The Institution of Engineers, Malaysia

WEBINAR
TALK ON CORROSION IN OIL & GAS

CPD Hours : 2 CPD Ref No : IEM22/HQ/081/T(w)

Oil, Gas and Mining Technical Division

SYNOPSIS

Top of line corrosion (TLC) in CO2 wet gas pipeline is a major threat to oil and gas industry, where difference in temperature of internal pipeline and outside environment leads to condensation of water in a stratified flow regime. This condensed water is corrosive to pipelines' surface containing organic acids and dissolved acidic gases such as CO2 and H2S. In oil and gas field, gas condensate is usually present in the pipeline. However, only gas condensate-free TLC systems were usually studied. This condensable hydrocarbon may affect condensation process as it is immiscible with water which leads to different wettability on pipeline surface. On top of that, the control and monitoring of TLC is challenging to pipeline operators since it requires corrosion inhibitor with volatile properties to reach the upper part of pipe. Typically, conventional corrosion inhibitor is applied to mitigate corrosion by deploying it via continuous injection or batch treatments. Such inhibitor functions by forming a protective film or layer on the steel surface which consequently contribute to the reduction of corrosion. However, the method is only feasible for bottom-of-line corrosion (BLC) because the inhibitor is normally not volatile and are absent at the top-of-line unless they are physically transported there by droplet transport or non-stratified flow. In order to mitigate both bottom-of-line and top-of-line corrosion, volatile corrosion inhibitor (VCI) needs to be applied. However, the technology development of VCI is still low in Malaysia as most of the product are made from international company. This was due to the lack of knowledge and technology in TLC specifically in VCI testing in Malaysia. However, InCORE UiTM is the pioneer in TLC and VCI R&D where volatile and non-volatile corrosion inhibitor are our main focus of development since the technology was successfully transferred from USA since 2015.

Thursday I 24 March 2022 I 10AM – 12PM

Registration Fee:

Student Member: Free | IEM Member: RM15 | Non-Member: RM70

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SPEAKERS

Michelle Lau

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.

Dr. Najmiddin Yaakob

Dr. Najmiddin Yaakob holds a B.Eng. Degree (Hons) in Chemical Engineering from Universiti Teknologi Malaysia (2003), a M.Sc. in Chemical Engineering (Corrosion) from Universiti Teknologi MARA (2007) and a Ph.D. in Chemical Engineering from Institute for Corrosion and Multiphase Technology, Ohio University, USA (2015). I have over 14 years of lecturing and research experience in chemical engineering field especially in process separation, reaction engineering and pipeline corrosion. I used to be in the industry as R&D Engineer in the year 2004. I am currently a senior lecturer at the School of Chemical Engineering, Universiti Teknologi MARA (UiTM) and previously appointed as Head of Oil and Gas Engineering Studies Center in year 2015 and Deputy Dean (Student Affairs) in year 2017. My area of research interest are mainly in the oil and gas pipeline corrosion. I have involved in various pipeline corrosion problem mainly from the oil and gas industries such as Petronas, PTTEP, Chevron and DNV-GL which includes top of the line corrosion in sweet and sour environment, sour corrosion mechanism, elemental sulfur corrosion in sour glycolic environment, elemental sulfur corrosion mitigation by using sulfur solvent and inhibitor and corrosion inhibitor/coating from palm oil based. I have managed to secure industrial grant and consultation worth of RM 1.1 Million. I am an associate member of the Institution of Chemical Engineers (IChemE), UK, graduate member of Board of Engineer (BEM), former Chairman of National Association Corrosion Engineers (NACE) International Founding Malaysian Section, Head of Industrial Corrosion Research Center (InCORE) and currently the treasurer for The Association for Materials Protection and Performance (AMPP) Malaysia Chapter.

Nurul Asni Mohamed

Nurul Asni Mohamed has 14 years of lecturing and research experience in chemical engineering field especially in process separation, reaction engineering and pipeline corrosion. She used to be in the industry as R&D Engineer in the year 2004. She is currently a senior lecturer at the School of Chemical Engineering, Universiti Teknologi MARA (UiTM) and previously appointed as Head of Oil and Gas. Engineering Studies Center in year 2015 and Deputy Dean (Student Affairs) in year 2017. The area of research interest are mainly in the oil and gas pipeline corrosion. She have involved in various pipeline corrosion problem mainly from the oil and gas industries such as Petronas, PTTEP, Chevron and DNV-GL which includes top of the line corrosion in sweet and sour environment, sour corrosion mechanism, elemental sulfur corrosion in sour glycolic environment, elemental sulfur corrosion mitigation by using sulfur solvent and inhibitor and corrosion inhibitor/coating from palm oil based. She have managed to secure industrial grant and consultation worth of RM 1.1 Million. She also is an associate member of the Institution of Chemical Engineers (IChemE), UK, graduate member of Board of Engineer (BEM), former Chairman of National Association Corrosion Engineers (NACE) International Founding Malaysian Section, Head of Industrial Corrosion Research Center (InCORE) and currently the treasurer for The Association for Materials Protection and Performance (AMPP) Malaysia Chapter.

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