SPE Symposium: Production Enhancement and Cost Optimisation

7 – 8 November 2017 | DoubleTree by Hilton Kuala Lumpur, Malaysia

EVENT PREVIEW
MESSAGE FROM SYMPOSIUM CO-CHAIRS

Dear Colleagues,

The inaugural SPE Symposium: Production Enhancement and Cost Optimisation, held from 7 – 8 November 2017 in Kuala Lumpur, Malaysia, aims to provide a timely platform for knowledge transfer, innovation and sharing of best practices in oil and gas production as we continue to evolve towards a sustainable model of enhanced operations and cost optimisation.

Enhancing production operations calls for an integrated approach across multidisciplinary teams that is beyond the traditional concept of collaboration but a collaboration with the intent to elevate the performance of the collective whole, the end-to-end value chain. With the proliferation of digital technology, this is an opportune time to ride on the digitisation wave to deliver critical improvements in productivity, efficiency and cost management across this value chain.

In response to this, the symposium will feature more than 60 technical presentations highlighting technical know-hows, innovative methodologies, and practical case studies on the following core topics:

- Artificial Lift
- Reservoir Studies and Surveillance
- Digital/Production Optimisation
- Well Intervention and Monitoring
- Flow Assurance
- Well Operations and Optimisation
- IOR/EOR
- Well Operations and Optimisation

In addition, high-level Plenary and Panel sessions will feature in-depth discussions on innovations and best practices in upstream production, how collaboration would shape the next wave of industry performance in production enhancement and cost competitiveness, digital transformation and its role in pushing the boundaries of productivity, and overcoming roadblocks to technology development and deployment in Malaysia.

We invite your participating in this event, which will provide you with practical insights from industry leaders and subject matter experts who will engage in forward-looking dialogues and share new perspectives on key drivers and challenges around production enhancement and cost optimisation.

We look forward to your support and commitment in making this symposium a success.

Yours sincerely,

Bacho Pilong
Symposium Co-Chair
Vice President, International Assets,
Development and Production,
PETRONAS

Choong Yen Li
Symposium Co-Chair
General Manager,
Venture Development
Sarawak Shell Berhad

COMMITEE MEMBERS

Noorbaizura Hashim

Jeffrey L. Dwiggins
Artificial Lift Solutions Pte. Ltd.

Eddy Kamaruddin
BeicipTecsol

Anton Kaiser
Clariant Oil Services

Ken Saveth
Baker Hughes, a GE company

Sanjeev Gupta
Halliburton

Gunajit Das
Halliburton

Hiroki Iwama
INPEX

Takaaki Uetani
INPEX

Temmy Kurniawan
Pertamina

Khairina Kairul Anuar
PETRONAS Carigali Sdn. Bhd.

Khairul Nizam Idris
PETRONAS Carigali Sdn. Bhd.

Robin Kueh Jing Zhi
PETRONAS Carigali Sdn. Bhd.

Wan Afiq Farhan Che Hamat
PETRONAS Carigali Sdn. Bhd.

Wan Rokiah Ismail
PETRONAS Carigali Sdn. Bhd.

Pauziyah Abdul Hamid
PETRONAS Research Sdn. Bhd.

Andy Baker
Schlumberger

Gordon Goh
Schlumberger

Jeroen Groenenboom
Shell

Murat Kilic
Shell

Jacques Kieffer
SNF SAS

Tore Blaker
Statoil ASA

Vitaly S. Chernikov
Weatherford Asia Pacific

Michael Potts
Weatherford Asia Pacific
# SCHEDULE OF EVENTS

## MONDAY, 6 NOVEMBER

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<tr>
<th>Time</th>
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<tr>
<td>1200-1730 hrs</td>
<td>Registration</td>
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<td>1200-1730 hrs</td>
<td>Speaker/Author Check-In</td>
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## TUESDAY, 7 NOVEMBER

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<td>1100-1230 hrs</td>
<td>Panel Session 1: Synergy in Action: Industry Collaboration</td>
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<td>1200-1400 hrs</td>
<td>Networking Luncheon</td>
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<td>Technical Session 1: IOR/EOR</td>
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<td>Technical Session 2: Artificial Lift</td>
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<td>Technical Session 3: Well Operations and Optimisation 1</td>
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<td>Technical Session 4: Reservoir Studies and Surveillance</td>
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<td>Technical Session 5: Well Intervention and Monitoring</td>
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**OPENING & EXECUTIVE PLENARY SESSION**

**Production Enhancement and Cost Optimisation**
Tuesday, 7 November • 0900 – 1030 hours • Ballroom B

Welcome Remarks and Session Chairperson:
- Bacho Pilong, Symposium Co-Chairperson and Vice President, International Assets, Development and Production, Upstream, PETRONAS

Plenary Speakers:
- Aravindh Kaniappan, Oilfield Services Lead, Southeast Asia, Baker Hughes, a GE company
- Melanie Cook, Senior General Manager, Production, ExxonMobil Exploration and Production Malaysia Inc.
- Anuar Ismail, Head, Sarawak Oil-Malaysian Assets, Development and Production, Upstream, PETRONAS Carigali Sdn Bhd
- Simon Durkin, Vice President, Upstream Operated Malaysia and Philippines, Sarawak Shell Malaysia / Sabah Shell Petroleum Co. Ltd.
- Azhar Abdullah, Managing Director, Schlumberger Malaysia
- Keith Collins, Chief Executive Officer, Vestigo Petroleum

Enhancing production operations calls for an integrated approach across multidisciplinary teams that is beyond the traditional concept of collaboration but a collaboration with the intent to elevate the performance of the collective whole, the end-to-end value chain.

As the industry continues to strive towards operational excellence amidst soft but stabilising market sentiments and oncoming wave of digitisation, we will require more advanced technologies and a nimbler way of working to deliver improvements in productivity, efficiency and cost management across a value chain that includes production enhancement, flow assurance, logistics, asset monitoring and HSE.

This session will discuss current and emerging production best practices, technology and innovation trends, and evolving market demands and viewpoints. It will also examine how these factors will impact oilfield operations going forward such as:
- Key production enhancing technologies and innovations to look out for
- Increasing speed-to-market and pace in monetisation
- Digitisation and automation of oilfield operations

**PANEL SESSION 1**

**Synergy in Action: Industry Collaboration towards Sustainable Efficiency and Cost Optimisation**
Tuesday, 7 November • 1100 – 1230 hours • Ballroom B

Session Chairperson:
- Eddy Kamaruddin, Partner, Geosciences, BeicipTecsol

Panel Speakers:
- Abdul Malek Ismail, General Manager, Subsurface Engineering, ExxonMobil Exploration and Production Malaysia Inc.
- Megat Zariman Abdul Rahim, Vice President, Commercial Offshore Marine Services, Bumi Armada Bhd
- Hajejah Ali, Head of Coral 2.0, PETRONAS

Achieving cost reduction may only be a short term gain if it is solely a cost management exercise. To create a sustainable model of enhanced operations and cost optimisation, we need fundamental process changes that are built upon mutually beneficial partnerships between stakeholders.

While we can leverage technology for new or improved ways of doing things, we still need to collaboratively implement and integrate technology with industry best practices.

This session will focus on strategies around industry collaborations to develop permanent production improvements with sustainable cost structures:
- Leveraging industry-wide collaborations to drive production enhancement in the oil and gas ecosystem
- Long-term vs. short-term value creation
- Cost optimisation across the E&P value chain
- Operator-supplier partnerships – improving information exchange
- Emphasis on joint planning and accountability
PANEL SESSION 2

Digital Transformation Journey: People, Technology and Strategy

Wednesday, 8 November • 0900-1030 hours • Ballroom B

Session Chairperson:
• Kevin Chong, Business Chief Information Officer, PETRONAS

Panel Speakers:
• Arnold Volkenborn, Managing Director and APAC Lead, Accenture Strategy Energy
• David Parkinson, Director of Architect Solutions, Baker Hughes, a GE company
• Hamidah Hassan, General Manager of Information Technology, ExxonMobil Exploration & Production Malaysia Inc.
• Trygve Randen, Eastern Hemisphere Director, Schlumberger Software Integrated Solutions

Currently, most of the digital initiatives in oil and gas have been incremental rather than disruptive in nature. Although no stranger to data analytics, the industry has yet to reap the full rewards of digitisation by being able to derive actionable decisions and formulate plans based on data.

Digitisation opens up the gateway to numerous possibilities in production and operations such as real-time data analysis, remote operations, and predictive maintenance and condition monitoring. This translates into enhanced operations and sizeable cost savings. Hence, it is essential that we strategically embrace digitisation in our operations to maximise its potential.

This session will focus on strategies around the workforce and technology implementation to boost the pace of digitisation:
• Digitisation of oil and gas operations and implications on workforce competency
• Entry of millennials, touted as the most digitally connected generation, into the workforce and how will this accelerates the adoption of digital technology
• Lessons from other industries in deploying digital technologies
• Justifying ROI of aging assets vs. cost of digitisation

PANEL SESSION 3

Technology Development and Deployment in Malaysia: Addressing the Challenges Faced by the Oil and Gas Industry, Now and in the Future

Wednesday, 8 November • 1400-1530 hours • Ballroom B

Session Chairperson:
• Michael C. Poppelreiter, Shell Chair of Petroleum Geoscience, Sarawak Shell Berhad

Panel Speakers:
• Mohammad Azmel Harun Rasheed, Vice President of innovation & Technology, Malaysia Petroleum Resources Corporation
• Mohd Shahir Liew, Deputy Vice Chancellor of Research and Innovation, Universiti Teknologi PETRONAS
• Nasir B. Darman, Head of Group Research and Technology, PETRONAS Research Sdn Bhd
• Max Prins, Global Technology Manager, Shell International

Current R&D efforts in the industry and academic world are significant but can be quite fragmented. This can lead to suboptimal technological developments with delayed deployment or, in some cases, termination before pilot trials. Ultimately, this will undermine the full impact that technology can deliver as an enabler of industry advancement.

Collaboration through partnership between industry and universities can create a platform for tailored technology development to address critical challenges in the industry with practical deployment opportunities. Hence, a strategy for R&D collaboration is important to ensure continuous technology development and deployment.

This session will focus on strategies around technology development through collaboration and early deployment of technology to be ready for the future:
• Challenges that the industry faces now and in the future
• What kind of R&D could address these challenges?
• Drive for collaboration, i.e. joining forces to combine the best of R&D capabilities
• Automation/robotics – linked to HSSE and field-of-the-future
• Utilisation of contaminated gas by-products
## SYMPOSIUM PROGRAMME SCHEDULE

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<th>Date</th>
<th>Time</th>
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<td><strong>Technical Session 7</strong> Well Operations and Optimisation II</td>
<td><strong>Technical Session 8</strong> Flow Assurance</td>
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### TECHNICAL PROGRAMME

Updated as at 26 July 2017

#### Tuesday, 7 November ● 1400 – 1530 hours
**TECHNICAL SESSION 1: IOR/EOR**

**Ballroom B**

**Session Chairpersons:**
Anton Kaiser, Clariant Oil Services  
Jeroen Groenenboom, Shell

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<th>Time</th>
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<th>Authors</th>
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<tr>
<td>1400</td>
<td>189203</td>
<td>Wettability Alteration of Carbonate Rocks via Nano Flooding at Reservoirs Conditions</td>
<td>S. Al-Anssari, Curtin U.</td>
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<td>1420</td>
<td>189247</td>
<td>Economic Advantages of a New Polymerflooding Technology for Mature Oilfields in Low Oil Price Period - 8 Cases Study</td>
<td>X. Wu, Research Inst. Petroleum Exploration &amp; Development</td>
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<tr>
<td>1500</td>
<td>189238</td>
<td>Improving Sweep Efficiency by Zonal Isolation Using High Expansion Ratio Inflatable Plugs: A Case Study</td>
<td>A. Goyal, M. Varshney, S. Kadam, N. Pandey and S. Vermani, Cairn India Ltd.; V. Gupta, Baker Hughes, a GE company</td>
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#### Tuesday, 7 November ● 1600 – 1730 hours

**TECHNICAL SESSION 2: ARTIFICIAL LIFT**

**Hibiscus Room**

**Session Chairpersons:**
Vitaly S. Chernikov, Weatherford Asia Pacific

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<tr>
<td>1600</td>
<td>189213</td>
<td>The 7 Sins of Managing Acoustic Sand Monitoring Systems</td>
<td>P. Lee and K. Frederiksen, DONG Energy</td>
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<td>1700</td>
<td>189241</td>
<td>Dual-Horizontal Wells SAGD Start-Up Technology: From Conventional Steam Circulation to Rapid and Uniform Electric Heating Technology</td>
<td>C. Xi, PetroChina Co. Ltd.; Z. Qi and X. Li, RIPED; W. Han, China U. of Petroleum(Beijing); H. Wang, Y. Jiang and L. Shi, RIPED</td>
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#### Tuesday, 7 November ● 1600 – 1730 hours

**TECHNICAL SESSION 3: WELL OPERATIONS AND OPTIMISATION I**

**Ballroom B**

**Session Chairpersons:**
Robin Kueh Jing Zhi, PETRONAS Carigali Sdn. Bhd.  
Murat Kilic, Shell

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<tr>
<td>1600</td>
<td>189199</td>
<td>A Novel Integrated Numerical Simulation Scheme of Transient Gas Flow in Shale Matrix</td>
<td>J. Zhan, U. of Calgary</td>
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<td>1620</td>
<td>189258</td>
<td>Carbonate Reservoir Waterflood Efficiency Monitoring with Cross-Well Pulse-Code Testing</td>
<td>R. Farakhova, Sopi; A. Aslanyan, LLC; N. Makheshev, KazakhOilAkte; V. Krichevsky, Sopioli</td>
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<td>1640</td>
<td>189242</td>
<td>Evaluation of Reservoir Cooling Impact on WAG Performance for Mature Waterflooded Malaysian Oil Field</td>
<td>W.A. Wan Razak, L. Belazreg, Z.Z. Abdullah, A. Awg Sapawi and M. Abd Raub, PETRONAS</td>
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#### Tuesday, 7 November ● 1600 – 1730 hours

**TECHNICAL SESSION 4: RESERVOIR STUDIES AND SURVEILLANCE**

**Hibiscus Room**

**Session Chairpersons:**
Gunajit Das, Halliburton  
Andy Baker, Schlumberger

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### Wednesday, 8 November • 1100 – 1230 hours

**TECHNICAL SESSION 5: WELL INTERVENTION AND MONITORING**

**Ballroom B**

**Session Chairperson:**
Andy Baker, Schlumberger

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<td>1100</td>
<td>189248</td>
<td>First Removal of Manganese Tetraoxide Water-Based Mud Cake in High Pressure High Temperature (HPHT) Wells with H2S and CO2 Environment Using Acetic Acid Conveyed with Coiled Tubing</td>
<td>L. Chendrika, I.M. Purwitaningtyas and M. Fuad, Schlumberger; M.O. Etuhoko, S. Nurdin, L. Jihong and B. Rusli, Husky-Cnooc Madura Ltd.</td>
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<td>1140</td>
<td>189237</td>
<td>Longevity of Chemical Sand Control - What Should You Expect?</td>
<td>P. Singh, Lubrizol Oilfield Solutions</td>
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### Wednesday, 8 November • 1600 – 1730 hours

**TECHNICAL SESSION 7: WELL OPERATIONS AND OPTIMISATION II**

**Ballroom B**

**Session Chairpersons:**
Robin Kueh Jing Zhi, PETRONAS Carigali Sdn. Bhd.
Murat Kilic, Shell

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<td>1700</td>
<td>189271</td>
<td>World Record: Deepwater Well Drilled and Completed in 20.9days, a Case History</td>
<td>M. Maulana, Total E&amp;P Indonesie</td>
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### Wednesday, 8 November • 1600 – 1730 hours

**TECHNICAL SESSION 8: FLOW ASSURANCE**

**Hibiscus Room**

**Session Chairpersons:**
Takaaki Uetani, INPEX

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<tr>
<td>1600</td>
<td>189221</td>
<td>Solving Unexpected Sanding Issues in HP/HT, Tight-Sandstone Keshen Gas Reservoir, Western China</td>
<td>K. Qiu, Schlumberger</td>
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<td>1620</td>
<td>189218</td>
<td>The Impact of Field Measurements, Data Handling Procedures and Software Selection on Carbonate and Sulphide Scale Predictions</td>
<td>G. Verri and K.S. Sorbie, Heriot-Watt U.</td>
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Papers

189194 Corrosion Assessment of Well Completions, a Crucial Step into Preserving Life Cycle of Wells
O. Alaref, Gowell Int'l Llc.
(Alternate Paper in Technical Session 5)

189196 Viscoelastic Properties and Gelation Behavior of Waxy Crudes and Condensates from Eagle Ford: New Insights into Wax Formation and Mitigation for Shale Oils
A. Mahmoudkhan, Clariant Oil Services Ltd; R. Smith, A. Miller, M. Feustel, A. Youssef and J. Wylde, Clariant

189198 Innovative Production Optimisation Technique for Smart Well Completions Using Real-Time Nodal Analysis Applications
A.M. Al Anazi, Saudi Aramco SAOO; O. Isichei, Saudi Aramco PE&D; M. Alyahya, Saudi Aramco SAOO; F.M. Al-shammeri, Saudi Aramco PE&D
(Alternate Paper in Technical Session 3)

189200 Research and Application of Electric Power Curve Inverting Dynamometer Diagram Technology Using Big Data Approach
X. Zhuang, RIPED CNPC; D. Sun, Jilin Oilfield CNPC; J. Shi and R. Zhao, RIPED CNPC; Y. Han, Jilin Oilfield CNPC; Y. Peng, RIPED CNPC

189204 Optimising the Process of 24/7 Real-Time Electrical Submersible Pump Surveillance in Kuwait: Limitations, Lessons Learned and Way Forward
A.M. Al-Jazzaf, Kuwait Oil Co.
(Alternate Paper in Technical Session 2)

189205 Automated Decline Curve Analysis for Unconventional Reservoirs Based on Machine Learning: A Field Case Study
Y. Li, Texas A&M U.; Y. Han, U. of Oklahoma
(Alternate Paper in Technical Session 4)

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J.H. Alzate Buitrago, C.Y. Vargas Cardenas, Weatherford; A. Agurto Saldana and G.A. Russo, Savia Peru S A
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189208 Value of Portable High Frequency Multiphase Flow Meter Testing for Brownfield Well Production Optimisation and Maximising Reservoir Performance - A Case Study of Offshore Brownfield in Peninsular Malaysia
K.T. Wee, Invigour Energy; M. Mahfar, M.S. Abd Rahman and Z. Mainuir, EnQuest Petroleum Malaysia

189209 Reservoir Study for Shale Gas Horizontal Casing Completion Multi-Stage Frac Using Gas Tracer Technology
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(Alternate Paper in Technical Session 6)

189210 An Intelligent Optimisation Technique of Beam Pumping Unit with Flexible Control System
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(Alternate Paper in Technical Session 6)

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A.A. Umar, I.M. Saaid, U. Teknologi PETRONAS; A.A. Sulaimon, U. of Ibadan; R. Pilus, U. Teknologi PETRONAS; A. Saidu Mohamed, Delem Petroleum
(Alternate Paper in Technical Session 8)

189223 Production and Cost Optimisation in a Complex Onshore Operation Using Integrated Production Model
A. Hidayat, N.F. Prakoso, PT Medco E&P Indonesia; Y. Yulywanto and A. Suaji, Medco E&P Indonesia

189224 Breaking Produced Emulsions of an Alkaline Surfactant Polymer Flood
A. White and A. Kaiser, Clariant Oil Services
(Alternate Paper in Technical Session 1)

189226 Successful Evaluation of the Slimmest Formation Sampling Tool in Geologically Complex Development Wells
V.T. Pinprayong, D.F. Chantipna, C. Villamizar and I. Baca Espinoza, Weatherford Ltd.; H.Q. Ngo and E. Meenak, PTTEP
(Alternate Paper in Technical Session 5)

189227 Cost-Optimised Exploration Drilling, Offshore South West Java: Recipe of a Successful "Jack Up" Switch
(Alternate Paper in Technical Session 7)

189230 Applying Edge Computing to Autonomous Well Control
J.L. Pitcher and M.J. Pry, Safoco Inc.
(Alternate Paper in Technical Session 3)

189232 Collaborative Engineering Results in Application-Specific Hybrid Bit that Achieves Record Performance and Reduced Days to Production in Sichuan Basin
L. Zhang, F.G. Valbuena and J. Zeng, Baker Hughes, a GE company; D. Wu and J. Liu, CCDC East; M. He and H. Li, CCDC West
(Alternate Paper in Technical Session 7)

189233 Successful Integrated Reservoir Management Leads to Doubling of Production: A Case Study of Upper Burgan Reservoir, Raudhatain Field, Kuwait
S.K. Chellappan and N. Alhajeri, Kuwait Oil Co.
(Alternate Paper in Technical Session 6)

189234 Near Wellbore Characterization from Temperature Transient Analysis: Accounting for Non-Darcy Flow Effect
Y. Mao and M. Zeidouni, Louisiana State U.
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1. Online at www.spe.org/go/18sm01.
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3. Fax or mail the completed Registration Form to the SPE Asia Pacific office.
4. Register onsite at the Symposium Registration Counter, Level 10, DoubleTree by Hilton Kuala Lumpur, on the following days:
   • Monday, 6 November 2017 | 1200 hours – 1730 hours
   • Tuesday, 7 November 2017 | 0730 hours – 1730 hours
   • Wednesday, 8 November 2017 | 0730 hours – 1730 hours

PACKAGES AND FEES

Register by 22 September 2017 to take advantage of the Early Bird offer.

Individual Registration

<table>
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<th>Room Type</th>
<th>Early Bird Registration BY 22 September</th>
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<td>Presenter/Author/Panellist/Committee/Session Chairperson</td>
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Group Registration: Register for 5 people and pay for the price of 4

Full Symposium Registration: Admission to opening, executive plenary, panel, technical and ePoster sessions, technical showcase, welcome reception, daily luncheons, daily coffee breaks, and a copy of the Digital Proceedings.

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DoubleTree by Hilton Kuala Lumpur is conveniently located in the heart of the Malaysian capital city and connected to The Intermark office and shopping development, this Kuala Lumpur hotel is within a 10-minute walk of Petronas Twin Towers and Kuala Lumpur Convention Center. Ampang Park LRT metro station is only 5 minutes via covered walkway.

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Website: www.KL.DoubleTreebyHilton.com

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<th>Room Type</th>
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<td>Deluxe Room</td>
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