Reducing Corrosion Risks and Costs: Mission Impossible?
The oil and gas industry has now had several decades of oil exploration and production. It has also had to reinvent itself numerous times during this period. But when oil prices fell by more than 50 percent, from $105 a barrel in summer 2014 to below $45 a barrel in Q1 2015, the industry was compelled to restructure and vigorously cut costs. As a result, companies embarked on a transformation programme to secure their ability to survive the structural change in commodity prices and create a stronger foundation on which to build when markets recover. Better capital discipline and aggressive cost management without any compromises on safety performance have became the main goals for the industry.

In this harsh economic environment, corrosion management faces new challenges on a number of fronts, ranging from keeping ageing assets operating safely to pursuing cost effective design of new projects, often with extended design lives of up to 40 years. This event intends to explore these challenges, ranging from initial material selection to full life cycle operational corrosion management.

The event programme will allow for ample meeting and networking opportunities for all of the conference attendees, including at the official conference dinner and the exhibition, which will be open on all conference days. Attendees typically include academics and industry experts, as well as professionals in oil and service companies.

The morning conference sessions allow for presentation of new projects, technologies, challenges, and issues. The afternoon discussion sessions will give attendees the opportunity to debate and review a range of key industry topics. Following the popularity of the workshop sessions at recent conferences, this year the workshops will be held at distinct times, ensuring that all attendees have an opportunity to participate.

Following the success of the 2014 event, SPE is pleased to be able to offer corrosion management based training courses prior to the start of the conference.

During the conference, poster sessions will support the presentation of research work and technical project summaries. It is particularly aimed at graduate and postgraduate activities, and junior industry professionals. Posters will be judged during the conference, with the best poster being awarded the poster prize during the wrap-up session.

The committee cordially invites you to the 2016 SPE International Conference and Exhibition on Oilfield Corrosion and looks forward to seeing you in Aberdeen.

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### Event Focus and Chairs’ Remarks

**Dr. Zeinab Marsh**

Chevron UK

**Integrity and HSE Assurance Consultant**

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### Schedule of Events (as of January 2016)

**Monday, 9 May 2016**

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<td>1030–1100</td>
<td>Coffee Break and Poster Session</td>
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<td>Coffee Break and Poster Session</td>
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**Tuesday, 10 May 2016**

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Programme Committee

Programme Committee Co-Chairs

John Macdonald  
Chevron UK

Dr. Zeinab Marsh  
Integrity and HSE Assurance Consultant

Mohsen Achour  
ConocoPhillips

Ismenia Alvarez  
Apache North Sea

Neil Bretherton  
Multi-Chem  
A Halliburton Service

Graeme Dicken  
Intertek

Jack Fraser  
BP

Dave Hillis  
Total E&P UK

Andrew MacDonald  
REDA Oilfield UK

Dr. Eugenia Marinou  
LR-Senergy

Jonathan Marsh  
Marsh CMI

Erling Skavås  
DNV GL Group

Torben Lund Skovhus  
VIA University College

Who Should Attend

- Corrosion Engineers
- Integrity Engineers
- Design Engineers
- Production Chemists
- Material Specialists
- Oilfield Microbiologists
- Inspection Vendors
- Chemical Vendors
- Academics

Topics Covered

- Case Studies
- Corrosion Testing and Modelling
- Corrosion Management
- Materials

Sponsors (as of 29 February 2016)

Sponsors (as of 29 February 2016)

Sponsoring at this prestigious event provides an excellent opportunity to gain maximum exposure to delegates who will be looking to shortlist potential suppliers and consultants for their own projects. Exhibitors and sponsors for both the SPE Oilfield Corrosion Conference AND the SPE Oilfield Scale Conference that follows it, receive a 15% discount on the total sponsorship fee. The following sponsorship options are currently available:

- Welcome Reception
- Conference Programme & Exhibition Guide
- Conference Proceedings
- AV Equipment
- Lunches
- Welcome Dinner

If you are interested in an option not listed here, please get in touch and we will be delighted to discuss a tailored package. Sponsorships are offered on a first come first served basis. For a detailed list of the sponsorship benefits and pricing, please contact Dean Guest at dguest@spe.org

Supporting Organisation

NACE INTERNATIONAL

Conference Bags

Lanyards

Sponsors (as of 29 February 2016)
To maintain a high degree of corrosion control under the current economic climate, operators must look for ways to improve efficiency and ensure that corrosion expenditures and programs are providing the greatest benefits possible. Some operators have struggled to achieve fully integrated corrosion management systems and thus may not have realized the potential benefits of this approach in the past. Indeed some operators ask why do we need a corrosion management system at all. Considering that the core processes in corrosion control can be viewed as threat assessment, prevention/mitigation, and monitoring; a corrosion management system should help ensure that these processes are carried out as efficiently and effectively as possible.

Communication, resourcing, organization and integration are considered some of the main key elements of corrosion management and will be discussed by our first Keynote speaker.

Corrosion control is an important part of the integrity management of any asset. A robust Corrosion Control system is established in the design phase by selecting materials and mitigation methods suited for the actual fluids they will be exposed to. It is maintained in the operational phase through monitoring, inspection, maintenance and testing. Application of the proper corrosion control measures aims to protect people, environment and assets through risk management, and reduce unscheduled down time and maintenance cost. Understanding the corrosion threats and how to mitigate them is important in order to avoid loss of containment. The industry and academia are continuously improving materials, corrosion mitigation methods, corrosion monitoring equipment and corrosion prediction modelling tools in order to avoid corrosion failures.
Conference Programme (as of 29 February 2016)

The presentations in this technical session cover a diverse range of topics related to corrosion control of assets including challenges in establishing the integrity status of subsea pipelines and investigation of severe tubing corrosion in a shale gas observation well.

1100–1300
**Corrosion Management**

*Session Chairs:*
Zeinab Marsh, Independent Consultant and Neil Bretherton, Multi-Chem A Halliburton Service

In today's difficult economic climate, there is increasing emphasis on cost effective corrosion management. Industry risks and challenges remain largely unchanged particularly with respect to ageing assets. This encompasses both basic corrosion mitigation through to the ultimate validation of its effectiveness through monitoring and inspection. The industry increasingly relies on risk based approaches to optimise mitigation, monitoring and inspection programmes, allowing operators to determine priorities and optimise corrosion management programmes.

Quantification of risk and determining the effectiveness of mitigation still present specific challenges. Whilst the risk associated with acid gas corrosion and its mitigation are relatively well understood more esoteric degradation mechanisms rely on largely qualitative risk ranking. Despite being responsible for the majority of failures in offshore environments, quantification of the likelihood of microbially driven failures remains elusive relying on operational factors such as intermittently flowing or stagnant fluids as indicators. New approaches to the prediction of susceptibility and detection of adverse microbial activity are discussed.

Inspection remains a critical element in the corrosion management process, demonstrating the effectiveness of mitigation to allow further refinement of the programme. Employing the most appropriate inspection strategy and recognising when it requires revision as the system evolves and morphology of metal loss change are critical to providing cost effective solutions. Understanding the efficiency and cost effectiveness of different inspection strategies against a range of corrosion mechanisms are vital to implementation of optimal solutions and will be discussed together with the selection of test methods based upon existing monitoring and inspection data.

1400–1530
**External Corrosion Workshop**

*Session Chairs:*
Jack Fraser, BP and Zeinab Marsh, Independent Consultant

External corrosion is one of the most significant challenges facing a mature basin, in terms of both the integrity of the assets and costs. With the current low oil price environment, fabric maintenance is often seen as an easy target for cost saving particularly when compared to activities that have a direct impact on production. This is not the first time that the Oil & Gas industry has entered a challenging phase. We need to learn from our past experience.

To manage the external corrosion threat, corrosion and inspection professionals not only need to be able to look for technical solutions to improve the efficiency of the process, they need to be able to quantify the risk and potential costs of deferring work. It is possible to combine cost saving and efficiency with safe operational management. However, smart thinking based on high quality risk assessment and an understanding of priorities is the key. This is our mission, but if we can work collaboratively it is not “Mission Impossible”.

This session will consider advances in inspection and coating technology as well as how we can fully understand the level of risk we are carrying and the mitigations and barriers required.

1600–1730
**Standardisation Workshop**

*Session Chairs:*
John Macdonald, Chevron UK and Rick Eckert, DNV GL

Standardization has been touted as the saviour or next great solution to issues in the Oil & gas industry as it is believed to be tied in to cost reduction and cost efficiency. It is important to note there are a very great number of benefits which can be realized but also it is important not to fall into the trap where innovation and ingenuity is stifled. Technology should be considered key and typically develops at a faster pace than regulation and standards development. It is also important to offer incentives for adoption as a number of companies are very worried about loss of competitive advantage and loss of proprietary knowledge. Speed of development and consensus can be perceived to be a major barrier to execution with at best a new standard being developed in typically a 2-3 year period. Focus should therefore be in the greatest value areas as overall scope could be considered to be immense, the sheer scale often putting people off in terms of overcoming the considerable inertia of the status quo.
The workshop will discuss:

- What should we standardize and the potential benefits
- How to promote awareness of standards and their effective role
- How to prioritize and possibility of simplification
- How to incorporate improvements and technology
- How best to achieve standards consensus and who to influence

**Tuesday 10 May 2016**

**0830–0900**

**Keynote Address**

*Speaker to be announced.*

**0900–1100**

**Materials**

**Session Chairs:**
Torben Skovhus, VIA University College and Dave Hillis, Total

The aggressive environmental conditions experienced in oil & gas production have always presented a significant challenge to the materials employed. With the trend towards exploiting more hostile reservoirs coupled with the necessity to maintain economic viability, the need for innovative materials has seldom been stronger. This technical session comprises a diverse range of papers on the topic, ranging from non-metallic materials and advanced high strength CRAs to nanocomposite coatings and novel alloys generated by additive manufacturing.

**1130–1330**

**Corrosion Testing and Modelling**

**Session Chairs:**
Andrew MacDonald, REDA Oilfield UK Ltd and Graeme Dicken, Intertek

Assessment of corrosion via practical methods in the laboratory and the field are an integral part of corrosion management, whatever the economic climate. This session will explore the modelling and testing of corrosion mechanisms in a number of different scenarios along with providing some real life practical applications.

**1430–1630**

**Corrosion Management to Decommissioning Workshop**

During the lifecycle of an oil and gas asset, activities are carried out that ensure the integrity of the asset is maintained from commissioning, through operations, to decommissioning. In recent years, the life extension of many assets has delayed the decommissioning. We are now maintaining the integrity of assets that were originally designed for 25-30 years, but are now approaching or exceeding 40 years since installation and commissioning.

The purpose of this workshop is to re-assess corrosion management systems presently in place, and look at how we can learn from our shared experience to increase the reliability and confidence in these systems as we move into the future.

We will assess what is required for corrosion management to cover the whole life cycle from Pre-feed, Design, through Operation and finally through to Life Extension and Decommissioning, and align our findings with the expectations of the UK HSE KP4 initiative.

**Session Chairs:**
Ismenia Alvarez, Apache North Sea and Jonathan Marsh, Marsh CMI

**1630–1645**

Wrap Up and Closing Remarks
Training Course

Wednesday, May 11

Corrosion Management and Microbiology Influenced Corrosion

**Discipline:**
Production and Operations & Projects, Facilities and Construction

**Description/Topics:**
The course will cover basic corrosion management principles, basic MIC mechanisms, use of molecular microbiological methods (MMM) in diagnosing and managing MIC, selection of MIC mitigation methods, selection and interpretation of MIC monitoring methods, case studies demonstrating MIC diagnostic tools, and demonstrate applicable sampling techniques/ equipment.

**Learning Objectives:**
Be able to apply Corrosion Management principles to assessing, mitigating and monitoring the corrosion threat of MIC. Understand, and correctly apply and interpret state of the art MIC diagnostic methods. Understand sampling procedures for various sample types obtained in the oil and gas industry.

**Course Length:** 1 Day

**Course Level:** Introductory

**Why Attend:**
To be able to diagnose, prevent and act against the MIC threat in oil and gas production, processing and transmission pipeline system.

**Who Should Attend:**
Individuals with responsibility for developing, implementing and executing corrosion management activities for upstream oil and gas facilities, including corrosion and materials engineers, oilfield microbiologists, production chemists, process engineers, integrity managers, laboratory technicians and field staff.

**CEUS:** 0.8

**Instructor Profiles:**
- **Dr. Torben Lund Skovhus**—Teacher and researcher at university level in combination with PhD work in both Denmark and Australia (general microbiology, molecular microbiology, biocorrosion). For the past 15 years participation in over 50 conferences as speaker/presenter/ organiser within NACE, Energy Institute, SPE, TEKNA, ISME, EUROCORR and ISMOS. Published 3 books on the topic and 35+ technical/scientific articles.
- **Richard Eckert**—NACE Internal Corrosion Course Lead Instructor for more than 10 years; Invited speaker for SGA, AGA, NACE symposia, ISMOS, SPE, USAF, and other technical forums; private industry corrosion and MIC training courses developed and presented. Author “Field Guide for Failure Analysis of Internal Corrosion”, numerous papers and technical articles.

**Training Course Prices**
- **Member:** 400 GBP
- **Non Member:** 500 GBP

**Fees include:** coffee breaks, lunches and training course material

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**General Information**

To register, please visit the SPE events page at www.spe.org/events/ofcs/2016/ where you can also download or print a PDF version of the registration form.

SPE accepts Visa and MasterCard credit cards. If you have any questions, please contact the SPE London office:

**SPE Europe, Russia, Caspian and Sub-Saharan Africa Office**

1st Floor, Treeways House
40/44 Clipstone Street
London, W1W 5DW, UK
Tel.: +44.20.7299.3300
Fax: +44.20.7299.3309
Email: reglondon@spe.org

**Conference Venue**
**Aberdeen Exhibition and Conference Centre (AECC)**
Bridge of Don, Aberdeen, AB23 8BL
Tel.: +44.1224.824824

**Posters**
A variety of poster presentations will be displayed during the course of the conference. We would encourage all delegates to take a moment during the session breaks to view these posters covering a range of related subjects.

**Digital Proceedings**
One copy of the digital proceedings will be provided for all registrants (excluding students). Additional copies can be purchased from the registration desk: GBP 50 for members and GBP 75 for nonmembers.

**Audio Visual Copyright**
SPE technical sessions are protected by copyright laws. Attendees are not permitted to record (via phone, camera, or any other recording device) the presentations made during this conference.

**Accommodation**
Reservations can now be made for the 2016 SPE International Scale and Corrosion Conference and Exhibition through the hotel booking website. Through this website you can book, modify or cancel your hotel reservations at any time.
https://aws.passkey.com/event/14496460/owner/1033605/home

**Conference Dinner**
Following the drinks reception on Monday 9 May, there will be a conference dinner which will begin at 1930. This reception and dinner provides an ample opportunity for networking with other delegates. Both the reception and dinner are included in the conference fee. Please indicate in your registration process whether you wish to attend.

**Getting There**
The Aberdeen Exhibition and Conference Centre (AECC) is situated 10 minutes from Aberdeen city centre. Aberdeen International Airport is a short drive away and has frequent connections to London/UK airports and good service to northern European destinations. The Aberdeen railway station is also a short drive from AECC and connects to all main UK stations.

**Badge Collection**
Event badges and materials will not be mailed in advance. Your event badge and registration materials (including a copy of the digital proceedings) should be collected from the registration desk on Monday, 9 May between 0700 and 0815 hours. The registration desk will be open throughout the event for any event and/or registration enquiries.
## Event Registration Fees

All fees shown below are in pounds (GBP) and subject to 20% local tax. Prices exclude accommodation.

### Registration Fees for SPE International Corrosion Conference and Exhibition

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<td>Nonmember</td>
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<tr>
<td>Author/Speaker/Committee/Session Chair</td>
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<tr>
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### SPE Training Course: Corrosion Management and Microbiologically Influenced Corrosion

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### JOINT SPE International Oilfield Corrosion and Scale Conferences and Exhibitions

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<td>Student Nonmember</td>
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### Delegate Registration Fee

The registration fee includes: entry to all conference sessions, entry to the exhibition; access to all poster displays, a copy of the conference digital proceedings, coffee break refreshments and lunches, and attendance at the reception and dinner on 9 May. The JOINT registration fee includes entry to both Oilfield Corrosion and Scale exhibitions, conferences, poster sessions, coffee breaks, lunches, conference dinners (on 9 and 11 May) and Oilfield Corrosion workshops. Joint registrants will also receive a copy of the Oilfield Corrosion and Scale digital conference proceedings.

### Refunds

Cancellations must be submitted in writing to the SPE office in London before 21 March in order for you to receive a refund. Cancellations prior to 21 March will receive a refund less a GBP 50 handling fee. Cancellations received on or between 21 March and 18 April inclusive, will receive a 50% refund. For cancellations after 18 April, no refunds will be paid although substitutions may be made.

### Visa Information

Attendees from countries that require a UK visa for entry are reminded that the process of obtaining a visa may take several months.

Please contact FormsLondon@spe.org for a visa invitation letter you can use in obtaining a visa. Please note that this letter does not guarantee that you will be granted a visa, nor does it commit SPE to assist you in obtaining a visa.

### Badge Pickup

Badges will be available for pick up on-site at the registration desk.

### Questions?

If you have any questions, please contact FormsLondon@spe.org the SPE London Office on +44(0) 20 7299 3300