



# POWER TALK ON EMERGING TECHNOLOGIES FOR ZERO LIQUID DISCHARGE: DRIVERS AND CHALLENGES IN THE INDUSTRY

by **Ts. Irene Lock Sow Mei**

Date : 8th September 2023

Time : 4.30 p.m. - 5.30 p.m.

Venue : Lounge 2(Hall 2), Kuala Lumpur  
Convention Center (KLCC)

BEM CPD Approved Hours : 0.5 Hours

CPD Ref Num : IEM23/HQ/386/T



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## Synopsis

One of the imperative requirements for sustainable development and reducing freshwater withdrawal is through water reduce, reuse, and recover initiatives. Zero Liquid Discharge started to gain momentum in the past decade due to significant increase in water demand, particularly in region that is suffering from water scarcity issues. Zero Liquid Discharge (ZLD) or Minimal Liquid Discharge (MLD) is an ambitious wastewater management strategy that eliminates liquid leaving the facility boundary, with majority of the water being treated for reuse.

Although ZLD and MLD demonstrated promising prospects to minimize effluent discharge and augment water inventory, the feasibility is largely affected by the balance between the advantages against the challenges achieved from water recovery. In this session, Irene will be sharing on the motivations and benefits of achieving ZLD in the industry for water sustainability. She will also highlight on the evolution of technologies to achieve ZLD, from thermal evaporation to membrane filtration processes, with a comprehensive comparison of the advantages, prospects, and limitations of both conventional and emerging ZLD processes.

Lastly, Irene will also share on some of challenges to realize ZLD, including high capital/operation costs, energy demand, technical complexity, environmental impacts, and dynamic characteristics of influent. She will be sharing insights and best practices for successful selection and deployment of technology and provide a vision for the future of sustainable water management. Attendees will leave with a deeper understanding of the challenges and opportunities associated with zero liquid discharge, and how emerging technologies can be leveraged to achieve these goals.

## Biodata of the Speaker

Irene Lock Sow Mei graduated from Universiti Teknologi Petronas with a Bachelor Degree in Chemical Engineering and she is the award recipient for UTP's Chancellor Gold Award, Vice Chancellor Gold Award, Best Final Year Project Gold Award and Capstone Award for Best Plant Design Project. She was also the winner for the Institution of Engineers Malaysia (IEM) Best Engineering Graduate Gold Award.

Serving as a process engineer in Group Technical Solutions PETRONAS since 2015, Irene has 9 years of experience in the oil and gas industry. She has experiences in performing industrial and consultancy projects, ranging from engineering design; technology improvement; innovation development; to digital transformation. Her expertise and interest are in water technology and water treatment, whereby she oversees the development and implementation for technologies for effective water management and treatment. She is also the office bearer for the ASEAN Academy of Engineering and Technology (AAET) and Institution of Engineers Malaysia (IEM).

Irene was the winner for The Institution of Chemical Engineering (IChemE) Young Industrialist Award 2019. Apart from that, she was also the honouree for Anugerah Belia Cemerlang Malaysia 2020 and Eco-Champion Award 2021 by the World Wildlife Fund (WWF) in recognition with her efforts to promote water sustainability. Irene also gained world recognition as the first south east Asian to emerge as winner for the International Young ADIPEC Technical Professional of The Year 2019 under the patronage of the President of the United Arab Emirates and Egypt Petroleum Show Nex-Gen Female of the Year 2022 Award.



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