

ORGANISED BY MATERIAL ENGINEERING TECHNICAL
DIVISION, IEM



HALF DAY ONLINE COURSE ON
**CHALLENGES
AND INSIGHTS
IN
CORROSION
MANAGEMENT**

For Online Rate, Register via IEM Website

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Speakers:

**Dr. Nazatul Liana Sukiman
&
Ms. Michelle Lau**

**18 AUGUST 2022
THURSDAY
9.00 AM - 1.00 PM**

SYNOPSIS

SESSION 1: Understanding Corrosion Under Insulation (CUI)

Corrosion-under-insulation (CUI) refers to the external corrosion of piping and vessels that occurs underneath externally clad or jacketed insulation owing to the penetration of water. By its very nature, CUI tends to remain undetected until the insulation and cladding or jacketing are removed to allow inspection or when leaks to atmosphere occur. CUI is a major common problem on a worldwide basis that is shared by all the refining, petrochemical, power, industrial, onshore and offshore industries. It is not a new problem, but it can be a serious problem. CUI has been responsible for many major leaks that lead to health and safety incidents, result in lost production and are responsible for the large maintenance budgets which are required to mitigate the problem. Several factors, including the local/ambient environment, system design, and the piping installation process, can influence how CUI initiates and propagates. Understanding these factors and the mechanism of CUI is important in developing mitigation approach for effective management of corrosion.

SESSION 2: Corrosion in the Real World

Corrosion, a detrimental problem experienced by metallic structures worldwide. The destructive effect from corrosion is significant in critical industry sectors, from marine and infrastructure to oil and gas as well as power generation and utilities. Major consequences of corrosion can be further divided into direct and indirect consequences, which has major cost implications, health, safety and environmental issues, loss of production and downtime, loss of product, loss of efficiency and the list goes on.

As new infrastructure development is on the rise, corrosion control is to be implemented from the start, and management and corrosion mitigation of aging assets are the key. It is crucial for corrosion professionals to reinforce the message that corrosion control planning is a component that must be integrated for all new infrastructure development, and this applies to all fields of engineering.

Being sustainable is just not about minimizing negative impact on the environment and the earth's natural resources. The global cost of corrosion is estimated to be at US\$2.5 trillion (~3.4% of the global GDP). Are we building sustainable projects? From a recent global study, 15 - 35% of the cost of damage can be saved by implementing corrosion prevention best practices. The most significant outcome of the study was its identification of the need for a change - within organizations worldwide - in how corrosion decisions are made and communicated.

This can be prevented if a Corrosion Management Plan is considered during the structure's engineering design phase. One of the first steps in managing a system's integrity is the identification of potential root causes. A corrosion management plan shall involve diagnoses of possible corrosion causing factors, and corrosion control or prevention techniques that can be implemented. Standards for infrastructure design, construction and maintenance have been developed worldwide to address this issue.

Therefore, it is necessary to have a well-planned and managed corrosion management system to improve asset design life, to increase public safety, reduce risks, and minimise detrimental corrosion effects and costs.

PROGRAMME

9.00AM - 10.45AM UNDERSTANDING CORROSION UNDER INSULATION (CUI)
10.45AM - 11.00AM Q&A
11.00AM - 12.45PM CORROSION IN THE REAL WORLD
12.45PM - 1.00PM Q&A

SPEAKER'S PROFILE

Nazatul Liana Sukiman received Bachelor's degree in Materials Engineering from University of Malaya in 2004. In 2014 she was awarded the Ph.D degree in corrosion research at Monash University, Australia. She currently serves as a Senior Lecturer at the Department of Mechanical Engineering, Universiti Malaya. She is supervising a number of research staff at Postdoctoral, Ph.D and Master levels for research projects funded by the public and private sectors. Her research focuses on corrosion under insulation, electrochemical techniques in corrosion assessment and tribo-corrosion.

Michelle Lau is a NACE International Cathodic Protection Specialist and she is serving as the Managing Director at Mach3 Engineering Sdn. Bhd., a role which she has held since its inception.

Her career is in the field of Cathodic Protection for the Oil and Gas, Power Generation and Water Utility industry. She has experience in handling various projects around the Asia Pacific region which includes developing design specifications, performing inspections and audits for cross country pipelines, storage tanks, plant piping, marine structures, intake and offshore structures. She is also one of the very few certified Cathodic Protection Specialist in Malaysia.

Apart from that, she has been invited to give technical presentations on the awareness of corrosion, cathodic protection and corrosion control at many international conferences and corrosion management workshops. Her passion and tireless contribution is in combating corrosion as well as advocating female participation and contribution in the engineering fraternity.

Despite her busy work life, she is actively involved in both local and international engineering associations as a voice of the industry. Presently, Michelle is on the Board of Directors of the Association for Materials Protection and Performance (AMPP); prior to this, she served as the NACE International Institute Vice President, and NACE International East Asia and Pacific Area Director. As a staunch believer in coaching and grooming youth to the industry, Michelle was appointed to the Industrial Advisory Panel for Materials Engineering Programme at University Science Malaysia. She is also actively guiding undergraduates in organising activities to create awareness of corrosion prevention.

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