

Microbiologically Influenced Corrosion

Consultant / Trainer

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The **Petrogenium. Microbiologically Influenced Corrosion (MIC)** course will provide the participants with an up-to-date, relevant and most important of all, with a practical approach to bacterial and MIC fundamentals and their mitigation process. The main themes of the course are: bacterial basics and growth conditions, bacterial and MIC monitoring, assessment and control. The course offers various MIC control techniques and solutions, all based on years of field experience from oil and gas industry, as well as many other industries where MIC is a major integrity threat.



Participants

This **Petrogenium.** course is useful for any discipline which contributes to the asset integrity management system (AIMS) in general and MIC in particular. To attend the course, one does not require any specific microbiology or engineering background; however, some basic field experience is beneficial. There are numerous group exercises and MIC case studies incorporated into the course to further help the participants to better appreciate the various aspects of bacterial and MIC mitigation process such as: bacterial and MIC monitoring, assessment and control.



Learning Objectives

After completion of this course the participant will learn to:

- Appreciate the MIC deterioration mechanisms encountered in the industry
- Appreciate the basic required conditions for bacterial growth
- Design and utilise various bacterial and MIC monitoring techniques
- Implement various MIC mitigation solutions
- Utilise corrosion management for improved MIC control and mitigation

Programme

DAY 1

- Corrosion and Corrosion Engineering in the oil & gas industry
- MIC in the Upstream Oil & Gas Industry
- Microorganisms and Bacterial Types in the Oil & Gas Industry
- Bacterial Nutrition & Growth Conditions
- Pre-Course Assessment

DAY 2

- Bacterial Metabolism
- Biofilm Basics
- Introduction to SRB & its Deterioration Mechanisms
- Predominant MIC Mechanisms & Their Repercussions in the Oil & Gas Industry
- Bacterial Problems: Seawater Injection Systems
- Bacterial Problems: Firewater Systems
- Bacterial Monitoring
- Bacterial Analysis Techniques: Traditional and Molecular Microbiological Methods (MMM)

DAY 3

- MIC Mitigation Process
- Water Removal
- Biociding - Oxidising & Non-Oxidising Chemicals
- Nitrate Treatment

DAY 3 cont.

- MIC & Design, Materials Selection, Coatings & CP

DAY 4

- Integrity and Integrity Management Concepts
- The Classical Integrity Management View
- Corrosion Management Background in the UK's Upstream Oil & Gas Industry
- Corrosion Management and Integrity Management Measure Concepts
- Corrosion Control Matrices and Corrosion Key Performance Indicators

DAY 5

- Improved MIC Mitigation Through Corrosion Management Applications
- MIC & Inspections
- MIC & Corrosion Monitoring & Fluid Sampling
- MIC & Management Requirements
- MIC & RBI
- Introduction to MIC Mitigation in SWIS
- Introductions to MIC Models
- Conclusions & Recommendations
- Post-Course Assessment

Why select Petrogenium.?

The above support will be provided by principal consultants with 20+ years world-class experience in the technology and hands-on know-how from operation of refinery units.

Contact Petrogenium.:

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Because Experience Matters