**SPE Reservoir Surveillance & Production Enhancement through Cost Effective Technology Integration and Operation Efficiency Workshop**  
10 – 13 October 2016 | Kuala Lumpur, Malaysia

To find out more about group registrations, please contact us at spekl@spe.org

**Who Should Attend**
Professionals in / interested in:
- Engineering Advisors
- Reservoir Management Specialists
- Asset Managers
- Production Technologists
- Technical Managers
- Business Development Managers
- Product Line Managers
- Reservoir Engineers
- Production Engineers
- Development Engineers
- Geoscientists

**Session Highlights**
The aim of this workshop is to bring together industry professionals with a focus on technologies, reservoir surveillance, enhancement and value through application of:
- Case studies with demonstrated value
- Production optimisation and well productivity enhancement
- Importance of surveillance and enhancement in low oil price environment - what works?
- Innovative ways to enhance production
- Cost-effective reservoir surveillance technology
- Maximising techno-economic recovery
- Technology development - what’s in the pipeline?
- Fit-for-purpose surveillance
- Idle wells recovery - unlocking potentials
- Field data management - are we doing all we can with the data?
- Visualisation and analysis - subsurface insight

This workshop will provide a means for operators, subsurface professionals and managers, and service companies to share their current experiences, as well as discuss current production surveillance and enhancement technologies. **Permanent monitoring, intervention surveillance, conformance and remedial chemical treatments, combined technology initiatives and retrofit technologies** are just some of the areas where surveillance is contributing to the understanding of the reservoir and enhancing recovery for the full lifecycle of the field.

**Post-Workshop Training Course:**
Mature Field – Reservoir Surveillance and Production Enhancement  
12 – 13 October 2016 • Kuala Lumpur, Malaysia
The goal of this workshop is to provide a platform for interactive presentations and engaging discussions regarding the current and perceived future applications of reservoir surveillance and enhancement technologies that can provide economic value through application in a low oil price environment.

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Preliminary Daily Activities and Technical Agenda

**MONDAY, 10 OCTOBER 2016**

0745 – 0845  Discussion Leaders and Session Managers Briefing
0800 – 0850  Arrival of Delegates and Registration
0850 – 0900  Safety Announcement by Hotel
0900 – 0930  Welcome and Introduction by Workshop Co-Chairpersons
0930 – 1000  Session 1: Keynote Address
1000 – 1030  Group Photo / Coffee and Tea Break
1030 – 1230  Session 2: Surveillance and Enhancement Technology to Unlock Production Potentials
             Session Chairs: Ali Saadat, PETRONAS; Steve Koumouris, Resman Far East & Asia
             Multi-phase flow metering for ‘intelligent’ wells in both onshore and offshore environments has been an emerging area of interest. In the current climate of suppressed oil price, such technologies may not be utilised, so what are the alternatives for operators to control, measure and add value in downhole measurements? There are numerous downhole sensor technologies available to provide real-time direct measurements at reservoir conditions. In-well surveillance of pressure, temperature and other physical and dynamical properties are necessary to accurately monitor well performance and make informed, real-time decisions to best manage well production. This session will focus on recent advancements in multiphase flow sensors such as PLTs, distributed sensing (fibre-optic), chemical sensing and virtual flow metering. With an abundance of information about downhole conditions, there comes need to reactively and proactively manage the production from the reservoir. This cost can be effectively managed through passive, active and autonomous inflow control systems in comparison to intelligent completions. Autonomous inflow control devices are the latest iteration of ICDs that can, for example, react to changes in reservoir flow conditions to choke off gas or water without the need for human intervention. This session will therefore and control in today’s suppressed oil price environment.
SPE Luncheon
1230 – 1330  Session 3: Operational Efficiency – Balance of Surveillance and Production Optimisation
             Session Chair: Leonardo Suarez, Halliburton; Thierry Wee, TOPUP Wells Services
             The success of oil and gas companies in reaching the ultimate objective of maximising production and field recovery while fulfilling business financial objective is largely determined by the ability to achieve the highest possible level of operational efficiency. Reservoir management, well surveillance activities and production optimisation are among the important processes in the success of the operational phase of a field life. Such processes are integrated and complement each other, hence the requirement of reaching an effective balance. This session will highlight the implementation of technology applications, integrated surveillance solutions and streamlined water injection operations to demonstrate how operational efficiency can be achieved.
             Coffee and Tea Break
1330 – 1530  Session 4: Syndicate Group Exercise/Breakout Session
             Session Chair: Ali Saadat, PETRONAS; Leonardo Suarez, Halliburton
             “Operationally addressing the reservoir management plan and operational guidelines on active producing wells and idle well management”
             Today’s challenge of reduced capital investment in the oil and gas industry has pressed many operators to reframe and restructure their resources to best manage asset optimisation plans, production sustainability and growth. While managing maturing assets and capitalising on field opportunities within the current environment, operators must also be strategically and internally aligned with the various functional departments where collaboration between petroleum, reservoir, G&G and well services is
effectively managed through passive, active and production from the reservoir. This cost can be comes need to reactively and proactively manage the sensing and virtual flow metering. With an abundance PLTs, distributed sensing (fibre-optic), chemical advancements in multiphase flow sensors such as accurately monitor well performance and make physical and dynamical properties are necessary to direct measurements at reservoir conditions. In-well emerging area of interest. In the current climate of Koumouris, Session Chairs: Ali Saadat, PETRONAS; Frazer Hillis, Tendeka This poster session invites presentations to stimulate discussion in the following areas: • What we did before - field experience? • What we are doing now - current best practices and workflow processes? • What we are going to do in the future - research and technology? 1745 - 1845 Session 5: Poster Session/Networking Hour Session Chair: Ali Saadat, PETRONAS; Frazer Hillis, Tendeka 1845 onwards SPE Welcome Dinner TUESDAY, 11 OCTOBER 2016 0900 – 1100 Session 6: Integrated Field Studies Session Chairs: Eddy Kamaruddin, BeicipTecsol, Francisco Porturas; Ziebel AS Integrated field studies are an effective way for the industry to improve field management and surveillance for the production and recovery processes during the life of a field. The integration of subsurface, production, process and facilities studies, as well as economics and field maintenance models provide comprehensive field management guidelines under which subsequently improved investment decisions can be made. This session will discuss best practices and value creation through technology and integration of multi-discipline teams. 1100 – 1115 Coffee and Tea Break 1115 – 1315 Session 7: Innovation in Production Enhancement and Reservoir Surveillance Session Chairs: Goh Bee Ling, ExxonMobil E&P; Rob Harris, Shell; Thierry Wee, TOPUP Wells Services Production enhancement is a significant aspect of field management. It commonly represents the most economic barrels of incremental oil that can be unlocked through routine reservoir surveillance activities as well as identifying opportunities to maximise production and recovery. The recent downturn of oil commodity price has, by and large, shifted the budgets and types of activities in oil and gas fields. The result is a focus on well production enhancement as a more cost-effective strategy for sustaining or potentially increasing field production during this period while reducing and managing significant capital expenditure. The quest for production optimisation is ripe for technology innovation and applications in addition to improved ways of working and collaborating. As the industry tackles more challenging conditions for producing hydrocarbons from aging assets, smarter and novel ideas become ever more important as investment and operating cost must be rigorously high-graded. This session showcases examples of innovative ways to enhance production. The goal is to stimulate an effective dialogue for those interested to do more with less and work together to increase production through lower cost novel approaches. 1315 – 1415 Session 8: Production and Surveillance Data Management Session Chairs: Ali Saadat, PETRONAS; Eddy Kamaruddin, BeicipTecsol Many reservoir management plans depend on the way operators design and manage their asset production and well injection. ‘Big Data’ is clearly a growing theme within the oil and gas industry that can be applied to reservoir and surveillance data management. Managing large amounts of surveillance data from an operator’s asset is a relatively complex task due to the variety of acquired information. There is significant value and cost saving in collaboration through ‘Big Data’ management. This may be achieved by gathering field data from production wells, real-time or memory data acquisition, permanent monitoring and coupling subsurface reservoir information with surface asset management applications of data storage and management particularly of how we can make best use of that data in order to drive value through our organisations. 1415 – 1615 Coffee Break 1630 – 1700 Session 9: Workshop Summary by Co-Chairpersons Co-Chairs: Ashraf Khalil, PETRONAS Carigali Sdn. Bhd.; Kevin Wood, Halliburton Pinnacle Technologies • Best Presentation Award Announcement and Prize Giving for Syndicate Exercise • Best Poster Award Announcement and Prize Giving 1700 Workshop Concludes WEDNESDAY – THURSDAY, 12 – 13 OCTOBER 2016 0900 – 1700 Post-Workshop Training Course: • Mature Field – Reservoir Surveillance and Production Enhancement Poster Solicitation & Information All participants are encouraged to prepare a poster for the Workshop. Presentations on both research and field experience are welcomed. Posters, including unconfirmed/partial results, are to be presented at an assigned time and are open for discussion. Posters will be on display for the entire Workshop period. When preparing your poster: • Avoid commercialism. No mention of trademarks/product name • Poster size should be approximately 0.8m x 1.2m (W x H) or size A0 in portrait layout • Identify topic by title, affiliation, address, and phone number • Include a brief abstract that summarises the technology to be addressed • Make the display as self-explanatory as possible • Place the information in sequence: beginning with the main idea or problem, method used, results, etc. (Draw a plan keeping the size and number of illustrations in mind) • Keep illustrations simple by using charts, graphs, drawings, and pictures to create interest and visually explain a point • Use contrasting colours • Use large print for narrative materials. (We suggest a minimum of 24 points or 3” high letters for the title) Note that the Workshop Programme Committee will review all poster abstracts/materials prior to display, and reserves the right to refuse permission to display any poster considered to be commercial in nature. If you are interested to participate, please email your proposed topic with a short abstract (between 200-300 words) to SPE Event Coordinator, Hanna-Rose Abdul Jalil at hjalil@spe.org by 5 September 2016. The Society of Petroleum Engineers (SPE) is a not-for-profit organisation. Income from this event will be invested back into SPE to support many other Society programmes. When you attend an SPE event, you help provide even more opportunities for industry professionals to enhance their technical and professional competence. Scholarships, certification, the Distinguished Lecturer programmes, and SPE’s energy education programmes Energy4me are just a few examples of programmes that are supported by SPE.
Course Description
Mature fields account for over 70% of global oil production with significant spends to maintain production. This two-day training course will engage participants to evaluate production from mature assets and develop strategies to increase production from the asset in the short-term through immediate impact solutions and longer-term reservoir optimisation and implementation. Participants will be guided through the following topics as well as gain practical tips relevant to the practitioner. Participants will also interactively participate in a mature field production enhancement simulation.

Why You Should Attend?
This course is designed to impart mature field revitalisation knowledge from evaluating field production and reservoir pressure trend behaviour to determining production enhancement and re-development options for improving production and recovery from the field. Participants will be guided through the following topics as well as practical tips relevant to the practitioner. Participants will also interactively participate in a mature field production enhancement simulation.

Who Should Attend?
The course is designed for petroleum, production and well intervention engineers who are involved in various phases of technical and engineering studies and execution to give a new lease of life to production from mature fields.

Instructor Biography
Gunajit Das is the Reservoir Engineering Advisor – Asia Pacific with Halliburton and has accumulated extensive experience in integrated subsurface studies and reservoir management in a broad range of assets and reservoirs during his 19 years in the industry in various roles such as field petroleum engineer, operations reservoir engineer and studies reservoir engineer for both operators and consulting organisations. He is adept at both classical reservoir engineering techniques and numerical reservoir simulation for reservoir management and field development planning. He is also adept at designing and disseminating capability development programs. He is currently leading a multi-disciplinary team for an offshore FDP Study project in Indonesia. His past projects include fracture optimisation for a tight gas reservoir in India, evaluation of a heavy oil block in Venezuela, FFR/FDP study of two offshore fields in Malaysia, evaluation and monitoring of a carbonate steam injection pilot project in Bahrain, field development study for a large onshore carbonate field in UAE, evaluation of high rate withdrawal from complex multi-lateral wells in a giant offshore carbonate field in UAE, integrated IOR/EOR study for an onshore clastic field in India, full field review and field development studies of several onshore and offshore clastic fields in South-East Asia.

Learning Level
Intermediate - Advanced

Preliminary Daily Activities and Technical Agenda

WEDNESDAY, 12 OCTOBER 2016

0800 – 0900 Registration Opens and Welcome Coffee/Tea

0900 – 1030 Session 1: Introduction to Mature Fields and Field Revitalisation Simulation
This session introduces the mature field training and engages participants in a mature field revitalisation simulation.

1030 – 1045 Coffee and Tea Break

1045 – 1200 Session 2: Production Performance Analysis
During this session, integrated analysis of well and reservoir production performance will be discussed. This session will also introduce commonly used analytical methods to analyse production performance.

1200 – 1300 SPE Luncheon

1300 – 1515 Session 3: Well Testing and Reservoir Pressure Analysis
This session will focus on reservoir surveillance and reservoir pressure trends analysis through identifying reservoir drive mechanisms and discussion of different analytical tools that can be utilised to validate reservoir pressure trends. This session will also highlight how reservoir pressure data can be analysed to identify undrained zones or unswept areas of the reservoir.

1515 – 1530 Coffee and Tea Break

1530 – 1700 Session 4: Advanced Reservoir Surveillance
This session will focus on advanced reservoir surveillance techniques such as DAS, DTS, and TRACER that can provide valuable information about the reservoir’s properties and flow behaviour.

THURSDAY, 13 OCTOBER 2016

0800 – 0900 Registration Opens and Welcome Coffee/Tea

0900 – 1030 Session 1: Identifying Production Enhancement Options
This session will help classify target wells into different categories based on source of the issues, identify key inputs required to resolve the issues or open new intervals and create a plan for remediation of the identified issues or recompletion to a different interval.

1030 – 1045 Coffee and Tea Break

1045 – 1200 Session 2: Estimation of Production Potentials
This session will cover the methodology to estimate the incremental production potential from the identified remediation/recompletion plan. Various supporting data that can be used to defend and justify the production potential will also be covered.

1200 – 1300 SPE Luncheon

1300 – 1515 Session 3: Identifying Redevelopment Options
This session will focus on evaluating additional drainage points to maximise production from the reservoir.

1515 – 1530 Coffee and Tea Break

1530 – 1700 Session 4: Emerging Technologies Discussion
In the closing session, emerging technologies to maximise recovery from mature fields will be discussed.
Documentation:
- Proceedings will not be published; therefore, formal papers and handouts are not expected from speakers.
- Work in progress, new ideas, and interesting projects are sought.
- Note-taking by participants is encouraged. However, to ensure free and open discussions, no formal records will be kept.

Workshop Deliverables:
- The committee will prepare a full report containing highlights of the Workshop discussions. This report will be circulated to all attendees.
- PowerPoint presentation materials will be posted on a specific SPE URL site and made available to attendees after the Workshop. Provision of the materials by discussion leaders will signify their permission for SPE to do so.

Commercialism:
In keeping with the Workshop objectives and the SPE mission, excessive commercialism in posters or presentations will not be permitted. Company logos must be limited to the title slide and used only to indicate the affiliation of the presenter and others involved in the work.

Attendance Certificate:
All attendees will receive an attendance certificate attesting to their participation at the Workshop. This certificate will be provided in exchange for a completed Workshop Attendee Survey Form.

Continuing Education Units:
This Workshop qualifies for SPE Continuing Education Units (CEU) at the rate of 0.1 CEU per hour of the Workshop.

Transportation/Visa:
Attendees are advised to book their international / domestic airline tickets early from their country to Malaysia. All travelers to Malaysia must be in possession of passports valid for at least six (6) months with proof of onward passage, either return, or through tickets. Contact your local travel agent for information on visa requirements to Malaysia.

Dress Code:
Business Casual clothing is recommended. The Workshop atmosphere is informal.

Registration Fees:
- Registration fees include all workshop sessions, coffee breaks and luncheons.
- Registration fee does not include hotel accommodation and meal costs for additional family members. However, SPE will provide details of recommended hotels upon receipt of your registration.

Registration Policy:
- Registration fee MUST be paid in advance for attending the Workshop.
- Full fixed fee is charged regardless of the length of time registrant attends the Workshop.
- Fixed fee cannot be prorated or reduced for anyone (Workshop chairpersons, committee members, speakers, discussion leaders, students and registrants).
- Attendees are expected to attend all Workshop sessions and are not permitted to attend on a partial basis.

Attention Nonmembers
Join Our Worldwide Membership!
Nonmember registrants are eligible for one (1) year SPE Membership at no additional cost. To take advantage of this offer, you must fill out the membership application form onsite.

SPONSORSHIP SUPPORT INFORMATION
Sponsorship support of the event helps offset the cost of producing workshops and allows SPE to keep the attendance price within reach of operation-level individuals, those who benefit most from these technical workshops.

Supporters benefit both directly and indirectly by having their names associated with a specific workshop. While SPE prohibits any type of commercialism within the workshop room itself, the Society recognises that supporting companies offer valuable information to attendees outside the technical sessions.

SPONSORSHIP CATEGORIES
Sponsorship categories are offered on a first come basis. Please contact SPE to enquire and verify the availability of categories. Existing supporters have the opportunity to renew the same level of support for annual workshops.

SPONSORSHIP BENEFITS
In addition to onsite recognition; SPE will recognise sponsors on the SPE website and in all printed materials for the workshop. Based on the category selected, supporting companies also receive logo visibility on promotional workshop items.

FOR MORE INFORMATION
For a detailed list of available sponsorship opportunities, including benefits and pricing, contact Hanna-Rose Abdul Jalil at hajalil@spe.org.
**REGISTRATION FORM**

**Society of Petroleum Engineers**

**SPE Reservoir Surveillance & Production Enhancement through Cost Effective Technology Integration and Operation Efficiency**

**Workshop and Training Course**

10 – 13 October 2016 | Kuala Lumpur, Malaysia

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**SPE Member:** □ Yes □ No

**Membership No.**

**Name:**

(First / Forename) (Middle) (Last / Family Name)

**Position:**

**Company:**

**Address:**

Town/City: ______________________________ Zip/PostalCode:_______________________________ Country: _________________________________

Tel: ______________________________ Fax: ______________________________ Email: _________________________________

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**Would you be willing to give a brief (10-15 minutes) presentation** **[Yes/No]?** If yes, please attach the topic with a short abstract of your proposed presentation. One of the Programme Committee members will contact you to discuss your presentation.

**Important:** Registrants for SPE Workshops are accepted on the basis of information submitted by each registrant.

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**Technical Disciplines (Check One)**

- □ Drilling
- □ Completions
- □ Management and Information
- □ Projects, Facilities and Construction
- □ Drilling
- □ Economics
- □ Geology
- □ Geophysics
- □ Reservoir Description and Dynamics
- □ Operation
- □ Reservoir
- □ Surveillance
- □ Other: ____________________

**List background and experience. (Use additional paper if required).**

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**List your expectation for the Workshop, so that the committee can tailor a portion of the Workshop to answering attendees’ concerns. (Use additional paper if required).**

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**Payment by Telegraphic Transfer**

- □ Telegraphic Transfer (Bank details will be provided on the tax invoice).

**Payment by Credit Card**

Credit Card Payment will be in U.S. Dollars only

- □ American Express
- □ MasterCard
- □ Visa
- □ Diners Club

**Card Number** ______________________________ **Security Code** (3 digits on back of card / 4 digits on the front of Amex)

**Expiration Date (mm/yy)** ______________________________

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**Credit Card Billing Address & Zip/Postal Code**

**Name of Card Holder**

**Signature**

**Note:** Forms will not be processed and space cannot be guaranteed unless accompanied by payment for total amount due, unless accompanied by payment for total amount due.

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**Registration Fees**

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<th>Complete Series (10-13 Oct) (Workshop &amp; Post Workshop Training Course)</th>
<th>Super Early Bird Registration on/before 15 August 2016</th>
<th>Early Bird Registration on/before 15 September 2016</th>
<th>Registration after 15 September 2016</th>
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**Workshop Only (10-11 Oct)**

- □ US$ 1,500.00
- □ US$ 1,700.00
- □ US$ 1,600.00
- □ US$ 1,800.00
- □ US$ 1,700.00
- □ US$ 1,900.00

**Post-Workshop Training Course Only (12-13 Oct)**

- □ US$ 1,100.00
- □ US$ 1,300.00
- □ US$ 1,200.00
- □ US$ 1,400.00
- □ US$ 1,300.00
- □ US$ 1,500.00

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**To find out more about group registrations, please contact us at spekl@spe.org**

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**Cancellation Policy:**

- a) A processing fee of USD150.00 will be charged for cancellation received thirty (30) days prior to the first day of the workshop.
- b) 25 % refund will be made for cancellation received between twenty nine (29) - fifteen (15) days prior to the first day of the workshop.
- c) No refund on cancellation received fourteen (14) days prior to the first day of the workshop.
- d) No refund will be issued if a registrant fails to show up on-site.

**This form may be used as a company invoice.**

Mail completed registration form with remittance and any supporting material to:

**Society of Petroleum Engineers**

Level 35, The Gardens South Tower, Mid Valley City

Lingkaran Syed Putra, 59200 Kuala Lumpur, Malaysia.

Tel : 60.3.2182.3000 Fax : 60.3.2182.3030

E-mail: spekl@spe.org