanical Engineering (Hons.) in 2008. He began his career as a Reliability Engineer for two years before transitioning to the Maintenance Department as a Field Maintenance Engineer under the PETRONAS Upstream Division, where he covered aspects of rotating equipment operation and maintenance. He then held other job functions, including Machinery Remote, Monitoring & Diagnostic Engineer, to lead the deployment of an in-house digital solution for machinery monitoring and analytics. In 2019, he moved to the PETRONAS Projects, Technology, Health, Safety, Security, & Environment (PT&HSSE) Division as a Senior Rotating Engineer, where he was responsible for various technical assignments, service requests, and greenfield & brownfield projects involving the upstream, downstream, and midstream sectors.