

# Technical Programme

(Additions/changes made after 15 August 2008 will be reflected in the on-site programme.)

**Wednesday, 3 December • 0900-1000 hours  
Plenary Hall**

## OPENING CEREMONY

- **Datuk Seri Abdullah Hj. Ahmad Badawi**  
Prime Minister of Malaysia
- **Tan Sri Dato' Seri Mohd Hassan Marican**  
President and Chief Executive, PETRONAS
- **Mark W. Albers**  
Senior Vice President, Exxon Mobil Corp.

**Wednesday, 3 December • 1115-1245 hours  
Plenary Hall**

## PLENARY SESSION: HIGH PRICE! HIGH COST! HIGH STAKES?

### Session Moderators:

**Ahmad Nizam Salleh**, Vice President, Corporate Services Div., PETRONAS  
**A. Tim Cejka**, President, ExxonMobil Exploration Co.

### Speakers:

- **Ramlan Malek**, Vice President, E&P Business, PETRONAS
- **Nasser K.I. Al-Jaidah**, Chief Executive Officer, Qatar Petroleum Intl.
- **Jean-Marie Masset**, Senior Vice President Geosciences, Total
- **Francisco Nepomuceno Filho**, E&P Corporate Executive Manager, Petrobras
- **Brad Bourland**, Head of Research, Jadwa Investment

**Wednesday, 3 December • 1400-1530 hours  
Conference Hall 1**

## PANEL SESSION 1: CLIMATE CHANGE & ENVIRONMENT

### Session Co-Moderators:

**Scott W. Tinker**, Director, Bureau of Economic Geology, U. of Texas at Austin, and AAPG President  
**Phil Rae**, Director, InTuition Energy Assocs. Pte. Ltd.

### Speakers:

- **Brian P. Flannery**, Science Strategy and Programmes, Exxon Mobil Corp
- **Graeme Sweeney**, Executive Vice President, Future Fuels & CO<sub>2</sub>, Shell Intl. Petroleum Co. Ltd.
- **Chow Kok Kee**, Managing Director, Sustainable Technology Resource Centre, STREC Sdn. Bhd.
- **Ian Duncan**, Associate Director Earth and Environmental Systems, Bureau of Economic Geology, U. of Texas at Austin
- **Koei Saga**, Managing Executive Officer, Director of HV System Development, Toyota Motor Corp. (Invited)

**Wednesday, 3 December • 1400-1530 hours  
Meeting Rooms 302-303**

## SESSION 1: BUSINESS OF EXPLORATION

### Session Chairpersons:

**Richard Barrett**, Shell Development (Australia) Ltd.  
**Mohd. Izham Ismail**, ExxonMobil E&P Malaysia Inc.

Exploration has become increasingly challenging with remaining opportunities within new or mature basins fraught with higher risk or having smaller field sizes. The papers in this session discuss several approaches for improved business and technical decision making considering both quantitative and qualitative inputs, including value-of-information analysis to help derisk opportunities. The session also showcases several regional examples of how significant discoveries can still be made in mature basins through the detailed study and integration of key geologic datasets.

**12792 New Perspective on Exploration Prospect Analysis**  
W.Z. Wan Embong, PETRONAS

**12075 The State of Optimum Value Testing - The Vision and the Reality**  
H. Elshahawi, R.H.Hite and M.P. Hows, Shell Intl. E&P

**11969 A Monte Carlo Approach to Value of Information Evaluations**  
O. Arild and H. Lohne, Intl. Research Inst. of Stavanger; R.B. Bratvold, U. of Stavanger

## ALTERNATES/POSTERS

**12502 Judgment Elicitation Process for Multi-Criteria Decision-Making in the Oil and Gas Industry**  
L. Virine, Schlumberger

**11861 A Methodology for Gauging the Sensitivity of Project Value During Concept Comparison and Selection**  
S.A. Shedid, Texas A&M U.; C.J. Jablonowski and C. Wiboonkij-Arphakul, U. of Texas at Austin; M.D. Neuhold, Clough Engineering

**12606 Challenges and Strategies in Exploring and Developing Carbonate Reefs in Southeast Asian Basins**  
M.Y. Ali, PETRONAS Research Sdn. Bhd.

Wednesday, 3 December • 1400-1530 hours  
Meeting Rooms 304-305

**SESSION 2: WELL CONSTRUCTION COST REDUCTION**

**Session Chairpersons:**  
**Edson Nakagawa**, CSIRO  
**Graham Williams**, M-I SWACO

Wednesday, 3 December • 1400-1530 hours  
Meeting Room 306

**SESSION 3: SURVEILLANCE 1**

**Session Chairpersons:**  
**James K. Forrest**, Schlumberger  
**Annette Moltz**, ExxonMobil Production Co.

This session will cover the selection of bottom-hole assemblies based on simplified models; the use of powered rotary steerable systems to increase drilling performance; and the modelling of wellbore strengthening through fracture sealing. It will also present a methodology to determine the operational envelope for carbon steel tubulars and potentially avoid the need for corrosive resistant alloys; and, finally, an in-depth analysis of trapped annular pressure cases with the objective of improving well integrity.

This session includes numerous examples of state-of-the-art methods that have been used to measure dynamic production changes and optimise performance. We will hear about the use of time-lapse seismic surveys to monitor fluid movement and understand reservoir connectivity, state-of-the-art electromagnetic imaging for interwell resistivity mapping, and innovative fit-for-purpose use of wellhead sensor data to diagnose well productivity impairment. We will be shown the use of computer simulation to optimise reservoir performance through systematic modeling studies of operating parameters. And, finally, the surveillance tools and production optimisation methods used on the Daqing field in China, and their evolution through the performance history of this maturing giant oil field.

**12675 Trapped Annular Pressure Data and Analysis**  
E. Kaarstad, B.S. Aadnoy and J. Simonsen, U. of Stavanger

**12514 Understanding the Time-Lapse Seismic Response of a Compacting Carbonate Field, Offshore Sarawak, Malaysia**  
T. Barker, Shell Intl. E&P BV; P.F. Hague, B. Chen, J. Majain and K. Wang, Sarawak Shell Bhd.

**12737 Development and Application of a BHA Vibrations Model**  
J.R. Bailey, E. Biediger and S. Sundararaman, ExxonMobil Upstream Research Co.; A. D. Carson, W.C. Elks and F.E. Dupriest, ExxonMobil Development Co.

**12229 Crosswell Electromagnetic Tomography: From Resistivity Mapping to Interwell Fluid Distribution**  
A.F. Marsala, S. Ruwaili, S. Ma, Z. Ali and M. Buali, Saudi Aramco; J. Donadille, S.F. Crary and M. Wilt, Schlumberger

**115491 Powered Rotary Steerable Systems Offer a Step Change in Drilling Performance**  
J.K. Verma and S. Ganda, Schlumberger; H.A. Yami, A. Kubaisi, K. Nawaz and A.H. Awan, Saudi Aramco

**ALTERNATES/POSTERS**

**12519 Using 4D Seismic for Understanding Drainage Pattern and Optimising Infill Wells Placement in a Heterogeneous and Compartmentalised Reservoir - Cases From the Heidrun Field**  
E. Kolsto, O. Husby, T. Røste, T. Endresen, J.A.A. Tyssekvam, A. Moen and N.K. Dawodu, StatoilHydro

**12503 Integrated Approach to Optimise Materials Selection for North Field High-Rate Gas Wells**  
E.J. Wright, ExxonMobil Development Co.; W.A. Sorem, RasGas Co. Ltd.; J. Pacheco and D.A. Norman, ExxonMobil

**ALTERNATES/POSTERS**

**11945 State-of-the-Art BHA Programme Produces Unprecedented Results**  
D.C. Chen, Halliburton Co.; M. Wu, Halliburton Sperry Drilling Services

**113059 Diagnosis of Well Performance Degradation on Elgin-Franklin HP/HT Fields Using Only Wellhead Temperature Measurements**  
G. Joffroy, Total E&P UK plc.

**12280 Wellbore Strengthening without Propping Fractures: Analysis for Strengthening a Wellbore by Sealing Fractures Alone**  
H. Wang, M.Y. Soliman and Z. Shan, Halliburton; B.F. Towler, U. of Wyoming

**12480 Applications of Optimal Control Theory for Efficient Production Optimisation of Realistic Reservoirs**  
P. Sarma and W.H. Chen, Chevron Corp.

**12512 Case Histories of Production Technologies in Separate Zone Water Flooding in Daqing Oilfield**  
Y. Yang, S. Zhang, C. Liu, Q. Ma, L. Ban, C. Zhang and W. Yuan, Daqing Oilfield Co. Ltd.

**Wednesday, 3 December • 1400-1530 hours  
Meeting Rooms 307-309**

**SESSION 4: INFLOW MANAGEMENT AND WELL INTERVENTION**

**Session Chairpersons:**  
**Keng Seng Chan**, PETRONAS  
**Ralph Leon**, ExxonMobil Production Co.

Results of a mechanistic study on the function and benefit of the “Passive” and “Active” inflow control devices (ICD) for application in horizontal and multi-lateral wells will first be discussed in this session. A workflow for selection of these devices will be proposed, followed by an Australian field case study where tailor-made ICD screens were used for efficient sand control, delaying water and gas breakthrough. Separately, a successful case of Water Shut-Off in an Indonesian gas field using mechanical and chemical methods will demonstrate the importance of inflow fluid control for improved recovery.

**12145    Advanced Wells: A Comprehensive Approach to the Selection between Passive and Active Inflow Control Completions**  
D.R. Davies, F.T. Al-Khelaiwi and V.M. Birchenko, Heriot Watt U.; M.R. Konopczynski, WellDynamics Inc.

**12131    Tackling Gas Field Decline with Efficient Chemical Water Shut-off: Successful Application on Peciko Field (East Kalimantan, Indonesia)**  
A. Armon and L. Riyanto, Total E&P Indonesia

**12385    ICD Screen Technology in Stag Field to Control Sand and Increase Recovery by Avoiding Wormhole Effect**  
S. Wibawa and S. Kvernstuen, Schlumberger; F. Porturas, Schlumberger; A.V. Chechin, J.S. Graham and K.R. Dowling, Apache Energy

**ALTERNATES/POSTERS**

**12768    Development of a Retrievable Single Trip Tubing Straddle Improves Success Rate on the North Slope of Alaska**  
J.Y. Julian, BP Exploration

**12256    Extending Life and Usage of CT Strings by High Performance Spoolable Connector**  
M.A. Ehtesham, R.G. Howard and J.I. Hriscu, Halliburton Energy Services Group

**12784    A Sand Management System for Mature Offshore Production Facilities**  
I. McKay, ExxonMobil Corp.; J.W. Mohr, ExxonMobil Production Co.

**12410    Successful Water Shut-off in Extended Horizontal Wells Using Inflatable Technology**  
A. Snaas, Weatherford; D. Alvarez, Occidental Qatar

**Wednesday, 3 December • 1400-1530 hours  
Meeting Room 406**

**SESSION 5: CAPABILITIES & PEOPLE**

**Session Chairpersons:**  
**Min-Teong Lim**, Shell EP Intl. Ltd. (Singapore)  
**Noor Aizila Mustafa**, PETRONAS

This session includes several excellent case histories of innovative approach to recruitment, development and retention of scarce technical talents worldwide. We will hear how two independent companies combined their unique resources to create a successful ‘ground up’ drilling development programme localized to South-East Asia. Another paper describes how a joint HR/Technical Discipline approach is applied to reduce the time it takes to develop an individual, e.g., through a combination of innovative training and challenging assignments. Programme for drilling excellent examples of superior fluids design with the objective of minimising near wellbore damage. We will also hear about the issues faced in implementing Diversity & Inclusion, the lessons learnt, and the critical issues going forward. In the final two papers, one describes the formulation of a HR framework to ensure that the company’s “people dimensions” are fully engaged whilst the latter presents a case history of recruitment and retention of staff in the GCC region.

**12916    Skills Shortages, how Mutual Dependency and Entrepreneurialism can Fill the Gap Left by the Majors**  
C. Stuart, Stuart Wright Pte. Ltd.; S. Spongarkar, Premium Drilling Inc.

**12841    A Joint HR/Technical Discipline Approach to Recruitment, Development and Retention of Talent Worldwide**  
M. Simon, P. Julien and J. Estival, Total

**12919    Diversity & Inclusion as a Business Enabler**  
J. Sequiera, S. Hu and A.Lo, Shell Intl. E&P Ltd.

**ALTERNATES/POSTERS**

**12060    The HR Group as a Strategic Business Partner - A How to Case Study**  
J.F. O’Callaghan and A.A.A. Al-Bannay, Kuwait Oil Co.

**12428    Recruitment and Retention of Staff**  
S.A. Mahajan, Kuwait Oil Co.

**Wednesday, 3 December • 1400-1530 hours  
Meeting Room 407**

**SESSION 6: LNG**

**Session Chairpersons:**  
**Suleman A. Bargan**, Saudi Aramco  
**Werner Ribul**, Shell E&P Asia Pacific

This session includes several excellent papers about the LNG. The objective of this session is to discuss latest technology about LNG. For examples: Floating LNG- Has its Time Come?, An Insight into the World's Largest LNG ships, and LNG Technology Advances. Also, Challenges and Overcoming Challenges with Commercializing LNG and Smart LNG Sites will be presented.

**12911 Floating LNG- Has its Time Come?**  
A. Faulkner, Shell Gas & Power; B.J. Pek, Shell Global Solutions Intl. BV

**12445 An Insight into the World's Largest LNG Ships**  
A. Al-Kubaisi and A.F. Al-Sulaiti, Qatargas Operating Co. Ltd.

**12111 LNG Technology Advances and Challenges**  
R.R. Bowen, M.R. Miller, J.L. Planteen, O.W. Tredennick, G.M. Norman, C.M. Duke and M.N. Greer, ExxonMobil Development Co.

**ALTERNATE/POSTER**

**12702 Smart LNG Sites**  
P. Paulus and K. Den Bakker, Shell Global Solutions Intl. B.V.

**Wednesday, 3 December • 1600-1730 hours**  
**Meeting Rooms 302-303**

**SESSION 7: CONVERTING DATA INTO KNOWLEDGE**

**Session Chairpersons:**  
**Keith S. Boyle**, Santos Ltd.  
**Jamie Parry**, NorAsian Energy

This session covers three different approaches of how to integrate various types of data in order to provide the most reliable information for all technical disciplines. Two of the papers cover the general problem of data management. The time Engineers and Geoscientists spend locating, loading and integrating the various pieces of information they require is well known. Two solutions are demonstrated, the first is a "one-stop-shop" where the technical disciplines can access the data they require. The second approach utilises a data management policy where the various disciplines are responsible for maintaining and passing along their respective data. The third paper covers a different aspect of data management, where a reliable LWD slowness result has been derived by integrating various petrophysical parameters.

**12035 Improvements in the Management of Structured and Unstructured Data**  
M. Garbarini, R. Catron and R.E. Pugh, ExxonMobil

**12497 Petrophysics-Guided Processing of LWD Acoustic Logs**  
M.J. Manning, L.J. Andonof and T.H. Quinn, Baker Hughes Inc.; E. Frost, Baker Atlas

**12106 Integrated Data and Information Management System from Subsurface to Surface to Enhance Production Activity and Business Decision - Driving Cross Disciplines Integration through Data/Information Management**  
T. Sahea, R. Renaldy and N. Swatika, Total E&P Indonesia

**ALTERNATES/POSTERS**

**12643 Effective Cross Discipline Well Planning and Real Time Integrated Drilling Operations on the Woodside Enfield Asset**  
R.A. Papparde, Halliburton Co.; R. Papparde, Halliburton Australia Pty. Ltd; R.G. Bell, Woodside Energy Ltd.

**12234 Fault Tree Analysis and Remote Monitoring Facilities Increase Reliability**  
A.L. Weber, K. Hershberger and R. Sherrill, Schlumberger

**Wednesday, 3 December • 1600-1730 hours**  
**Meeting Rooms 304-305**

**SESSION 8: WELL CONSTRUCTION: INSTRUCTIVE CASE STUDIES**

**Session Chairpersons:**  
**Maurice B. Dusseault**, U. of Waterloo  
**Stu Keller**, ExxonMobil Upstream Research Co.

The challenges in dealing with a wide variety of down-hole conditions has resulted in many ingenious solutions to real-life problems during well construction. Through an array of excellent case histories, this session examines a number of key issues for design, optimization, and construction of wells in exceptional conditions. Learn from the valuable experience of others as these authors share how they battled their well construction trials and survived.

**12134 Wellbore Stability Predictions Using Mechanical Earth Model - A Case Study for Okan Field, Offshore Nigeria**  
X. Yi, Chevron Corp.

**12658 Tunu Field Light Architecture Wells**  
C. Longis, P. Jeannet, M. Caroline, F. Widiwibowo, G. Tarnaud, D. Dodiono and L. Vervynck, Total E&P Indonesia

**12663 Well Construction and Formation Evaluation in Very Shallow and Unconsolidated Formations - A Case Study from Brunei**  
D.C. Maggs, S.P. Fey and D. Miguel, Schlumberger; Y. Loo, M. Paimin, S.A. Azahari and D.D. Williams, Brunei Shell Petroleum Sdn. Bhd.

**ALTERNATES/POSTERS**

**114574 Killing of a Gas Well: Successful Implementation of Innovative Approaches in a Middle-Eastern Carbonate Field - A Field Case**  
S. Salehi, Petropars Ltd.; J. Azar, U. of Tulsa; G. Hareland, U. of Calgary

**12387 The Jerneh Story - Technology & Teamwork**  
W.C. Morris and A.J. Skymmar, ExxonMobil E&P Malaysia Inc.

**115198 Cementing High Pressure Formations in the Kingdom of Saudi Arabia**  
S.S. Berg, N. Barnett and S.M. Noor, Schlumberger; H.E. Al-Yami and K. Nawaz, Saudi Aramco

**Wednesday, 3 December • 1600-1730 hours**  
**Meeting Room 306**

**SESSION 9: SURVEILLANCE 2**

**Session Chairpersons:**

**Anna Apanel**, ExxonMobil Production Co.  
**Oddbjorn Skilbrei**, Shell E&P Asia Pacific

This session includes several excellent examples of how the industry is realising the value of reservoir surveillance to increase recovery efficiencies in a range of assets. Examples include the approach for developing an integrated reservoir surveillance plan for the Giant Greater Burgan Field in Kuwait, specific surveillance techniques such as tracer injection and fingerprinting to monitor lean gas in a large gas cap recycling project, microseismic, temperature and pressure gradient surveillance to monitor and optimise a fractured carbonate GOGD steam-flood, research on carbonate reservoirs describing ways 4D seismic can be used to update geologic models, monitor fluid movement and optimise production, and methods to integrate multiple intelligent well downhole measurements to optimise a five-spot waterflood.

**12065 4D Seismic in Carbonates: From Rock Physics to Field Examples**  
G. Chen, K. Wrobel and J. Zhang, ExxonMobil Upstream Research Co.; A. Tiwari, W. Soraka and M. Hadidi, ADCO; A.A. Sultan, ZADCO

**12456 Role of Comprehensive Reservoir Surveillance and Monitoring in the Dukhan Gas Cap Recycling Scheme - A Case Study**  
T.A. Muhamad Rais, K.A. Al-Ansari, T.J. Broad and A. Hussain, Qatar Petroleum

**12629 The Well and Reservoir Management Strategy for the Thermally Assisted Gas-Oil Gravity Drainage Project in Oman**  
M. Al-Habsi, K. Khabouri, A. Ikwumonu, K.D. Rawnsley, I. Ismaili, R. Yazidi and P.H. Putra, Petroleum Development Oman

**ALTERNATES/POSTERS**

**115725 Active Management of Five Spot Waterflood Based on Continuous Reservoir Monitoring**  
S.A. Sakowski, Gaffney, Cline & Assocs.; J. Lee, B. Thigpen and G.P. Vachon, Baker Hughes

**12700 Quantifying the Value of Surveillance and Developing an Integrated Surveillance Plan for the Greater Burgan Field, Kuwait**  
S.F. Desai and R. Prasad, Kuwait Oil Co.; N. H. Gazi, Halliburton

**Wednesday, 3 December • 1600-1730 hours**  
**Meeting Rooms 307-309**

**SESSION 10: NEW TECHNOLOGIES FOR RESERVOIR STIMULATION**

**Session Chairpersons:**

**Ahmed S. Abou-Sayed**, Advantek Intl. Corp.  
**J. Ernest Brown**, Schlumberger

This session covers new and exciting technologies that have recently been introduced to enhance and improve overall reservoir stimulation. Several new innovations will be presented on overcoming the challenges of controlling the placement of multiple treatments along an extended borehole. We will also hear about a new concept to improve overall fracture conductivity and the resulting well performance, as well as new chemistries using nanoparticles to improve the stability of viscoelastic surfactant fluids and also to provide a new mechanism for immobilizing fines.

**114768 Successful Multistage Horizontal Well Fracturing in the Deep Gas Reservoirs of Saudi Arabia: Field Testing of a Promising Innovative New Completion Technology**  
V. Ramanathan and O.A. Ishteiwy, Schlumberger; J.R. Solares, C.A. Franco, H.M. Al-Marri and H.H. Al Jubran, Saudi Aramco

**12748 The Heterogeneous Propped Fracture: A New Way of Enhancing Productivity**  
P.R. Hosein, K. Lyapunov, O.O. Medvedev and A.V. Medvedev, Schlumberger

**12414 Nanoparticles for Formation Fines Fixation and Improving Performance of Surfactant Structure Fluids**  
T. Huang, J.B. Crews and J.R. Willingham, Baker Hughes Inc.

**ALTERNATES/POSTERS**

**12023 Evaluation of Rotary Jetting Tool Application for Matrix Acid Stimulation of Carbonate Reservoir in Southern Area Field of Saudi Arabia**  
S. Haldar, A.A. Al-Jandal and S.M. Al-Driweesh, Saudi Aramco; M.A. Espinosa and S. Al-Sarakbi, Schlumberger

**12302 Advanced Selective Stimulation Technique - First Multi Stage Acid Frac Completion**  
S.M. El-Shourbagi, Saudi Aramco

**12043 Hydrajet (Abrasive) Perforating Can Improve Success of Fracturing Stimulations**  
B.W. McDaniel and J. Surjaatmadja, Halliburton Co.; L.E. East, Halliburton Energy Services Group

**Wednesday, 3 December • 1600-1730 hours  
Meeting Room 406**

**SESSION 11: SOCIAL RESPONSIBILITY**

**Session Chairpersons:**  
**Michitaka Ohta**, INPEX/Japan Oil Development Co.  
**Reddy S. Sunardi**, PT Medco E&P Indonesia

Social Responsibility had long been considered as industry's moral requirement. Over the recent years, however, this has become a business requirement. This session includes several excellent examples of corporations' striving efforts towards community in which they operate. Unique and effective process of sustainable livelihoods assessment with NGO verification will be discussed. Session will also cover the key factors for dealing with social responsibility with impact of the international petroleum agreements. Systematic children education program verified by academics will also be discussed.

**12499 Sustainable Livelihoods Assessments -- Participatory Planning Tools for Community Development**  
R.F. Wasserstrom and S. Reider, Terra Group Inc.

**12623 Sustainable Development and Social Responsibility: Key Factors for Positive Impact of International Petroleum Agreements**  
L. Miranda and K.A. Malik, U. of Texas at Austin

**12638 A Case Study of a Successful Children's Education Programme, The Semai Benih Bangsa Programme in Aceh, Indonesia**  
D. Rachman, S. Ardaneswari, K. Krisnati and N. Razak, ExxonMobil Oil Indonesia Inc.

**ALTERNATES/POSTERS**

**12543 Good Ethics Makes Good Business Sense**  
M. Craighead and J.G. Martin, T.R. Azeez, INTEQ

**12815 Community Management Method (CMM) in Village Water Supply (VWS) Programme**  
R. Djatmiko, Total E&P Indonesia

**12819 Mapping of Social Communities and Issues in the Industrial Context**  
M. Du Laz, Total S.A.

**Wednesday, 3 December • 1600-1730 hours  
Meeting Room 407**

**SESSION 12: MOSTLY GAS RESERVOIRS**

**Session Chairpersons:**  
**Ralph Youie**, Independent  
**Sam Conner**, ExxonMobil Exploration Co.

This session includes a range of topics associated with multidisciplinary approaches to the enhancement of hydrocarbon recoveries from gas reservoirs. The first paper examines how complex, multi-layer gas-condensate reservoir flow regimes can be investigated via the introduction of pressure derivative techniques, resulting in improved understanding of well test behaviors. The remaining papers involve case studies. From the Cooper Basin of Australia, we will learn how Coil Tubing Under-balanced Drilling (CTUBD) has been used to accelerate gas reserves from long production tails into the economic reserves window, and in Malaysia, how what was once considered a shallow gas hazard has now become an attractive development opportunity.

**12439 Geology Drives Technology - Application of Coil Tubing Underbalanced Drilling in the Cooper Basin, Australia**  
A.L. Telesford, T.B. Cotton, S.K. Cheong and S. Chipperfield, Santos Ltd.

**12642 From Shallow Hazard to Productive Opportunity: Opening a New Gas Play in the North Malay Basin**  
M. Mohd Nasir, M. Bakri and S. Shamsuddin, ExxonMobil E&P Malaysia Inc.

**117124 Application of the PRMS to Tight Gas and Coal Seam Gas Projects**  
G.J. Barker, RISC Pty. Ltd.

**ALTERNATES/POSTERS**

**12364 The Challenges and Advantages of Openhole Completions in the Manati Gas Field**  
C.R. Guimaraes De Carvalho and R.P. Barbedo, Schlumberger; A. Calderon, A.F. Aragao and C.M. Chagas, PETROBRAS

**12142 Optimisation and Rejuvenation of Mature Assets: Challenges and Solutions for Water Control in Gas Wells**  
P. Mukerji, F. Wahid and Z. Zaouali, Schlumberger

**Thursday, 4 December • 0900-1030 hours  
Conference Hall 1**

**PANEL SESSION 2: SUSTAINING PRODUCTION RATES TO MEET FUTURE DEMAND**

**Session Co-Chairmen:**  
**Rocky A. Becker**, Vice President, Geoscience, ExxonMobil Production Co.  
**Hosnia Hashim**, Deputy Managing Director, Kuwait Oil Co.

- Speakers:**
- **Abdulla Al Naim**, Vice President Petroleum Engineering & Development, Saudi Aramco
  - **Jose Formigli**, Executive Manager – EP ENGP, Petrobras
  - **Charles Mattenet**, Senior Vice President, Asia & Far East, Total
  - **Wan Zulkiflee Wan Ariffin**, Vice President, Gas Business, PETRONAS
  - **Liu Zhenwu**, Deputy Chief Technology Officer, China Natl. Petroleum Corp.

Thursday, 4 December • 0900-1030 hours  
Meeting Rooms 302-303

**SESSION 13: CLASTIC - SEISMIC IMAGING**

**Session Chairpersons:**  
**Frederic Reynaud**, Total E&P  
**Ed Denman**, Aperture Geophysical Consulting

This session includes several excellent examples of imaging improvement in clastic environments through different methods:

- New 3D seismic linked with sedimentological and sequence stratigraphy methods
- Specific 3D processing (PSDM)
- Interpretation of borehole images
- Study of slope morphology observed on 3D seismic data
- 3D seismic geomorphological analysis of a submarine fan

The papers demonstrate how these methods help in optimising field development, or defining reservoir distribution and heterogeneities.

**12284** **Fault Shadow and Sub-Reef Imaging Resolved by Interpretative PSDM Workflow in Kutai Basin**  
N. Abdoun, B. Duquet and Y. Le-Stunff, Total SA;  
M. Cepi and F. Bertini, Total E&P Indonesia

**12498** **3D Seismic Data Helps to Lift the Fog-Structural and Stratigraphic Architectural Observations from a Recent 3D Seismic Survey, Block 4, Qatar**  
A.T. Pink and C. Sembritzky, Anadarko Petroleum Corp; M. Zahran, Qatar Petroleum

**12253** **Reconstructing Sedimentary Depositional Environment with Borehole Imaging and Core: A Case Study from Eastern Offshore India**  
C. Shrivastva and S. Ganguly, Schlumberger;  
Z. Khan, Gujarat State Petroleum Corp.

**ALTERNATES/POSTERS**

**12703** **Complex Seismic Morphology on the Slope of NW Australia: Successive Episodes of Fossil Pockmarks in the Lower Tertiary**  
P. Imbert, Total

**12222** **3D Seismic Geomorphological Analysis of Submarine-Fan Turbidite Reservoir Distributions and Shape Variations Using Seismic Facies and Sedimentological Information: Examples from Active Margin Basins**  
O. Takano, M. Nishimura and T. Tsuji, JAPEX Research Center; T. Saeki and T. Fujii, Japan Oil, Gas and Metals Natl. Corp.

Thursday, 4 December • 0900-1030 hours  
Meeting Rooms 304-305

**SESSION 14: EMERGING WELL CONSTRUCTION TECHNOLOGIES**

**Session Chairpersons:**  
**Ken Andrus**, Easywell  
**Jeff Hibbeler**, BJ Services Co.

With the cost of drilling materials and spread rates soaring, technology around the issue of well construction has never been more important. This session focuses on breakthroughs in drilling. Elimination of cross-flow, casing drilling, cementing and the latest on rotary steerable techniques are presented. Also of interest will be the presentation on “smart drillpipe” which provides a data rate of 5 times that of conventional MWD/LWD. Applications from Saudi Arabia to the Gulf of Mexico are presented in this critical session.

**12063** **Early Bed Boundary Detection While Drilling - Testing and Application of a New Resistivity Device**  
A. Hartmann, M. Gorek, C. Fulda and K. Kraft, INTEQ

**12449** **‘Intelligent’ Wired Drill-Pipe System Allows Operators to Take Full Advantage of Latest Downhole Sensor Developments**  
B. Redmond and R.B. Russell, Halliburton; M. Reeves, M. Hernandez and D.W. MacNeill, IntelliServ Inc.; L. Lawrence, Apache Australia

**12682** **Preserving Stored Gas Reserves: Self-Repairing Cement Sheath Protects Underground Gas Storage Investment.**  
M. Bellabarba, S. LeRoy-Delage, E. Belleggia and R. Illuminati, Schlumberger; N. Moroni, ENI s.p.a.

**ALTERNATES/POSTERS**

**12539** **Casing Drilling Package Reduces Overall Drilling Time: Critical Analysis of an Operation in Papua New Guinea**  
C.J. Westren, B. Ersan, C. Jurica and L.I. Clark, Baker Hughes; A. Zreik, Oil Search Ltd.

**12102** **Innovative Solution to Isolate Cross Communicating Reservoirs with High Differential Pressure Saves Millions**  
M.I. Al-Umran, Z.A. Al-Baggal, A.A. Al-Mumen, P.K. Agrawal and M.S. Al-Ghamdi, Saudi Aramco

Thursday, 4 December • 0900-1030 hours  
Meeting Room 306

**SESSION 15: EOR SCREENING**

**Session Chairpersons:**  
**Alain Labastie**, Total  
**Han Dong**, PetroChina Co. Ltd.

This session covers the screening and feasibility study of full EOR technologies like gas injection, chemical flooding

and emerging techniques in both sandstone and carbonate reservoirs. The screening study involved using of a disciplined process which may involved conducting reservoir simulation and laboratory work to help the project team to focus on the most promising EOR technology and enable efficient resolution of key technical issues and uncertainties for integrated reservoirs like Tapis oil field of Malaysia and Cairn oil field of India as well as the reservoirs with different complexity in Oman. The feasibility study mainly focus on reservoir simulation evaluation of EOR candidate selection supported by a comprehensive laboratory work and scoping cost estimation. The detail procedures and implementation of WAG process and ASP process were fingered out for the specific reservoir condition.

**12805 EOR: The New Frontier in the Malay Basin Development**  
S.B. Selamat, ExxonMobil E&P Malaysia Inc.; G.F. Teletzke, ExxonMobil Upstream Research Co.; N.B. Darman and M. Shuhaimi, PETRONAS

**12025 An Integrated Workflow of Gas Injection EOR and a Successful Application for a Heterogeneous Sandstone Reservoir in the Southern North Sea**  
N. Nishikiori and K. Sugai, Norske AEDC AS; C. Normann and A. Onstein, Talisman Energy Norge AS; O. Melberg and T. Eilertsen, DONG E&P Norway AS

**12488 Preparing a Gas Field Development Plan: Tangga Barat Cluster Gas Project**  
Y. H. Teh, A. Yakob, K. Theseira, A. Musa, A. Abdul Karim, N. Borhan M.W. Sukakar, S. Muhammad and N.S. Hashim, PETRONAS Carigali Sdn. Bhd.

**ALTERNATES/POSTERS**

**12636 Evaluation of Chemical Flood Potential for Mangala Field, Rajasthan, India - Laboratory Experiment Design and Results**  
A. Pandey, D. Beliveau and M. Suresh Kumar, Cairn Energy India Pty. Ltd.; M.J. Pitts and J. Qi, Surtek Inc.

**12833 Feasibility Study of the Cyclic VAPEX Process for Low-Permeable Carbonate Systems**  
M. Feali, Pars Oil and Gas Co.; H.S. Darani, Petroleum U. of Technology Iran

**Thursday, 4 December • 0900-1030 hours  
Meeting Rooms 307-309**

**SESSION 16: IMPROVED CARBONATE STIMULATION**

**Session Chairpersons:**  
**Curtis Bennett**, BP Indonesia  
**Brian Ward**, Chevron Energy Technology Co.

This Session is dominated by papers describing various means of deploying acid; in order to directly affect the geometry and lateral extent of the formation well-bore interface. The methods presented include, operational (design & schedule), mechanical (deployment), chemical (formulation and dimensional) and innovative (delivery system). The presentations are all complemented by case-histories of their applications and provide useful insight into the breadth and

range of applications that acid stimulation continues to enjoy.

**12668 Long Term Evaluation of an Innovative Acid System for Fracture Stimulation of Carbonate Reservoirs in Saudi Arabia**  
F.O. Garzon, J.R. Solares, C.A. Franco, I.M. Hakami and H.M. Al-Marri, Saudi Aramco; V. Ramanathan, Schlumberger

**11993 Effective Stimulation of Carbonate Reservoirs around the World by Creating Multiple Drainage Holes**  
R.S. Aboud, J.D. Diaz, A. Mendez, L.J. Kalfayan, L.N. Portman, R. Stanley, J.A. Curtis, BJ Services Co.

**12368 Optimising Well Productivity by Controlling Acid Dissolution Pattern during Matrix Acidising of Carbonate Reservoirs**  
F.F. Chang and M. Abbad, Schlumberger

**ALTERNATES/POSTERS**

**12186 Fracture Conductivity Using Emulsified Acids: Effect of Emulsifier Concentration and Acid Volume Fraction**  
S.H. Al-Mutairi, Saudi Aramco; A.D. Hill and H.A. Nasr-El-Din, Texas A&M U.

**12886 Reaction of Organic Acids and Chelating Agents with Calcite**  
L. Li and H.A. Nasr-El-Din, Texas A&M U.; F.F. Chang and T. Lindvig, Schlumberger

**Thursday, 4 December • 0900-1030 hours  
Meeting Room 406**

**SESSION 17: HEALTH AND WORKING ENVIRONMENT**

**Session Chairpersons:**  
**Jens R. Valeur**, Ramboll Oil & Gas  
**Thor Inge Thronsen**, StatoilHydro

This session includes important experience from various approaches for improving health and safety in the oil and gas industry. The examples include health issues in a broad sense; such as improvement in working environment through office ergonomics, human factors issues related to optimal design of control system interfaces and aviation influenza preparedness. In Safety, discussion will include management system process and leadership commitment towards safety with examples including managing safety in a large scale, large workforce project and enhancing safety on drill rigs by introducing a Mobile Bucking Unit (MBU) which reduces the need for manual rig tong operations, and a system for lifting and handling tubulars safely, are addressed in this session.

**12727 Offline Bottomhole Assembly Preparations Save Time and Improve Safety Offshore Australia**  
E. Abrahamsen, R. Deqasperis and M. Billington, Weatherford Intl. Ltd.

**12848 LIP Control & Protective System Upgrade - Proving a Case for Consideration of Human Factors in Design**  
M. Sethi, Esso Australia Pty. Ltd.

**115111 Iron-Crew System**  
S.A. Agarwal, GlobalSantaFe Corp.; N.A. Agarwal, Maple Construction

**ALTERNATES/POSTERS**

**12762 MSD Surveillance: A Critical Review of Epidemiologic Evidence for Work Related Musculoskeletal Disorders of Low Back**  
E.S. Kuspradiyanto, D. Cahyono and P. Bida, Total E&P Indonesia

**12761 Office Ergonomics, an Effort to Reduce MSD Problem and Maintain Optimum Productivity**  
E.S. Kuspradiyanto, P. Bida and D. Cahyono, Total E&P Indonesia

**12755 Avian Influenza Pandemic Preparedness Plan**  
J. Susanto, R. Morel, E.W. Tjahjono and J. Setiono, Total E&P Indonesia

**Thursday, 4 December • 1100-1230 hours  
Meeting Rooms 302-303**

**SESSION 18: CLASTIC STRATIGRAPHY**

**Session Chairpersons:**  
**Cletus Idiagbor**, Nexen Petroleum Intl. Ltd.  
**David Pitcher**, Hess Malaysia

This session includes several examples of geologic and sedimentological models used to explain reservoir distribution in both marine and non-marine settings. Models are used to reduce exploitation and development risks during field development. A North Sea example uses integrated geological and geophysical modeling during prospect evaluation.

**12666 An Integrated Sedimentological Approach to the Characterisation of an Incised Valley System: Example from the Miocene of the Malay Basin**  
A.J. Rees and P.M. Lucas, Fugro-Robertson Ltd.; C.Y. McCants and S.F. Rae, Petrofac

**12148 Prospecting and Modelling the Deepwater Turbidite through Integrated G&G Studies**  
M. Liau, PETRONAS Carigali Sdn. Bhd.; K. Waters, Ikon Science Ltd.; H.D. Johnson and C.A. Jackson, Imperial College

**12218 Source and Reservoir Rock Distributions in Coal-Bearing Non-Marine Sediments within a Sequence/Tectono-Stratigraphic Framework: Implications for Non-Marine Rock Exploration**  
O. Takano and A. Waseda, JAPEX Research Center

**ALTERNATES/POSTERS**

**12216 Climate Stratigraphy in Subsurface: An Application in Resak Field, Malay Basin, Malaysia**  
U. Mohamad Rosli, PETRONAS Carigali Sdn Bhd; M. Abdul Kadir and S. Jirin, PETRONAS Research Sdn. Bhd.

**12167 Sequence Stratigraphic Approach to Identify New Play and Evaluation of Petroleum System in Blocks 102 & 106, Song Hong Basin, Vietnam**  
H. Harun, O. Mahmud and J. Unir, PETRONAS Carigali Sdn. Bhd.

**12509 Depositional Environment of the Upper Swan Sandstones, Caswell Sub-Basin, Australia**  
P.J. Horton, P. Harrison, S. MacDonald and M. Partington, Shell Development (Australia) Pty. Ltd.

**Thursday, 4 December • 1100-1230 hours  
Meeting Rooms 304-305**

**SESSION 19: INTEGRATED WELL CONSTRUCTION PRACTICES**

**Session Chairpersons:**  
**Usman Ahmed**, Schlumberger  
**Stan Tan**, Weatherford Asia Pacific

This session has three very informative papers with field examples that illustrate the development and application of technology to advance real-time drilling optimization for both efficiency and increased reservoir contact. The first paper addresses automatic evaluation of near well formation and flow interaction during drilling operations. In this paper, improved methodology for better understanding of well flow, and near well formation interaction based on this step change in availability of downhole measurements is presented. The second paper investigates extended reach horizontal well drilling and placement using 3D visualization and integrated geosteering techniques. This paper discusses the recent developments in horizontal well placement and drilling technology that enabled the authors to successfully drill and geosteer one of the longest openhole power water injector wells in Saudi Arabia. The final paper of the session discusses the development of a drilling methodology for tight reservoirs and in particular the Piceance Basin in Colorado. The paper details the ability to effectively integrate drilling technology and wellbore manufacturing principles to successfully develop the Piceance Basin

**12395 Automatic Evaluation of Near-Well Formation and Flow Interaction During Drilling Operations**  
J. Gravdal, H. Lohne, G.H. Nygaard, E.H. Vefring and R.W. Time, Intl. Research Inst. of Stavanger

**12373 Extended-Reach Horizontal Well Drilling and Placement Using 3D - Visualization and Integrated Geosteering Techniques**  
P.J. Butt, R.H. Sayed and T.G. Day, Schlumberger; A.M. Behair and S.M. Dossari, Saudi Aramco

**12291 Piceance Drilling: Technology Coupled with Wellbore Manufacturing Processes Critical to Delivering Predictable Results**  
S.A. Harris, T. J. Mashinski and C. Chisholm ExxonMobil Development Co.

**ALTERNATES/POSTERS**

- 12235 Logging While Drilling: Using Real-Time Data for Real-Time Decisions**  
A.L. Weber, A.B. Kramer and E.M. Tollefsen, Schlumberger; R. Schneider, El Paso E&P Co., LP
- 12255 Good Practices in Progressing a Smart Well Portfolio**  
H. Lau, Shell Intl. E&P Inc.
- 12707 Automatic Calibration of Real-Time Computer Models in Intelligent Drilling Control Systems - Results from a North Sea Field Trial**  
H. Lohne, J. Gravdal, E.W. Dvergsnes, E.H. Vefring and G. Nygaard, Intl. Research Inst. of Stavanger

**Thursday, 4 December • 1100-1230 hours  
Meeting Room 306**

**SESSION 20: EOR CASE STUDIES**

**Session Chairpersons:**  
**Anna Apanel**, ExxonMobil Production Co.  
**Ahmad Hussain**, PETRONAS Carigali Sdn. Bhd.

This session investigates different EOR techniques to enhance ultimate recovery, including CO<sub>2</sub> injection, hydrocarbon gas injection, steam injection and polymer flooding. Feasibility studies of the CO<sub>2</sub> value chain of capture, storage and injection for EOR and redevelopment of a mature fractured, dolomite field by underground gas storage and EOR will be presented. A pilot steam injection to improve recovery in a waterflooded light oil reservoir provides insight into the key factors for success. Simulation studies to determine the technical limits of multi-molecular weight polymers injected into heterogeneous multi-layer reservoirs and evaluate the impact of fluid properties on CO<sub>2</sub> miscible gas injection predicted performance will also be discussed.

- 12696 Halten CO<sub>2</sub> Project**  
W.M. Schulte, Shell Intl. E&P
- 12616 Steam Injection in a Waterflooding, Light Oil Reservoir**  
S. Wu, W. Guan and D. Shen, Research Inst. Petroleum Exploration and Development; H. Liu, Y. Quan and L. Liu, Daqing Oilfield Co. Ltd.
- 12014 Simulation on Technical Limits of Multi-Molecule-Weight Polymer Flooding in Heterogeneous Multi-Layer Reservoirs in Daqing Oilfield**  
X. Zhang, W. Guan, N. Meng, C. Lu and S. Guo, Daqing Oilfield Ltd. Co.

**ALTERNATES/POSTERS**

- 11992 Combined Underground Gas Storage and Enhanced Oil Recovery in a Fractured Reservoir**  
J.H. De Kok and T. Clemens, OMV E&P Ltd.

- 115314 Miscible CO<sub>2</sub> Injection: Sensitivity to Fluid Properties**  
F. M Nasir and N.A. Amiruddin, U. Teknologi PETRONAS

**Thursday, 4 December • 1100-1230 hours  
Meeting Rooms 307-309**

**SESSION 21: PRODUCTION OPTIMISATION STRATEGIES**

**Session Chairpersons:**  
**Mariam Binti Abd Aziz**, PETRONAS  
**Mohammed Najim Al-Khamis**, Saudi Aramco

The session discusses several excellent studies on production optimisation via integration of people, process & technology. In this session you will hear the various approaches that has been explored to optimise fields's production and development. We will hear about the application of Intelligent Field Technology for real time asset monitoring which is essential to optimise the production of a field in Saudi Aramco and the use of brute-force optimization approach to define optimal well choke and give maximum production for a giant & matured gas field in Western Siberia. A novel concept based on reservoir stimulation study to concurrently develop oil & gas for thin oil rim reservoirs to maximize project value will also be discussed.

- 12348 A Novel Approach to Production Optimisation in a Giant, Mature Gas Field in Western Siberia**  
F. Deimbacher, K.S. Chau and N. Morozov, Schlumberger
- 12344 Concurrent Oil & Gas Development Wells: A Smart Well Solution to Thin Oil Rim Presence in Gas Reservoirs**  
S. Putten Van and M.Naus, Shell Intl. E&P
- 12190 Smart Gas Production System Optimising Gas Delivery for Sarawak**  
M. Wong, Sarawak Shell Bhd.

**ALTERNATES/POSTERS**

- 12274 Multi Disciplinary Approach to Reversing Production Decline in Matured Fields**  
J.C. Kok, S.M. Balka and L.Y. Liu, Schlumberger; J.Y. Partono, Chevron Corp.; T.B. Tran, H. You, X. Xu, T. Xiang, J. Lian and P. Wei, CACT Operator's Group
- 12843 Real Time Production Well Flowrates and Cumulative Production without the Use of Multiphase Meters**  
B.S. Murugappan, N. Duong and O. Kwon, Korea Natl. Oil Corp; P. Trung, PetroVietnam EP
- 113556 Chemical Recovery of Gas Hydrates Using Fluorine Gas and Microwave Technology**  
R. Garg, K. Ogra, A. Choudhary, R.J. Menezes, Maharashtra Inst. of Technology

**Thursday, 4 December • 1100-1230 hours  
Meeting Room 406**

**SESSION 22: SAFETY MANAGEMENT AND SECURITY**

**Session Chairpersons:**  
**Shahar Hashim**, Schlumberger  
**Thomas Nilsen**, StatoilHydro

This session includes presentations focusing on managing safety and security. Topics include the challenges and key success factors used to effectively manage construction workforce safety and yield world class safety performance; an explanation on method used in applying the safety evaluation concepts and improved accident prevention; as well as a conceptual framework for the creation of a corporate security organisation that promotes a security culture within the corporation as opposed to dictating a security protocol.

**12446 Managing the Safety of Large, Onshore Workforces - The Qatargas 2 Project Experience**  
M. Pratt, C.T. Khoo and Y.Lee, Qatargas

**12828 How Corporate HSE Bureaucracies Impede Accident Prevention**  
C.D. Veley, vPSI Group LLC

**12738 Transforming Security into a Core Business Practice**  
S.B. Simmons and R.F. Jenney, ExxonMobil Corp.

**ALTERNATES/POSTERS**

**12694 The Human Factors Assessment and Classification System (HFACS) for the Oil & Gas Industry**  
A.L. Aas, Norwegian U. of Science & Technology

**12602 Implementation of Driving and Journey Management System in Central Sumatra Operation**  
G. Wirarmaja, R. Gavendran and E. Yuelni, Schlumberger

**12360 IRMA - Incident Response Management in the Oil and Gas industry**  
S.O. Johnsen, SINTEF

**Thursday, 4 December • 1100-1230 hours  
Meeting Room 407**

**SESSION 23: GAS TECHNOLOGY**

**Session Chairpersons:**  
**Rashed M. Al-Dossary**, Saudi Aramco  
**Paul Worthington**, Gaffney, Cline & Assocs.

This session includes several excellent papers about the gas technology. The objective of this session is to share the latest technology about gas. For example: the CFZ (TM) Technology:

Enabling the Processing of High CO<sub>2</sub> and H<sub>2</sub>S Reserves and Geosequestration of Acid Gases, BTX Plant Performance Tests (Best Practice), and Acid Gas Removal System for Tangga Barat Cluster Gas Development – Case Study

**12708 Controlled Freeze Zone™ Technology: Enabling the Processing of High CO<sub>2</sub> and H<sub>2</sub>S Gas Reserves**  
J. Valencia, P.S. Northrop and C. Mart, ExxonMobil Upstream Research Co.

**12123 BTX Plant Performance Tests (Best Practice)**  
M.H. Al-Abdullatif and M.A. Al-Ghamdi, Saudi Aramco

**117125 Acid Gas Removal System for Tangga Barat Cluster Gas Development - Case Study**  
S. Muhamad, PETRONAS; Y. Teh, I. M Arif, H. A Rahman Sabri, N. Hassan and A. A Karim, PETRONAS Carigali Sdn. Bhd.

**ALTERNATES/POSTERS**

**12859 Technical Challenge of GTL Technologies**  
Y. Suehiro, Japan Oil, Gas & Metals Natl. Corp.; A. Nakamura, INPEX Corp.; T. Ohno, Japan Petroleum Exploration Co. Ltd.; O. Wakamura, Nippon Steel Corp.; R. Kajiyama, Chiyoda Corp.; N. Inoue, Osaka Gas Co. Ltd.

**12912 Development of Contaminated Gas & Oil Fields Using Existing and Breakthrough CO<sub>2</sub>/H<sub>2</sub>S Separation Technologies**  
T.C. Klaver and F. Guezebroek, Shell Global Solution Intl.

**12481 Removal of Acid Gas Emissions Using Hollow Fiber Gas Absorption Membrane Contactors**  
A.F. Ismail and A. Mansourizadeh, U. Teknologi Malaysia

**Thursday, 4 December • 1400-1530 hours  
Conference Hall 1**

**PANEL SESSION 3: COMPLEX RELATIONSHIPS**

**Session Moderators:**  
**Bruce Laws**, Vice President, Intl. - Europe/Africa/Latin America, Murphy E&P Co.  
**Zlatica Kraljevic**, Dean of Institutional Relations, Prince Mohammad Bin Fahd U., Saudi Arabia

**Speakers:**

- **Rob S. Franklin**, Vice President Production, Europe Caspian Russia, ExxonMobil Intl. Ltd.
- **Do Van Hau**, Vice President, PetroVietnam Group and Chairman, PVEP Members' Council
- **Sergio Guaso Montoya**, Sub Director for New E&P Contracts, PEMEX E&P
- **Michelle Michot Foss**, Chief Energy Economist, Jackson School of Geosciences, U. of Texas at Austin
- **Abdul Muin**, Vice Chairman, Government Executive Agency for Upstream Oil and Gas Business Activities (BPMIGAS)

Thursday, 4 December • 1400-1530 hours  
Meeting Rooms 302-303

**SESSION 24: CARBONATE EXPLORATION**

**Session Chairpersons:**

**Atef Ebed**, Horizon Energy LLC  
**Bernard J. Pierson**, U. Teknologi PETRONAS

Thursday, 4 December • 1400-1530 hours  
Meeting Rooms 304-305

**SESSION 25: HEAVY OIL 1**

**Session Chairpersons:**

**Anna Apanel**, ExxonMobil Production Co.  
**Ahmad Hussain**, PETRONAS Carigali Sdn. Bhd.

The session presentations demonstrate excellent example of how the geophysical application of seismic waves and well data can be used to improve the subsurface imaging. The papers cover the use of 3D interpretation techniques to avoid drilling hazards of shallow carbonate reefs, how to improve seismic/well ties using rock physics models and how to improve land seismic data using innovative transform methods. All examples given provide tools and methods to better understand and define the unsolved problems imaging of carbonate reservoirs in different environments.

This session provides an overview of the size and characteristics of heavy oil carbonate resources in the Middle East and results of studies that improve our understanding of diverse EOR processes. Laboratory studies of the VAPEX process illustrate the importance of accounting for convective dispersion when forecasting drainage rates. Visualisation experiments of CO<sub>2</sub> displacement in heavy and extra-heavy oils provide insight into the dilution process. Simulation and laboratory studies of CO<sub>2</sub> injection in complex turbidite reservoirs identify the key factors influencing recovery. Laboratory studies of microwave heating to assist gravity drainage are used to determine field-scale feasibility. Finally, field trials of a downhole vibration system used to increase oil production by reducing viscosity are examined.

- 12066 Novel Signal Enhancement Approaches and Advanced Seismic Imaging as Applied to a Land 3D Seismic Survey**  
J.M. Reilly, D.L. Hinkley, P. Traynin and R. Neelamani, ExxonMobil Upstream Research Co.; S. Chacko, P.D. Silitonga and G. Skeith, Mobil Cepu Ltd.

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- 12917 Well Log Data Conditioning Using a Rock Physics Modeling Approach: Examples from the Banyu Urip Field, East Java Basin**  
S. Chacko, Mobil Cepu Ltd.; S. Xu, ExxonMobil Upstream Research Co.

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- 12338 Paleozoic Limestone of the Kinta Valley: Paleogeography and Implications to the Regional and Petroleum Geology of Peninsular Malaysia**  
A.A. Kadir, C.W. Sum and B.J. Pierson, U. Teknologi PETRONAS; Z.T. Harith, PETRONAS

- 12426 An Overview of Heavy and Extra Heavy Oil Carbonate Reservoirs in the Middle East**  
J.W. Buza, Chevron Corp.

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- 12710 An Experimental Investigation into the Influence of Diffusion and Dispersion on Heavy Oil Recovery by VAPEX**  
A.S. Alkindi and A. Muggerridge, Imperial College; Y.M. Al-Wahaibi, Sultan Qaboos U.

- 12637 Reservoir Characterisation and CO<sub>2</sub>-EOR Injection Pilot Studies in Chicontepec Turbidite Reservoirs, Mexico**  
M. Abbaszadeh, Innovative Petrotech Solutions; K. Ohno and H. Okano, Japan Oil, Gas & Metals Natl. Corp.

**ALTERNATES/POSTERS**

**ALTERNATE/POSTER**

- 12130 Seismic Expression of Loss Zones within Carbonates of the Browse Basin**  
M.R. Power, Shell Intl. E&P Inc.

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- 12530 Characterising Carbonate Reservoirs through Sequence Stratigraphy and Seismic Attributes Analysis: An Example from the Miocene Carbonate of Central Luconia Province, Offshore Sarawak**  
M.R. Che Kob, M.Y. Ali and M.F. Idris, PETRONAS Research Sdn. Bhd.

- 12536 Microwave Assisted Gravity Drainage of Heavy Oils**  
B. Demiral, U. Teknologi PETRONAS; C. Acar, Schlumberger; S. Akin and B. Hascakir, Middle East Technical U.

Thursday, 4 December • 1400-1530 hours  
Meeting Room 306

**SESSION 26: FORMATION EVALUATION 1**

**Session Chairpersons:**  
**Doug Finley**, WellDynamics  
**Missy Feeley**, ExxonMobil

This session includes excellent examples, both laboratory studies and field case studies, of evolving techniques to enhance wellbore data acquisition and characterisation of diverse reservoir types. We will hear about optimising data acquisition and integrating formation evaluation techniques to calibrate predictive petrophysical models as well as a successful application of the “key well” concept to enhance formation evaluation. Laboratory studies of double displacement processes (water and gas flood) to optimize EOR will also be discussed.

- 12418    Application of Unique Methodology and Laboratory Capability for Evaluation of Enhanced Oil Recovery by Double Displacement Processes**  
F.H. Wang, E.M. Braun, J.D. Kuzan, N.F. Djabbarah, M.M. Honarpour, C.G. Chiasson and B.E. Milligan, ExxonMobil Upstream Research Co.

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- 12579    Successful Application of the Key Well Concept to Enhance Formation Evaluation**  
M.O. Amabeoku, D.G. Kersey, A.A. Al-Harbi, Al-Belowi and R.H.B. Nasser, Saudi Aramco

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- 12328    Data Acquisition and Formation Evaluation Strategies in Anisotropic, Tight Gas Reservoirs of the Sultanate of Oman**  
H. De Koningh and S.H. Al-Mahrooqi, Petroleum Development Oman; B.H. Herold and K. Cig, Schlumberger

**ALTERNATES/POSTERS**

- 12513    An Analysis of the At-bit Resistivity Decision Making Process**  
G. Lindsay, Baker Hughes

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- 11948    Acoustic Thin-Bed Analysis to Enhanced Stoneley Permeability and Mechanical Properties Processing in Laminated Carbonated Reservoirs**  
J.A. Franquet, Baker Hughes Inc.; S.A. Al Arfi and A. H. Ahmed Amiri, Abu Dhabi Co. for Onshore Oil Operations

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- 12108    Improved Techniques for Acquiring Pressure and Fluid Data in a Challenging Offshore Carbonate Environment**  
P.J. Weinheber, M.A. Rueda and A. Gisolf, Schlumberger; K.D. Contreiras and F. Van-Dunem, Sonangol P&P

Thursday, 4 December • 1400-1530 hours  
Meeting Rooms 307-309

**SESSION 27: SAND CONTROL**

**Session Chairpersons:**  
**Zoran Krilov**, U. of Zagreb  
**Ray Tibbles**, Schlumberger

This session deals with current state of the art completions for excluding sand. It is heavy weighted with case histories from around the world. While most of the session is targeted at actual case histories. Gravel pack modelling will also be covered. Given the diverse nature of the problems the industry is dealing with, a wide range of sand control topics have been assembled. Presentation will cover everything from open hole horizontal gravel packing to single trip multizone completions in cased holes. All in all, attendees should get good exposure for different solutions to some of the key sand control challenges today.

- 12448    Integrated Approach to Modeling Gravel Packs in Horizontal Wells**  
S. Jain, R.A. Chanpura, R.P. Barbedo and M.B. Moura, Schlumberger; A. Santos, PETROBRAS

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- 12388    Single Trip Multi Zone Gravel Packing - Case Study at Handil, Bekapai and Sisi Nubi Fields**  
E. Delattre, Total; M. Sofyan, S. Suryadana and M. Banman, Total E&P Indonesia

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- 12549    Unlocking the Limits of Extreme Length in Alternate Path Gravel Packing**  
C.S. Yeh, S. Clingman, B.A. Dale, T. Moffett and L.E. Harrison, ExxonMobil Upstream Research Co.; M.D. Barry, M.T. Hecker and D. Haeberle, ExxonMobil Development Co.

**ALTERNATES/POSTERS**

- 12711    Implementing a New Single-Trip Multi-Zone Frac Packing System with Integral Zone Isolation and Selective Production Capabilities**  
D.J. Walker, C. Hansen, J.M. Landry and C. Li, BJ Services Co.; E. Dellattre, Total

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- 12522    Sand Management Challenges in the South China Sea**  
S.B. Hussain, ExxonMobil E&P Malaysia; T. Gruening, ExxonMobil Corp.

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- 12390    Temana Field Pilot Implementation: A Shift in Sand Control Philosophy to Improve Well Performance**  
W. Wan Mohamad, M.B. Jadid and M.A. Wahba, PETRONAS Carigali Sdn. Bhd.

Thursday, 4 December • 1400-1530 hours  
Meeting Room 407

**SESSION 28: STATIC CHARACTERISATION AND MODELLING**

**Session Chairpersons:**

**Aussie Gautama**, Total E&P Indonesia  
**Liau Boon Leong**, Murphy Sabah Oil Co. Ltd.

In this Static Characterization and Modelling session, different approaches and methods on a wide range of reservoir types in order to assess various characteristics will be presented and discussed. The methods would cover various qualitative and quantitative characterization methods, pore network models combined with Hi Res B5-CT, integrated modelling of Karstification, using different types of data such as conventional logs, cores and Formation Test, mini fracturation tests and 3D seismic. The methods were applied in different environments/ types of reservoirs: deep water clastics, carbonates, oil sands besides the more general homogeneous & heterogeneous clastic rocks and the reservoir characteristics evaluated/ modelled are ranging from conventional characterization to rock structure, mechanics, karstification to connectivity and productivity.

- 12884 **Pore-Network Models Combined to High Resolution B5-CT to Assess Petrophysical Properties of Homogenous and Heterogeneous Rocks**  
S. Youssef, S. Bekri, D. Bauer, M. Han, M. Fleury, O. Vizika and E. Rosenberg, Inst. Francais du Petrole

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- 11968 **Comprehensive Mini-Frac Testing in the Gullfaks Field as a Tool for Characterisation of Reservoir Structure and Rock Mechanics**  
A. Bale, E. Berg, O.Mjelde and T.W. Kui, StatoilHydro; H. Fossen, U. of Bergen

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- 12511 **Quantitative Characterisation of Oligocene-Miocene Carbonate Mound Morphology from 3D Seismic Data: Applications to Geologic Modeling, East Java Basin, Indonesia**  
A. Ruf, ExxonMobil Oil Indonesia; J. Simo and T.M. Hughes, ExxonMobil Upstream Research Co.

**ALTERNATES/POSTERS**

- 12205 **Oil Sands Reservoir Characterisation in Athabasca, Canada**  
A. Takahashi and T. Torigoe, JAPEX

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- 12327 **Integrated Modeling of Karstification of a Central Luconia Field, Sarawak**  
M. Kosters, Shell; P.F. Hague, R.A. Hofmann and B. Hughes, Sarawak Shell Bhd.

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- 12894 **A Study of Static Modelling Factors that are Critical to Flow Simulation**  
Y. Liu, S. Atan and A.E. Mantilla, Marathon Oil Corp.

Thursday, 4 December • 1600-1730 hours  
Conference Hall 1

**SESSION 29: INTEGRATED PROJECT MANAGEMENT**

**Session Chairperson:**

**Datuk Dr. Abdul Rahim Hashim**, PETRONAS

The overall winning team of IPTC "Excellence in Project Integration" Award will present its winning project during this session.

Thursday, 4 December • 1600-1730 hours  
Meeting Rooms 302-303

**SESSION 30: GEOPHYSICAL METHODS**

**Session Chairpersons:**

**Ismail B. Haggag**, WesternGeco  
**Joe Reilly**, ExxonMobil Upstream Research Co.

This session looks at several less conventional methods for geophysical prospecting including two papers on CSEM (or Controlled Course Electromagnetics) and another on sonar. The CSEM papers discuss data interpretation uncertainties using both case histories and numerical models. The other paper covers a model called – SeaSeep which uses sonar and coring methods in combination with traditional geophysical methods explore marine basins for hydrocarbons.

- 12191 **Recent CSEM Learnings in Deepwater Borneo**  
M. Choo, C. Young, C. Ling, J. Beer and P. Shiner, Sarawak Shell Bhd.

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- 12254 **Inversion Algorithms for Marine Controlled-Source Electromagnetic Data**  
A. Abubakar, T.M. Habashy, M. Li and J. Liu, Schlumberger

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- 12839 **The Utilisation of SeaSeep Surveys (A Defense / Hydrography Spin-Off) to Identify and Sample Hydrocarbon Seeps in Offshore Frontier Basins**  
D.L. Orange, P.A. Teas and J. Decker, Black Gold Energy LLC; P. Baillie, TGS-NOPEC Geophysical Co.; M.D. Levey, AOA Geophysics Inc.

**ALTERNATES/POSTERS**

- 12844 **Application of CSEM Technology in Prospect Maturation: Lessons Learnt from Block 2F, Deepwater Sarawak, East Malaysia**  
E. Wong and A. Chuang, PETRONAS

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- 12485 **Imaging Improvement of Fractured and Faulted Basement Through Controlled Beam Migration - Examples from Diamond Field in Vietnam**  
N. EIKady and Y. Tan, PETRONAS; R. Bakar, PETRONAS Carigali Vietnam Ltd.; Z. Zhou, P. Khoo, and A. Tan, CGGVeritas

**12504 Wired Pipe-Enabled Logging While Drilling Applications**  
 M.J. Manning, J.D. Macpherson and D.E. Taylor, INTEQ; C. Peveto, N. Baksh and S.R. Lemke, Baker Hughes; L. Farnsworth, IntelliServ Inc.

**Thursday, 4 December • 1600-1730 hours**  
**Meeting Rooms 304-305**

**SESSION 31: HEAVY OIL 2**

**Session Chairpersons:**  
**Alain Labastie**, Total  
**Paul N. Smith**, Saudi Aramco

Heavy oil resources are becoming a hot bed of development activity. In this session, we will take a look at recent experiences in successfully deployed heavy oil developments. What determined whether these projects would succeed or fail? We share the results of one operator that re-visited a previously terminated steamflood. Were earlier conceptions of economic viability correct? Also in this session, success is shown to be a result of an operator's ability and willingness to adapt to changing field behavior. New methods, new technology and new mindsets = Success.

**12860 The Field Performance of SAGD Projects in Canada**  
 J. Jimenez, Shell Intl. E&P

**12361 Cold Lake Heavy Oil Development - A Success Story in Technology Application**  
 D. Greenidge, Imperial Oil Resources

**11894 Reserves are Added by Re-Thinking a 1983 Steamflood Pilot**  
 M.J. Economides, U. of Houston; D.G. Nelson, Rock Energy

**ALTERNATES/POSTERS**

**12159 Lessons Learnt and Experiences Gained in Developing Heavy Viscous Oil Field Using Pattern Waterflood - Case History of a Field in South Oman**  
 V.P. Gupta, A.S. Al Mahrooqi and C.A. Barrio, Petroleum Development Oman

**12750 Comparative Investigation of Thermal Processes for Marginal Bitumen Resources**  
 J. Wang, J.L. Bryan and A. Kantzas, U. of Calgary

**Thursday, 4 December • 1600-1730 hours**  
**Meeting Room 306**

**SESSION 32: FORMATION EVALUATION 2**

**Session Chairpersons:**  
**Mohamed Hashem**, Shell Intl. E&P Inc.  
**George J. Hirasaki**, Rice U.

This session offers formation evaluation using NMR, pressure, and stress measurements.

- Formation pressure while drilling offers a viable method for horizontal wells.

- NMR "Fluid Component Decomposition" allows direct fluid typing from time or  $T_2$  data.
- NMR is used in combination with bulk density logs for tight gas sands.
- The relationship between time on station and probability of losing a bottom hole assembly is examined.
- Downhole injection stress testing leads to a better understanding of hydraulic fracture height growth

**12103 Replacing Wireline Formation Pressure with Formation Pressure While Drilling in Long Horizontal Wells**  
 J.K. Larsen, Maersk Oil Qatar AS; C.J. Maeso and C.F. Liu, Schlumberger; R. Narayanan and R. Noman, Qatar Petroleum

**12837 Accurate NMR Fluid Typing Using Functional  $T_1/T_2$  Ratio and Fluid Component Decomposition**  
 B. Sun, J. Brantjes, C. Liu and G. Menard, Chevron Energy Technology Co.; M. Skalinski, Tengizchevroil

**11924 Petrophysical Properties Evaluation of Tight Gas Sand Reservoirs**  
 G.M. Hamada, King Fahd U. of Petroleum & Minerals; M.A. Abushanab, Shell Egypt Co.; M. El-Oraby, Halliburton

**ALTERNATE/POSTER**

**12237 Analysing the Critical Effects of Time on Station**  
 E.M. Tollefsen and A.L. Weber, Schlumberger; M. Hashem, Shell

**Thursday, 4 December • 1600-1730 hours**  
**Meeting Rooms 307-309**

**SESSION 33: OPERATIONS ENHANCEMENT**

**Session Chairpersons:**  
**Stephen A. Sakowski**, Gaffney, Cline & Associates  
**Nobuyuki Samizo**, Arabian Oil Co. Ltd.

This session includes several excellent examples of innovative technical approaches to a variety of operational challenges. We will hear about the integration of production testing and well flow models to enable real-time production optimization in the Digital Field, implementation of structured performance monitoring and aggressive root cause analysis to improve Electric Submersible Pump run life throughout an NOC's operations, and establishing Well Operability Limits to mitigate reservoir compaction failures in deepwater wells.

**12545 How to Handle Real-Life Well Production Instabilities and Uncertainties within "Digital Fields" - a Practical Application from Congo and Gabon**  
 J.A. Danquigny and M. Tison, Total; G. Ouaye and E. Segui, Total E&P Congo; M. Vie, Total Gabon

**12601 Electrical Submersible Pumping System: Striving for Sustainable Run-Life Improvement in Oil Fields**  
 B. Al-Barwani, A.S. Al-Bimani, I. Sipra, S. Al-Hajri, S. Armacanqui and H. Al-Riyami, Petroleum Development Oman

**12421 Well Operability Limits for Managing Production from Deepwater Reservoirs**  
 E.R. Grueschow, B.A. Dale, R. Pakal, J. Wallace, D. Haerberle and M. Asmann, ExxonMobil Upstream Research Co.

**ALTERNATES/POSTERS**

**12674 Mature Field Management - Production Facilities Asset Consolidation and Reservoir Management**  
 T. Irani, P. Pathak, T. Susanto, P. Widjaya, M.M. Daud, H. Priadi and J.T. Utomo, ExxonMobil Oil Indonesia Inc.

**12029 Selection Criteria for Artificial Lift Technique in Bokor Field**  
 D. Saenz and P.V. Pattay, Schlumberger; M.A. Wahba, M.B. Jadid, I.B. Subari and M.N. Abu Talib, PETRONAS Carigali Sdn. Bhd.

**12533 Integrated Data Analysis and Dynamic Fracture Modelling Key to Understand Complex Waterflood: Case Study of the Piercefield, North Sea**  
 B. Hustedt, Brunei Shell Petroleum Co. Sdn. Bhd.; J. Snippe, Shell U.K. Ltd.

**12537 Integration of Downstream and Upstream Capabilities for Field-Wide Production Optimisation**  
 A. Mardikar, Shell Global Solutions; E. Van Donkelaar, Shell Intl. Exploration; K. Goh, Shell

**Thursday, 4 December • 1600-1730 hours Meeting Room 406**

**SESSION 34: TECHNICAL SAFETY AND EMERGENCY PREPAREDNESS**

**Session Chairpersons:**  
**Emmanuel Garland**, Total E&P  
**Saba Abashawi**, Houston City Govn.

This session includes monitoring methodologies, management strategies in technical safety and studies and development in emergency preparedness. We will hear about proactive indicators to improve safety in remote operations offshore, mapping and monitoring the technical safety level to ensure a high safety performance and reducing the risk for major accidents, various management strategies to significantly reduce exposure to process safety incidents, practical implementation methodology to enhance the critical safety system reliability and availability. A study on freefall lifeboats structural capacity and acceleration induced loads on occupants is also featured.

**12359 Proactive Indicators Used in Remote Operations of Oil and Gas Fields**  
 S.O. Johnsen, Norwegian U. of Science and Technology

**12613 Safety of Occupants in Freefall Lifeboats - Injury Criteria & Limits**  
 R. Skjaeveland, StatoilHydro; M. Philippens, TNO Defence, Security and Safety

**12830 Preventing Major “Process Safety” Accident Events**  
 J. Foo and M. Serrano, Shell EP Asia Pacific

**ALTERNATE/POSTER**

**12331 Implementation of Safety Instrumented Functions for ESD System as Per IEC 61511 and IEC 61508**  
 C.A. Parikh, Kuwait Oil Co.

**Thursday, 4 December • 1600-1730 hours Meeting Room 407**

**SESSION 35: GAS TRANSPORTATION**

**Session Chairpersons:**  
**Martin Tiffen**, Total E&P Indonesia  
**Kamel Bennaceur**, Schlumberger

This session includes several excellent papers about Gas Transportation/Markets. The objective of this session is to share the latest technology about gas transportation.

**12078 The Potential of Compressed Natural Gas Transport in Asia**  
 X. Wang, XGAS LLC; M. Marongiu-Porcu, Economides Consultants

**12880 Development of Natural Gas Supply Chain by Means of Natural Gas Hydrate (NGH)**  
 T. Nogami and S. Watanabe, Mitsui E&S Co. Ltd.

**12215 Natural Gas Transportation Infrastructure Concepts**  
 M. Amani and M. Mohan, Texas A&M U. at Qatar

**ALTERNATES/POSTERS**

**12796 Methodology to Set an Investment Project Portfolio on Alternative Ways to Transport Natural Gas**  
 J. Biruel Jr., PETROBRAS

**12633 Overview and Outlook of Natural Gas Scenario in India: A Case Study**  
 R. Nischal, S. Kumar, S. Arora and N.K. Mitra, Oil & Natural Gas Corp. Ltd.

**12402 Gas Transport as Hydrate**  
 M.I. Pallipurath, Indian Inst. of Technology Khragpur

Friday, 5 December • 0900-1030 hours  
Conference Hall 1

**PANEL SESSION 4: E&P TECHNOLOGIES**

**Session Chairmen:**

**Muhammad Saggaf**, Manager, EXPEC Advanced Research Centre, Saudi Aramco  
**Ashok Belani**, Chief Technology Officer, Schlumberger

**Speakers:**

- **Manoelle Lepoutre**, Vice President, Research and Development, Total
- **Datuk Abdul Rahim Hj. Hashim**, Vice President, Research & Technology Div., PETRONAS
- **Sara N. Ortwein**, Vice President, Engineering, ExxonMobil Development Co.
- **Robert Brunck**, Chairman and CEO, CGGVeritas
- **Matthias Bichsel**, Executive Vice President Technical, Shell Intl. E&P B.V.

Friday, 5 December • 0900-1030 hours  
Meeting Rooms 302-303

**SESSION 36: INTEGRATED STUDIES**

**Session Chairpersons:**

**Louai Machhour**, Total  
**Robert Shoup**, Uzma Consulting Ltd.

As industry explores for and develops prospects in increasingly challenging settings it is imperative to use multi-disciplinary integrated studies to minimise risk and maximize returns. The integration of geological, geophysical, petrophysical, and reservoir data can help ensure a thorough understanding of the field and how best to exploit it. In this session we will hear how integrated studies have been applied to the definition and development of prospects in several settings. We will hear about reservoir characterisation of shoreface sands at the Jansz/lo Gas Field, NW Shelf, Australia; prediction of reservoir distribution and quality for deepwater sands in the tectonically active NW Borneo Slope and finally about the geodynamic controls on the structural development of NW Borneo.

**12461 Reservoir Definition at the Jansz/lo Gas Field, NW Shelf, Australia: A Case Study of an Integrated Project from Exploration to Development**

C.C. Jenkins, R.M. Chiquito, P.N. Glenton, A.A. Mills, M.C. Schapper, M.A. Williams and J. McPherson, ExxonMobil

**12478 Prediction of Reservoir Distribution and Quality in Tectonically Active NW Borneo Slope**

M. Grecula, S. Kattah, O. Akinsanmi, H. Uy, K. Hedeir, P. Osterloff, K. Maguire and P. Shiner, Sarawak Shell Berhad; A.A. Ashaari, PETRONAS; N. Turner, Shell Malaysia E&P

**12845 Geodynamic Evolution of the NW Borneo Wedge: New Structural Guidelines for Exploration**  
T. Rives, F. Sapin and J. Ringenbach, Total;  
M. Pubellier, Ecole Normale Supérieure de Paris

**ALTERNATES/POSTERS**

**12203 Bubut - A Near Field Exploration Success, Inboard Brunei**  
Z. Ahmad, E.S. Hassan, K. Raghavan, I. Donaldson, H. Kooper, G. Maier, M. Dean, C. Tucker and S. Glover, Brunei Shell Petroleum Sdn. Bhd.

**12686 Uncertainties Associated with Trapping Mechanism of Burgan Reserves in the Bahrah Area, Kuwait**  
A. Ahmed, S.S. Thakur and H. Al-Owaihian, Kuwait Oil Co.

Friday, 5 December • 0900-1030 hours  
Meeting Rooms 304-305

**SESSION 37: ADVANCED COMPLETION TECHNIQUES**

**Session Chairpersons**

**Mohamed R. Al-Khatib**, Saudi Aramco  
**Shahid Azizul Haq**, Schlumberger

Oil and gas companies are increasingly reliant on advanced completion techniques to develop new fields and to maximize recovery from existing assets. The papers in this session discuss advancement in well completions and illustrate its short and long term benefits. The first paper evaluates the impact of reservoir uncertainty on selection of advanced completions using the probabilistic approach. The second paper describes the case study of installation and experience of smart completions in a high pressure gas environment. The third paper shares the case history of an intelligent completion in an expandable sand screen for a deepwater field development.

**115744 Impact of Reservoir Uncertainty on Selection of Advanced Completion Type**  
D.R. Davies, V.M. Birchenko and V. Demyanov, Heriot-Watt U.; M.R. Konopczynski, WellDynamics Inc.

**12415 Smart-Completion Installation and Experience in a High Pressure Gas Environment in Champion West Field, Offshore Brunei**  
N. Al-Farsi, Brunei Shell Petroleum Sdn. Bhd.

**115270 Unique Solution for Fracture Isolation Resolves Water/Gas Breakthrough Challenges in Horizontal Slimhole Well**  
T. Jorgensen, Halliburton Co.; M.I. Al-Umran and P.K. Agrawal, Saudi Aramco

**ALTERNATE/POSTER**

- 11997 Swelling Packers: Lab and Testing Field Application**  
 A.S. Al-Yami, M.K. Al-Arfaj, S.H. Al-Salehsalah and A.S. Al-Humaidi, Saudi Aramco;  
 H.A. Nasr-El-Din, Texas A&M U.

**Friday, 5 December • 0900-1030 hours  
 Meeting Room 306**

**SESSION 38: GEOSCIENCES IN DEVELOPMENT AND PRODUCTION**

**Session Chairpersons:**  
**Xinghui Liu**, Pinnacle Technologies  
**Billy W. McDaniel**, Halliburton

This session includes discussion of a azimuthal deep resistivity that produces “Geosignals” for steering control of the bit, improving our chance to avoid the OW contact. Also, we will hear how Reservoir Connectivity Analysis (RCA) is used to chose better placement for wellbores. The discussion of numerous seafloor and near seafloor geohazards in deep water applications will follow, and illustrate that such concerns can alter a project to use seafloor completions.

- 12547 Integrating Images from Multiple Depths of Investigation and Quantitative Signal Inversion in Real Time for Accurate Well Placement**  
 R.E. Chemali, M. Wu, F. Hveding, M.S. Bittar and M.R. Dautel, Halliburton Sperry Drilling

- 12383 Understanding the Plumbing in Your Field - Application of Reservoir Connectivity Analysis to Improve Oil and Gas Recovery**  
 E. Tioe, M. Elias and M. Sarif, ExxonMobil E&P Malaysia Inc.; P. Vrolijk, ExxonMobil Upstream Research Co.

- 12554 Gumusut-Kakap Project - Geohazard Characterisation and Impact on Field Development Plans**  
 C. Hadley, D. Peters and A. Vaughan, Shell Intl. E&P Inc; D. Bean, Sarawak Shell Bhd

**ALTERNATES/POSTERS**

- 12213 Geochemical Evaluation of Reservoir Compartment, Effective Pay Zone and Origin of Gas Seepage in Production Site Using Gas Molecular and Isotopic Composition**  
 A. Waseda and H. Iwano, JAPEX; S. Kato, JGI, Inc.

- 12372 Geosteering in Thin Reservoirs for Maximum Reservoir Contact**  
 W. Al-Alqum and P.J. Butt, Schlumberger;  
 T. Al-Zahrani, U.F. Khan and A. S. Laota, Saudi Aramco; A.K. Jain, Oil & Natural Gas Corp. Ltd.

- 12878 Wellbore Stability Prediction and Anisotropic Modeling in Highly Tectonic Basin, Eastern India**  
 M. Azeemuddin, Chevron Corp.; H. Lee, Baker Hughes; S. Ong, Fronterra Geosciences; P. Mishra and D. Waghorn, Premier Oil

- 11838 Integrated Approach for Formation Damage Identification to Improve Productivity in Matured Field**  
 S.K. Subbiah, E. Wielemaker, L. Hopper and L.I. Fernandez, Schlumberger; P. Joia and N. Edwards, Petrom SA Romania

**Friday, 5 December • 0900-1030 hours  
 Meeting Rooms 307-309**

**SESSION 39: FLOW ASSURANCE AND MEASUREMENT**

**Session Chairpersons:**  
**Rex Wat**, StatoilHydro  
**Mingdong Yuan**, Baker Petrolite Corp.

Some recent advancements on flow assurance and measurement issues will be presented in this session. These include a field example highlighting the adaptation of coil tubing intervention technique for deep water flow lines blockage diagnosis and removal, various case histories of successful paraffin inhibitor application for the challenging cold deepwater environment with the aid of HP viscometry during product optimisation. A field study on the use of multiphase flow meter in high water cut wells, its accuracy and technique to reconcile with traditional separator measurements will be included.

- 12775 Applying Well Remediation Techniques to Subsea Flowlines in Deepwater Gulf of Mexico**  
 G.J. Bowen and L.A. Weber, Schlumberger;  
 M.D. Baugh, Shell Exploration & Production

- 12127 Paraffin Inhibitors Applications in Deepwater Offshore Developments**  
 M.E. Newberry and D.W. Jennings, Baker Petrolite Corp.

- 114127 Reliability of Multiphase Flowmeters & Test Separators in High Water-Cut**  
 K.I. Ojukwu, Shell UK Ltd.; J.E. Edwards, Schlumberger

**ALTERNATES/POSTERS**

- 11972 Determination and Prediction of Wax Deposition from Alaska North Slope Crude Oil**  
 T. Zhu and V.B. Kulkarni, U. of Alaska

- 12182 New Measurement Best Practices for the Digital Oilfield**  
 P. Schwarz and W. Baker, Emerson Process Management

- 12624 Optimising Well Integrity Surveillance and Maintenance**  
 T.M. Lane and S. Kairon, ExxonMobil Corp.;  
 M.D. Murrey, ExxonMobil Production Co.

- 12628 Field Case Histories Demonstrating Critical Role of PLT Flow Model Selection for Improved Water Shut-off Results in Offshore Thailand**  
L. Ouyang, Chevron ETC

Friday, 5 December • 0900-1030 hours  
Meeting Room 407

**SESSION 40: UNCONVENTIONAL GAS**

**Session Chairpersons:**  
**Geoff Barker**, RISC Pty. Ltd.  
**Jose Biruel Jr.**, PETROBRAS

This session includes several excellent papers about unconventional gas. The objective of this session is to share the latest study about gas. This session will include the following papers: The Evaluation of Organic Richness and Maturation of Shale Gas Unconventional Reservoirs from Porosity and Resistivity Logs, Small Scale and Mini-LNG Systems for Emission Recovery from Bio-Gas, Landfill Gas, CBM, Flare Gas and Utilization of other Stranded Gas Sources, and Petrophysical Evaluation of Gas Hydrate Formations.

- 12835 Small Scale and Mini-LNG Systems for Emission Recovery from Bio-Gas, Landfill Gas, CBM, Flare Gas and Utilisation of Other Stranded Gas Sources**  
S. Kunert and D. Vosskotter, Hamworthy Gas System AS;
- 
- 12610 Petrophysical Evaluation of Gas Hydrate Formations**  
P.F. Worthington, Gaffney, Cline & Associates
- 
- 115985 Selecting Optimal Fracturing Fluid Systems and Techniques for CBM Wells in NSW Australia**  
R.L. Guerra, R. Stanley and P. Unwin, BJ Services Co.; M.L. Roy, Sydney Gas Co.; J.D. Michalopoulos, Santos Ltd.

**ALTERNATE/POSTER**

- 12248 Semi-Analytical Study of Production of Gas Hydrates and Their Techno-Economic Uses**  
I.B. Kurawle, M. Kaul, Z. Amin and N. Kulkarni, U. of Pune

Friday, 5 December • 1100-1230 hours  
Meeting Rooms 302-303

**SESSION 41: PALAEO GEOGRAPHY**

**Session Chairpersons:**  
**John McPherson**, ExxonMobil Exploration Australia  
**Guy Oliver**, Fugro Robertson Ltd.

The role of palaeogeography and palaeoclimatic variation as one of the main controls on sedimentary facies and stratal architecture has received a significant resurgence of interest over the last five or so years. This has coincided with a now universal interest in climate change that has stimulated the

development of a new generation of sophisticated general circulation models (GCMs). The application of these to past climates is referred to as palaeo-Earth systems modelling. With the increasing need for new ventures exploration, the oil industry is taking advantage of this synergy between climatic and geological modelling to reduce exploration risk.

- 12420 Integrated Genetic Analysis of Sediment Generation and Evolution to Predict Basin-Scale Clastic Reservoir/Seal Distribution and Character**  
B. Heins, D.B. O'Grady and C. J. Ardic, ExxonMobil Upstream Research
- 
- 12257 Paleo-Environmental Reconstruction and Analysis (Paleogeography, Paleoclimate, Paleo-Oceanography, Paleobiology) as Part of Integrated Source Rock Prediction**  
K. Bohacs and C. Fraticelli, ExxonMobil Upstream Research Co.
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- 12923 The Assessment Cretaceous Palaeogeography and Palaeo-Earth Systems Model Results: Climate Proxies, Model/Data Comparisons and Sensitivity Tests**  
J.P. Harris, Fugro Robertson Ltd.; R. Crossley and N. Stronach, Robertson Research Intl. Ltd.

**ALTERNATES/POSTERS**

- 12720 Phanerozoic Plate Reconstructions of the Middle East: Insights into the Context of Arabian Tectonics and Sedimentation**  
C. Johnson, ExxonMobil Upstream Research Co.
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- 12609 Drainage Network Response to Geological Structures: A Case Study of Joya Mair Oil Field (Pakistan)**  
F. Shahzad, S.A. Mahmmod and R. Gloaguen, Technology U. Freiberg, Germany

Friday, 5 December • 1100-1230 hours  
Meeting Rooms 304-305

**SESSION 42: COMPLETIONS CASE HISTORIES**

**Session Chairpersons:**  
**Michael Economides**, U. of Houston  
**Von Henderson**, Baker Hughes

The papers presented in this session concern innovative techniques to overcome the difficulties encountered while performing completions in challenging well geometries and formation characteristics. The authors will discuss selective completions in long horizontal wells, propellant assisted perforating for stimulation in carbonates, and ESP assisted under- balanced perforating. In all cases the goal was to maximise well productivity. Case histories of these techniques will be shown and discussed as well as challenges yet to be solved.

- 116541 Challenges in Completing Long Horizontal Wells Selectively**  
B.J. White, I. Abbasy and M.J. Pitts, Maersk Oil Qatar AS; M.R. Jaafar, Qatar Petroleum

**12334 Propellant-Assisted Perforating - An Alternative Stimulation Solution in Heavily Karstified Carbonate Reservoirs**  
 F. Robinson, Sarawak Shell Bhd.; D. Wong, Halliburton; M.S. Brinsden, Shell Intl. E&P; K.C. Folse, Marathon Oil Corp.

**11904 Integrated Solution for Permanent ESP Completions Using Underbalanced Perforation System as An Alternative Methodology**  
 L. Mercado Hurtado, REPSOL YPF; K. Khaira and Y. Omrani, Schlumberger; G. Pina Canaveras, Inst. Superior de la Energia

**ALTERNATES/POSTERS**

**12008 Coiled Tubing Interventions for Ultra-Deepwater Completions in Angola**  
 A. Tambe and E. Seenath, Schlumberger; R.C. Bialecki; P. Kelman, Total E&P Angola

**12381 Case Study – The Disappearing Plug Provides Cost Efficient Horizontal Completions for an Operator in Malaysia**  
 K.A. King, and L.Y. Wong, Halliburton

**12770 History & Analysis of Chrome Tubing Completions at Prudhoe Bay Alaska**  
 R.S. Rossberg, BP Exploration (Alaska) Inc.; J.Y. Julian, BP Exploration

**11964 Remedial Expandable Tubular Successfully Scab Off Severe Casing Leaks**  
 R.A. Bargawi and S. Zhou, Saudi Aramco; W. El Mofty, Eventure GT

**12572 An Innovative Workflow to Model Fractures in a Giant Carbonate Reservoir**  
 M. Hui, B.T. Mallison and K. Kim, Chevron Energy Technology Co.

**12665 Experimental Design and Response Surface Models as a Basis for the Stochastic History Match - A Niger Delta Experience**  
 C. Amudo, Chevron Australia Pty Ltd; R.R. Dandekar, T. Graf and F. Ben Amor, Schlumberger; R.S. May and N.R. Harris, Chevron Nigeria Ltd.

**ALTERNATES/POSTERS**

**12261 A Comparison Study of Various Approaches for Modeling Fracture Reservoirs-Dual Porosity, Single Porosity Effective Medium, and Explicit Fracture Modeling**  
 L. Li, Chevron Corp.; V.T. Hoang, Chevron Energy

**12801 Hammerless Union - The Safer Alternative**  
 P.B. Crawford, Texas A&M U.; J. Graf, BJ Services Co.

**Friday, 5 December • 1100-1230 hours Meeting Rooms 307-309**

**SESSION 44: FACILITIES**

**Session Chairpersons:**  
**Alex Alexandrou**, CoreLab ProTechnics  
**Daniel Plathey**, Total

**Friday, 5 December • 1100-1230 hours Meeting Room 306**

**SESSION 43: DYNAMIC CHARACTERISATION & MODELLING 1**

**Session Chairpersons:**  
**Wen H. Chen**, Chevron Corp.  
**Steve Burford**, Murphy Sarawak Oil Co. Ltd

In this session, we will concentrate on: 1) development of a parallel reservoir simulator for fully unstructured grid reservoir models focusing on flexible, hierarchical object-oriented design, adaptive implicit method, and dynamic load balancing, 2) development of an innovative workflow and its associated techniques for modeling discrete fractures in a carbonate reservoir, and 3) application of experimental design and response surface models to identify the “heavy hitters”, improve the reservoir model, and facilitate the stochastic history matching process. Field examples will be included to demonstrate the effectiveness of proposed techniques in dealing with real problems.

**12199 Adaptive Parallel Reservoir Simulation**  
 P. Lu and J.S. Shaw, ExxonMobil; T.K. Eccles, I.D. Mishev and B.L. Beckner, ExxonMobil Upstream Research Co.; A.K. Usadi, ExxonMobil CSR

This session include several excellent examples of superior facilities design and operations with the objective of maximizing production volume and minimising costs. We will hear about the use of expertise and resources of contractors new to the offshore industry in the construction of the world’s largest offshore LNG terminal and the lessons learnt from the operation of a huge floating production unit made of pre-stressed concrete; We will hear about the integration and customisation of different project management processes used to design and procure the topsides of a mega-deepwater project. And finally we will hear about the challenges to providing robust corrosion control and inhibition in offshore environments and the solutions achieved through development of new corrosion inhibitors and innovative subsea facilities design.

**12803 The World’s First Offshore LNG Receiving Terminal**  
 B Wesselink and L.B. Waters, Terminale GNL Adriatico Srl; B.D. Edwards, R. Elimov, G.L. Hurst, M.D. Jenkinson and S.D. Vaughn, ExxonMobil Development Co.

**12546 Lessons Learnt from 12 Years Operations of a Huge Floating Production Unit Made of Pre-Stressed High Performance Concrete**  
B. Lanquetin, H. Dendani and P. Collet, Total S.A.; J. Esteve, Bureau Veritas

**12382 Providing "Mega-Project" Topsides Facilities in Deepwater Malaysia**  
C.J. Langley, Sabah Shell Petroleum Co.

**ALTERNATES/POSTERS**

**12405 Development of Corrosion Inhibitor and Kinetic Hydrate Inhibitor for the Pearl GTL Project**  
S. McFarland, Shell; H. Pit and R. Unsal, Qatar Shell GTL Ltd.; H. de Reus, Shell Global Solutions

**12788 Top of Line Pipeline Corrosion Management Through Innovate Subsea Facility Design**  
P.R. Russ and B. Douglas, Esso Australia Pty. Ltd.; D. Pugh, ExxonMobil; D.A. Norman, ExxonMobil Upstream Research; C.C. Monahan, ExxonMobil Production Co.

**Friday, 5 December • 1100-1230 hours  
Meeting Room 406**

**SESSION 45: ENVIRONMENT AND CO<sub>2</sub> MANAGEMENT**

**Session Chairpersons:**

**John Hall**, Halliburton  
**Gary Walter**, Southwest Research Inst.

This session presents practical and innovative approaches to managing environmental impacts of fossil fuel production. On the important topic of carbon dioxide management, we will hear about design of a geologic carbon sequestration (GCS) project in a low permeability formation and application radar satellite monitoring of a GCS project. We will also learn about the practical performance of bioremediation in treating oily sludge and oil contaminated soil, and hear about an innovative approach to sequestering excess sulfur while generating useful energy. Finally, we will learn about the challenges of managing NORM waste in the absence of regulatory controls.

**12895 The ZeroGen Project**  
J. Bierman, Shell Clean Coal Energy

**12294 Surface Heave Detection Related with CO<sub>2</sub> Injection by DInSAR at In Salah, Algeria**  
T. Onuma and K. Okada, JGI, Inc.; S. Ohkawa, Japan Petroleum Exploration Co., Ltd.

**12396 Bioremediation of Oil Contaminated Land at Dikom Site at Duliajan, Assam, India: A Field Case Study**  
A. Mandal, P.M. Sarma, B. Lal and A. Swaleh, The Energy and Resources Inst. (TERI); H. Das, Oil India Ltd.

**ALTERNATES/POSTERS**

**12084 Bioremediation Techniques for Oil-Sludge Treatment at the Arun Field**  
E.T. Putri, ExxonMobil; N.S. Khanim, ExxonMobil Oil Indonesia Inc.; A.D. Syakti, Center for Coastal & Marine Resources Studies, Bogor Agricultural U.

**12322 Material and Energy Balances for Sulfur Disposal in Sulfates**  
T. Rappold, Columbia U.

**12857 Problems of Dealing with NORM in a Country with Limited Experience of Managing Radioactive Waste**  
J.K. Al-Handhali, Petroleum Development Oman; B. Heaton, Aberdeen Radiation Protection

**Friday, 5 December • 1100-1230 hours  
Meeting Room 407**

**SESSION 46: ECLECTIC INJECTION**

**Session Chairpersons:**

**Alain Labastie**, Total  
**Aneltse Lara**, PETROBRAS

This session includes several excellent examples of different types of fluids injection to increase production and recovery. We will hear about new technologies and approaches used for water and gas injection in offshore and onshore fields. Sour gas injection development, hot water injection for reservoirs with wax appearance temperatures will be addressed. Numerical modeling of gas injection and complex reservoirs used to enhance the existing depletion plan and identify improved oil recovery opportunities are also presented.

**12175 Life Cycle of a Depletion Drive and Sour Gas Injection Development: an Example from an A4C Reservoir, South Oman**  
B. Haynes, N.C. Kaura and A. Faulkner, Petroleum Development Oman

**12622 Hot Water Injection Pilot: A Key to the Waterflood Design for the Waxy Crudes of the Mangala and Aishwariya Fields**  
S. Kumar, D. Beliveau, R. Tandon and P. Kumar, Cairn Energy India Pty. Ltd.

**12804 Seligi: Complex Modeling Case Study and Optimisation of a Malay Basin Giant**  
N. Hartshone, M. Abdullah and K. Yap, ExxonMobil E&P Malaysia Inc.; D.S. Frankel, ExxonMobil Production Co.; E. Abdul Razak, PETRONAS

**ALTERNATES/POSTERS**

**12584 Achieving Excellence in Water Injection through Application of Innovative Technology**  
M.A. Choudhary, H.R. Al-Rasheedi, A.A. Mahmeed, H.A. Mubarak and M. Al-Hajeri, Kuwait Gulf Oil Co.

**12867 Gas Injection: Rigorous Black-Oil or Fast Compositional Model**  
P. Ceragioli, Eni SpA

Friday, 5 December • 1430-1630 hours  
Meeting Rooms 302-303

**SESSION 47: DEEP EXPLORATION AND FRACTURED BASEMENT & UNCONVENTIONAL**

**Session Chairpersons:**

**Michael Jellison**, Grant Prideco  
**Eugene Murphy**, Kenda Capital LLC

This session includes several interesting papers that address basement reservoirs and other unconventional oil and gas resources in various regions of the world. Topic to be discussed include: deep HPHT exploration targets in Indonesia, fractured basement characterization employing Continuous Fracture Modeling and pore pressure prediction in deepwater exploration. Papers covering unconventional reservoirs in the Middle East and Asia and tight gas exploration in China are also presented.

**12479    Compaction-Driven Hydrodynamic Traps in the Kutai Basin: A Renewed Interest for the HPHT Exploration Targets**  
A.M. Ramdhan and N.R. Gouly, Durham U.;  
G. Smaghe, Total E&P Indonesia; R.E. Swarbrick, GeoPressure Technology Ltd.

**12055    Fractured Basement Characterisation from Multi-Attributes Guided Integrated Continuous Fracture Modeling**  
A. Carrillat and M. Lefranc, Schlumberger

**12072    Theory and Applications of Integrated Pore Pressure Prediction in Deepwater Exploration**  
A.L. Liaw, Anadarko Petroleum Corp.

**12743    Importance of Unconventional Oil Resources in Shaping the Far East Energy Future**  
P. Stark, B. Fryklund and K. Chew, IHS

**ALTERNATES/POSTERS**

**12417    Integrated Interpretation Identifies Unconventional Basement Reservoirs in the Sabatayn Basin, Yemen**  
B. Choi, J. Choi and B. Kim, KNOC Yemen;  
E. Park, Korea Natl. Oil Corp.

**12527    Integrated Analysis of Tight Gas Exploration Well Fracture Treatment in China**  
J.R. Shaoul and J. de Koning, Pinnacle Technologies; C. Chapuis, P. Falxa and J.P. Rochon, Total E&P

Friday, 5 December • 1430-1630 hours  
Meeting Rooms 304-305

**SESSION 48: EMERGING EOR**

**Session Chairpersons:**

**Paul N. Smith**, Saudi Aramco  
**Gary Teletzke**, ExxonMobil Upstream Research Co.

Increasing oil prices and oil demand have created a surge in EOR research and activity, which is creating a new enthusiasm for a more fundamental approach to EOR research. In this session, we will see how:

- New surfactants are being investigated in relation to their ability to alter wettability and reduce interfacial tension.
- Low salinity water flooding is garnering increasing attention as a potential method of increasing recovery from the reservoirs.
- The ability to model pore scale phenomena is advancing due to new tools, such as micro-CT scanning, which are improving our understanding of the rock architecture and the recovery processes which occur there.

**115386    Recent Advances in Surfactant EOR**  
G.J. Hirasaki and C.A. Miller, Rice U.

**12004    Low Salinity Brine Injection for EOR on Alaska North Slope (ANS)**  
S. Patil, A.Y. Dandekar, S.B. Patil, S.L. Patil and S. Khataniar, U. of Alaska Fairbanks

**12767    3D Imaging of Reservoir Core at Multiple Scales; Correlations to Petrophysical Properties and Pore Scale Fluid Distributions**  
A. Ghous, M.A. LKnackstedt, C.H. Arns, A.P. Sheppard, M. Kumar, R.M.Sok, T.J. Senden, S. Latham, A.C. Jones and H.Averdunk, Australian Natl. U.; W.V. Pinczewski, U. of New South Wales

**12292    Pore-Scale Modeling of Rate Effects in Waterflooding**  
N.A. Idowu and M.J. Blunt, Imperial College

**ALTERNATE/POSTER**

**12749    Method for Interfacial Tension Measurements in Microbial Improved Oil Recovery with Rhodococcus Sp. 094**  
C.M. Crescente and E. Kowalewski, StatoilHydro;  
M.S. Afrapoli, L. Hultmann, K. Rasmussen, O. Torsaeter and A. Stroem, Norwegian U. of Science & Technology

Friday, 5 December • 1430-1630 hours  
Meeting Room 306

**SESSION 49: DYNAMIC CHARACTERISATION & MODELLING 2**

**Session Chairpersons:**

Haq Nawaz Minhas, PETRONAS Carigali Sdn. Bhd.  
Tomomi Yamada, JAPEX

Appropriate modelling of reservoir dynamics is crucial to successful field development. In this session, we will discuss acquisition, analysis, incorporation and reproduction of various dynamic information through different approaches. Presentations include natural fracture delineation from micro-seismic monitoring, coupled surface/subsurface numerical simulation, new 3-phase relative permeability model for gas-cap blow down, production / injection profiling with distributed temperature sensing, sub-seismic scale modelling of gravel beds and shale drapes for deep water reservoir, tackling uncertain data on brown field, history-matching assisted by genetic algorithms-based optimisation and integrated modelling of a complex turbidite reservoir.

**12391 Fractured Reservoir Characterisation Incorporating Microseismic Monitoring and Pressure Analysis During Massive Hydraulic Injection**  
K. Tezuka, R. Kamitsuji and T. Tamagawa, Japan Petroleum Exploration Co. Ltd.

**12500 Optimisation of Surface Network and Platform Location Using a Next Generation Reservoir Simulator Coupled with an Integrated Asset Optimiser - An Application to an Offshore Deep Water Oil Field in Brazil**  
F.P. Camposana and R.L. Almeida, PETROBRAS;  
S.H. Sousa, M. Madeira and M. Spinola, Landmark

**12227 A New Three-Phase Oil Relative Permeability Simulation Model Tuned by Experimental Data**  
B.B. Yuen, A.L. Siu, A.A. Al-Turki, N. Bukhamseen, S.H. Shenawi and S. Lyngra, Saudi Aramco

**12337 Integrated Reservoir Modeling to Enable Development of a Complex Turbidite Deepwater Discovery**  
J.Y. Yeo and G. Stone, Shell Malaysia E&P

**ALTERNATES/POSTERS**

**12343 Real-Time Estimation of Total Flow Rate and Flow Profiling in DTS-Instrumented Wells**  
C. Kabir and B. Izgec, Chevron ETC; R. Hasan, U. of Minnesota-Duluth; X. Wan and J. Lee, Baker Hughes

**12892 Improving Performance Prediction in Deep-Water Reservoirs: Learning from Outcrop Analogues, Conceptual Models and Flow Simulation**  
J. Stewart, P.A. Dunn, K. Champion, C. Lyttle and A. Oyerinde, ExxonMobil Upstream Research Co.; B. Fischer, Aspen Technology, Inc.

**12454 Integrated Study for Field Development Challenge of a Brown Field with Seven Stacked Reservoirs**  
E. Kasap, D. Qassabi, R.B. Lukmanov, R. Busaidi and A. Zarafi, Petroleum Development Oman

**12745 Reconciling History-Matching and Assessment of Uncertainty in Production Forecasts: A Study Combining Experimental Design, Proxy Models and Genetic Algorithms**  
A. Castellini, Chevron ETC; A. Vahedi, R.S. Sawiris, U. Singh and T. Roach, Chevron Australia Pty. Ltd.

Friday, 5 December • 1430–1630 hours  
Meeting Rooms 307-309

**SESSION 50: CASE STUDIES**

**Session Chairpersons:**

Liu He, Daqing Oilfield Co. Ltd.  
Hisham A. Nasr-El-Din, Texas A&M U.

The papers of this session cover both hydraulic and acid fracturing treatments. Field cases cover typical problems associated with proppant fracturing in sandstone reservoirs (proppant flow back) and acid fracturing in carbonates (high leak-off rate of the acids used). The session also includes papers that review sandstone acidising over the last century, modeling and optimization of fracturing treatments, and finally, evaluation of fracturing treatments using chemical tracers. A lot of lessons can be learned from these thorough field cases.

**112461 Controlling Proppant Flow Back to Maintain Fracture Conductivity and Minimise Workovers - Lessons Learned from 1500 Fracturing Treatments**  
P.D. Nguyen, J.M. Trela and B.R. Smith, Halliburton Energy Services Group

**12147 Resolving Created, Propped and Effective Hydraulic Fracture Length**  
C.L. Cipolla, M.J. Mayerhofer and E. Lolon, Pinnacle Technologies

**11891 Post-Frac Analysis Based on Flowback Results Using Chemical Frac-Tracers**  
M. Asadi and R.A. Woodroof, ProTechnics;  
J.D. Dumas, Core Laboratories

**12183 Using Open and Cased Hole Sonic Anisotropy and Geomechanics Modeling for Hydraulic Fracturing Optimisation: A Case Study - Carmopolis Field, Northeast Brazil**  
C.C. De Almeida, B. Holzberg and C.R.G. De Carvalho, Schlumberger; R.C. Melo, PETROBRAS

**ALTERNATES/POSTERS**

**12303 Multi-Stage Fracturing Stimulations Improve Well Performance in Tight Oil Reservoirs of the Changqing Oilfield**  
X. Li, H. Wei, B. Chen, C. Wang and X. Zhao, PetroChina Changqing Oilfield Co.; X. Liu, Pinnacle Technologies

**115525 Field Trials of Fiber Assisted Stimulation in Saudi Arabia - An Innovative Non Damaging Technique for Achieving Effective Zonal Coverage during Acid Fracturing**  
 V. Ramanathan, Schlumberger; J.R. Soares, F. Al-Ghurairi, M. Al Ismail, J.J. Duenas and W. Nunez Garcia, Saudi Aramco; R.J. Hellman, Montana State U.

Friday, 5 December • 1430 – 1630 hours  
 Meeting Room 407

**SESSION 52: i-SMARTer FIELDS**

**Session Chairpersons:**  
**Doug Finley**, WellDynamics  
**Mohamed Hashem**, Shell Intl. E&P Inc.

Friday, 5 December • 1430–1630 hours  
 Meeting Room 406

**SESSION 51: MANAGING BUSINESS IN CHANGING ENVIRONMENT (ROUNDTABLE DISCUSSION SESSION)**

**Session Chairpersons:**  
**Pamir I. Bursin**, Schlumberger  
**Colin Stuart**, Stuart Wright Pte. Ltd.

The session will be conducted in a roundtable discussion format, with 5-10 minutes presentation for each paper. Group discussions will be held following the presentations, and the presenters will act as discussion leaders. The discussion leaders will work with the participants to discuss key issues, challenges and best practices. The leaders will report their findings to the audience for questions and answers.

This session includes “real” examples of successful application of intelligent well technology. Featured in this session are Smart Well papers as well as applications of passive inflow control. Attendees to this session will hear about a world’s first from Saudi Arabia: a slimhole Smart Well for improved recovery of “attic” oil. The second is broader application that highlights the successful reservoir management of a fractured carbonate using the Smart Fields approach. We’ll also hear about how passive inflow control devices were used to improve the performance of horizontal wells. And from Abu Dhabi, the successful application of passive inflow control to effectively extend the well life cycle will be presented.

**12615 The Comparison of the Severity and the Efficiency of Fiscal Terms in the Asia Pacific Region**  
 W. Hou and G. Allinson, U. of New South Wales

**12365 New Technology Applications for Improved Attic Oil Recovery: The World’s First Slim Smart Completions**  
 S. Lyngra, A.M. Al-Sofi, U.F. Al-Otaibi, M.J. Al-Shakhs and A.A. Al-Alawi, Saudi Aramco

**11850 Global Petroleum Market Entry Risk Assessment and Opportunity Mining Through Comparison Market Approach**  
 S. Rajan, Marathon Oil Co.

**117213 Horizontal Well Performance Optimisation Using Linearised Inflow Control Device**  
 D. Krinis, N.J. Dawood and Y. Soremi, Saudi Aramco

**12670 Creating and Sustaining Continuous Improvement Culture in a Technical Environment: An Insight into Implementation and Benefits Measurement Challenges**  
 A. Vellimana and A.H. Al-Mohsin, RasGas Co. Ltd.

**12712 Improved Management of a Fractured Carbonate Reservoir Using a Smart Fields Approach**  
 F. Marketz, M. Maskari, I.S. Sinani Al, C. Gabriel, J.S. Saluja, M. Darke, R. Moosa and K. Mueller, Petroleum Development Oman

**12341 Maximising Asset Value via Cooperative Efforts between NOC, IOC and Service Providers**  
 M.B. Abd Aziz and R. Gunarto, PETRONAS

**12486 Inflow Control Device an Innovative Completion Solution from “Extended Wellbore to Extended Well Life Cycle”**  
 S.A. Al Arfi, A.A. Keshka, S. Al-Bakr, A. Amiri, A.Y. El-Barbary and S. El Abd Salem, Abu Dhabi Co. Onshore Oil Operation; M. Elasmr and O.Y. Mohamed, Baker Oil Tools

**12377 Plant Integrity and Reliability are the Keys to Improving Profitability**  
 S.D. Kapusta and J. Reynolds, Shell Global Solutions (US), Inc.

**ALTERNATES/POSTERS**

**12326 Data, Information and Digital Security**  
 J. Bowler, Shell

**12188 St. Joseph Waterflood Project: Fracture Injection Modelling Using Smart Well Technology**  
 D. Harris, N.G. du Rieu and K.I. Rollett, Sarawak Shell Bhd.

**12789 The Supplier-Operator Relationship - Step Changes for Value Creation**  
 S.J. Frost, Repsol YPF

**12901 From Vision to Reality - Delivery of Smart Fields in Asia Pacific**  
 Y. Quillien, Shell E&P Co.

**12375 Energy Security and Diversity - The Role of a Technology Strategy for an Integrated Oil Company**  
 J.L. Bravo, Shell Research B.V.

**114186 Underbalanced Drilling: Remedy for Formation Damage, Lost-Circulation, and Other Related Conventional-Drilling Problems**  
 M.A. Rafique, U. of Engrg. & Technology Lahor

## Poster Session

1000-1730 hours, Wednesday, 3 December

0900-1900 hours, Thursday, 4 December

0900-1630 hours, Friday, 5 December

Conference Halls 2-3

Posters will be on display throughout the conference. Poster authors will make informal presentations on **Wednesday afternoon, 3 December, from 1515-1615 hours** and during the **Poster Session Reception at 1730-1900 hours on Thursday, 4 December**. Conference delegates are encouraged to visit the Poster Presentations to meet authors in an informal and interactive environment to discuss various technical issues.

In addition to the poster presentations listed in each session, the following papers will be displayed as posters:

### EXPLORATION

**11957 Multi-Attribute Based Seismic Facies Analysis and Classification for One of the Iranian Offshore Oil Fields**  
M. Riahi, U. of Tehran; E. Jokar, Petroleum U. of Techno; M. Rahimi, Exploration Directorate

**11971 Characterisation of Fracture Dynamic Parameters to Simulate Naturally Fractured Reservoirs**  
H. Bahrami, Sharif U. of Technology; A. Nasiri, Tehran Energy Consultants; J. Siavoshi, Husky Energy Inc; H. Parvizi, Well Services of Iran; S. Esmaili and M.H. Karimi, POGC

**12002 Methodology For Exploratory Offshore Wells Design and Construction, Plataform Deltana - Venezuela Case Study**  
N. Lugo, Petroleos de Venezuela S.A.

**12027 Exploratory Well Hits Target Successfully on the 8th Attempts in Binak Oilfield at the North of Persian Gulf**  
M. Fazaelizadeh and G. Hareland, U. of Calgary; Y. Yousafi, NIOC Exploration Directorate; S. Mirhaj, Petroleum U. of Tech Iran

**12070 Origins and Deep-Water Exploration Potential of Natural Gases in the Offshore South China Sea**  
B. Huang and D. Cai, CNOOC Ltd.

**12116 Express-Technology for Direct Searching and Prospecting of Hydrocarbon Accumulation by Geoelectric Methods**  
N.A. Yakymchuk and S.P. Levashou, Inst. of Applied Problems of Ecology; I.N. Korchagin, Inst. of Geophysics of NASU

**12124 Improving the Detection and Analysis of Seafloor Macro-Seeps: An Example from the Marco Polo Field, Gulf of Mexico, USA**  
H. Dembicki, Anadarko Petroleum Corp.; B. Samuel, C & C Technologies, Inc.

**12370 Integrated Fracture Evaluation of a Malaysian Basement Well Drilled with Oil-based Mud**  
E. Malim, S. Daungkaew, S.M. Hansen, L. Lim, R. Hussain and T. Aung, Schlumberger; S. Kurniawan and Z.A. Zulkefli, PETRONAS Carigali Sdn. Bhd.

**12526 Risk Based Decision Support for the Planning of a Challenging HPHT Drilling Operation**  
T. Nilsen and H.C. Karlsen, StatoilHydro

**12669 Critically-Stressed Fracture Analysis Contributes to Determining the Optimal Drilling Trajectory in Naturally Fractured Reservoirs**  
J.A. Franquet, Baker Hughes Inc; S. Krisadasima, Hoan Vu JOC; D. Pantic and A.A. Bal, Baker Hughes

**12753 Horizontal Wells with Finite-Conductivity Longitudinal or Transverse Fractures and their Applications in Tight Sand and Shale Reservoirs**  
E. Ozkan, N.M. Al-Aimi and H. Kazemi, Colorado School of Mines

**12853 Neural Network of 3D Seismic Attributes - An Investigation Methodology of Gas Chimneys in Dorra Field, Middle East**  
K.K. Chakraborty, M. Al-Hajeri and B. Kumar, Kuwait Gulf Oil Co.

**12865 Real Time Downhole Monitoring and Logging Reduce Mud Loss Drastically for High-Pressure Gas Wells in Tarim Basin, China**  
S. Wang, C. Zheng, Y. Jiang and B. Wu, Schlumberger; X. Zheng and J. Tang, PetroChina; H. Fan, China U. of Petroleum-Beijing

**12887 Comparison of Petrophysical Rock Types from Core and Well Logs Using Post Stack 3D Seismic Data: Field Example**  
F.J. Cheng and D. Contreras, Petroleos de Venezuela S.A.

**12918 Finding Bypassed or Overlooked Pay Zones Using Geochemistry Techniques**  
A. Maende, Geochemical Services; D. Jarvie, Worldwide Geochemistry LLC

### RESERVOIR

**11836 Prediction of Effective Porosity Over the Field Using 3D Seismic Multiattributes and Acoustic Impedance Resulted from LP Spars Spike Inversion Method**  
A. Arianfar, Shahrood, U. of Technology

**11863 A Novel Method to Construct Capillary Pressure Curves by Using NMR Log Data and Its Application in Reservoir Evaluation**  
L. Xiao and Y. Yuan, Xian Shiyou U.; Z. Chen, China Natl. Offshore Oil Corp.

## Poster Session

- 11958** **Diagnosis of Excessive Water Production in Horizontal Wells Using WOR Plots**  
M.A. Al Hasani, Petroleum Development Oman; S.R. Al Khayari, R. Al Maamari and M.A. Al Wadhahi, Sultan Qaboos U.
- 
- 11978** **Navigating the Fog of Reservoir Uncertainties to Decision Makings with Advanced Mathematical Models in New Field Development**  
T.R. Pham, F.A. Al-Ajmi and M.A. Al-Shehab, Saudi Aramco
- 
- 12015** **Concept of Classified Polymer Flooding Control Extent and Influences on Flooding Effect**  
Z. Shao, X. Zhang, X. Li, L. Wu and J. Meng, Daqing Oilfield Ltd. Co.
- 
- 12019** **A State of the Art Permeability Modeling Using Fuzzy Logic in a Heterogeneous Carbonate (An Iranian Carbonate Reservoir Case Study)**  
M. Roostaeian, M. Ghafoori and V.A. Sajjadian, Natl. Iranian Oil Co.
- 
- 12080** **Integrated Modeling of Fractured Low Permeability Reservoir, Shangonghe Formation, Baolang Oilfield, Northwest China**  
F. Zhou, G. Yao, G. Wang, O.O. David and Q. Yang, China U. of Geosciences
- 
- 12115** **A Compositional Wellbore/Reservoir Simulator to Model Multiphase Flow and Temperature Distribution**  
P. Pourafshary, U. of Tehran; K. Sepehrnoori, A. Varavei and A.L. Podio, U. of Texas at Austin
- 
- 12165** **Integrated Modeling and Statistical Analysis of 3-D Fracture Network of the Midale Field**  
T. Babadagli and D.S. Bogatkov, U. of Alberta
- 
- 12181** **Constraining 2-D Maps to 3-D Reservoir Descriptions - Field Study**  
M.G. Kelkar, U. of Tulsa; U. Borisovich and A.G. Petrov, Rosneft; H. Ates, Kelkar & Assocs. Inc.
- 
- 12251** **A Review on Geomechanical Properties Modeling for Numerical and Analytical Analyses**  
E.S. Raggio Santos, K. Lobato and F.H. Ferreira, PETROBRAS
- 
- 12295** **Permeability Determination Using CMR Log and Core Analysis in the Kangan Formation, South Pars Gas Field, Persian Gulf, Iran**  
S. Zarei, Azad U.; B. Movahed, Pars Oil & Gas Co.
- 
- 12304** **Numerical Simulation of CO<sub>2</sub> Storage in Aquifers Without Trapping Structures**  
K. Akaku, JAPEX Research Center
- 
- 12307** **Correction of Induction and Laterolog Charts for Evaluation of Gas Reservoirs**  
A. Shahbazi, Natl. Iranian Drilling Co. and K. Shahbazi, U. of Technology, Iran
- 
- 12332** **Effect of Mud Clasts on Stochastic Permeability Modelling for Steam Assisted Gravity Drainage (SAGD) Production Forecasting in the Athabasca Oil Sands, Canada**  
K. Kashihara and K. Hosokoshi, Japan Petroleum Exploration
- 
- 12333** **Oil Sands Reservoir Monitoring Using Time-lapse 3D Seismic in Canada**  
T. Nakayama and A. Takahashi, JAPEX; L. Skinner, JACOS; A. Kato, Japan Oil, Gas and Metals Natl. Corp.
- 
- 12398** **SVS Fracture Solutions: Complex Fractured Reservoir Modeling**  
L. Bazalgette, Shell; P.D. Richard and K. Rawnsley, Petroleum Development Oman
- 
- 12401** **Representative Reservoir Fluid Sampling: Challenges, Issues and Solutions**  
C. Smith, J.J. Lawrence, D.M. Chorneyko and N.R. Nagarajan, ExxonMobil Upstream Research Co.
- 
- 12412** **Model Updating and Optimum Control for Water Coning: An Application of Ensemble Kalman Filter**  
C.A. Mantilla, S. Srinivasan and Q.P. Nguyen, U. of Texas at Austin
- 
- 12444** **Integrated Reservoir Petrophysical Characterisation and 3D Modeling: A Nigerian Deep-Water Turbidite Reservoir Case Study**  
L. Ruvo and S. Tommi, Eni Agip SpA; M. Calderoni, M. Cesaro, F. Fomesu, I. Franco and A. Lyne, Eni E&P
- 
- 12482** **Water-Out Characteristics and Remaining Oil Distribution Pattern of Different Types of Channel Sands in Lasaxing Oilfield**  
L. Zhu, Q. Du, L. Wei, J. Guo, S. Yin and X. Song, Daqing Oilfield Co. Ltd.; Q. Du, Daqing Research Inst.
- 
- 12544** **Can One Size Fit All? A Comprehensive Solution for Fault Modeling**  
K.S. Hoffman, J.W. Neave and E. Nilsen, Roxar, Inc.
- 
- 12550** **Reservoir Simulation Model Updates via Automatic History Matching with Integration of Seismic Impedance Change and Production Data**  
Y. Dong, Shell Intl E&P; D.S. Oliver, U. of Oklahoma
- 
- 12556** **Injection of Water Above Gas for Improved Sweep in Gas IOR: Performance in 3D**  
W.R. Rossen and L. Van Der Bol, Delft U. of Technology; M. Jamshidnezhad, Natl. Iranian South Oil. Co
- 
- 12726** **An Extensive Review on Coupled Models for Stress-Strain and Time Dependency of Chalk**  
B. Zangiabadi, R.I. Korsnes, E. Omdal, K.N. Vorland and M.V. Madland, U. of Stavanger; T.G. Kristiansen, BP Norge AS; A. Hiorth, IRIS LLC

## Poster Session

- 12729 Direct Modeling of Reservoirs through Forward Process-Based Models: Can We Get There?**  
J.K. Miller, C. Genty, H.Li, J. Stewart, D. LI, C. Lyttle and T. Sun, ExxonMobil Upstream Research Co.
- 
- 12777 Applied Research Work on Density Log Responses in Thinly Laminated Bedded Sediments is Leading to a Better Understanding of Reservoir and Well Performance in West Africa**  
E.J. Stockhausen, Chevron ETC; P. Condon, Chevron Intl. E&P
- 
- 12787 Smart Formation Testing - A Reliable Approach to Evaluate Reservoir Compartmentalisation and Fluid Gradients**  
U. Hahne, K. Ng, L. Zhou, M. Lallemand and J. Pragt, INTEQ
- 
- 12849 Comparison of Conventional Log Interpretation with Neutron Capture Spectroscopy Log and X-Ray Diffraction Laboratory Analysis: a Case Study**  
A. Kristianto, Y. Jong and L.L. Moinard, Total E&P Indonesia
- 
- 12877 Static Connectivity and Heterogeneity (SCH) and Dynamic Uncertainty Estimation**  
H. Tang and N. Liu, Chevron
- 
- 115822 Using the Continuous NMR Fluid Properties Scan to Optimise Sampling with Wireline Formation Testers**  
P.J. Weinheber, C.C. Minh, W.R. Wichers and A. Gisolf, Schlumberger; E. Caroli, F. Jaffuel and Y. Prorier, Total; D. Baldini, M. Sitta and L. Tealdi, ENI
- 
- 115825 Best Practices for Formation Testing in Low Permeability Reservoirs**  
P.J. Weinheber, E.C. Boratko, A Gisolf, M.A. Rueda and E. Dussan, Schlumberger; K.D. Contreiras and F. Van-Dunem, Sonangol P&P; R.L. Spaeth, Marathon

### DEVELOPMENT AND PRODUCTION

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- 12407 A New Approach for Optimizing Cement Design to Eliminate Mircoannulus in Steam Injection Wells**  
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## Poster Session Reception

Thursday, 4 December • 1730-1900 hours  
Conference Halls 2-3

Hors-d'oeuvres and drinks will be served in a relaxed business/social atmosphere and complemented with Malaysian Cultural and traditional displays and demonstrations.

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