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ASSOCIATION OF
GEOSCIENTISTS &
ENGINEERS

5th EAGE Workshop on Fiber Optic Sensing for Energy Applications

3-4 JULY 2025 • KUALA LUMPUR, MALAYSIA

- **Programme**

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TECHNICAL COMMITTEE

The Technical Programme Committee is integral to the workshop and enables EAGE to continue its mission in the development and application of geosciences to promote innovation and technical progress in communities worldwide.

Mohamad Rizam Sarif (Chairperson)	PETRONAS
Prof. Roman Pevzner (Co-Chairperson)	Curtin University
Prof. Abdul Halim Abdul Latiff (Co-Chairperson)	Universiti Teknologi PETRONAS
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Dr. Olivia Collet	Curtin University
Dr. Konstantin Tertyshnikov	Curtin University
Christophe Maisons	FEBUS Optics
Brett Bunn	Geospace Technologies
Dr. Paolo Martizzi	Geophysical Surveying Co., Ltd. (GSC)
Dr. Arthur Guzik	Neubrex
Alex Tarang	PETRONAS
Ts. M Hafizal Mad Zahir	PETRONAS
Law Chung Teck	PETRONAS
Mohd Firdaus Abdul Halim	PETRONAS
Dr. Anton Egorov	RadExPro
Amalia Bolhassan	Shell
Dr. David Hill	Sintela
Dr. Joel Le Calvez	SLB
Dr. Vladislav Lesnikov	TotalEnergies
Dr. Muhammad Imran Mustafa Abdul Khudus	Universiti Malaya
AP. Ir. Dr. Hisham Mohamad	Universiti Teknologi PETRONAS
Harrison Moore	SHEARWATER
Dr. Henry Debens	Woodside Energy



WORKSHOP OVERVIEW

The workshop will focus on recent developments in fiber optic sensing, including high-value use cases, technology drivers, and emerging trends. We aim to bring together current and prospective technology end-users, problem owners, and experts in sensor hardware, tools, fibers, cables, interrogators, and applications. Topics will cover a wide range of uses, such as seismic imaging, downhole monitoring, reservoir surveillance, and more.

This workshop is designed to cater to professionals engaged in Energy Transition, including those in the oil and gas, geothermal, CCUS, and other linked sectors, such as geoscientists, geophysicists, reservoir engineers, well completion specialists, data scientists, civil engineers, and marine professionals. We are inviting both industry practitioners and researchers in the fiber optic sensing field to contribute to the workshop.

Key highlights will include:

- **Fiber Optic Sensors:** Combining distributed and point sensors, such as 3C fiber optic sensors, for diverse applications.
- **Infrastructure Monitoring:** Focusing on structural health, civil engineering, and smart cities applications.
- **Marine Acquisition:** Addressing subsea applications, underwater acoustics, and the security of cables for underwater deployments.
- **Reservoir Monitoring and Surveillance:** Key applications in oil and gas, with a focus on reservoir monitoring and surveillance for improved reservoir management.
- **Fiber Optic Applications Across Oil Fields:** Exploring how fiber optic technologies support the oil and gas industry in reservoir monitoring, well completion, and overall field management.
- **Novel and Emerging Use Cases:** Identifying and exploring innovative fiber optic sensing technologies and their potential applications in various industries.



STRATEGIC PROGRAMME

Opening & Keynote Address Speaker



M. Zabuddin M. Zawawi
Custodian (Acquisition)
PETRONAS

Keynote Speakers



Dr. Gang Yu
Senior Technical Advisor to the President
BGP, Inc.

Keynote Title: Junggar Basin 3D DAS-VSP Data Acquisition, Processing and Integrated Interpretation



Dr. Pierre Bettinelli
Reservoir Performance Fiber Optics,
Geophysics Technical Director
SLB

Keynote Title: Transforming Subsurface Understanding and Monitoring: DAS, Elastic FWI, and Microseismic

Panel Moderator



Prof. Dr. Roman Pevzner
Professor
Curtin University

Panel Speakers



M. Zabuddin M. Zawawi
Custodian (Acquisition)
PETRONAS



Dr. Pierre Bettinelli
Reservoir Performance Fiber Optics,
Geophysics Technical Director
SLB



Dr. Xue Ziqiu
Chief Researcher, CO₂ Storage Research
Group
Research Institute of Innovative Technology
for the Earth (RITE)



Dr. Gang Yu
Senior Technical Advisor to the President
BGP, Inc.



Mr. Christophe Maisons
Technology Fellow
FEBUS Optics



Dr. Mahmoud Farhadiroushan
Executive Director
Silixa

PANEL DISCUSSIONS

Panel Discussion: Benefits on Fiber Optic Sensing for the Energy Transition

Thursday, 3 July 2025, 1100 – 1230 hrs (UTC+8) -
Ballroom 2 (Level 10), Imperial Lexis Kuala Lumpur



GENERAL INFORMATION

Venue Information

Ballroom 2 (Level 10), Imperial Lexis Kuala Lumpur
Address: 15 Jalan Kia Peng, 50450 Kuala Lumpur, Malaysia
Website: www.imperiallexiskl.com/
Contact: +603 2177 1188
Main Reservations Line: +603 2083 0933
Email: stay@imperiallexiskl.com

How to Get There: Transportation

- Public transport: Conlay MRT Station - Estimated 2 minutes drive (260m)

From Kuala Lumpur International Airport:

- By public transport: Board the KLIA Transit to KL Sentral Transit Hub and switch to MRT line
- By car: Estimated 1 hour drive (Terminal 1: 158km / Terminal 2: 258km)
- Shuttle service: Imperial Lexis Kuala Lumpur offers shuttle service at an additional charge. Once you have made your reservation, you can arrange the airport shuttle directly with the Concierge desk.

EAGE Registration Desk

We encourage delegates to visit the EAGE Registration Desk to learn about membership benefits and upcoming events to make the most of your EAGE involvement. We welcome feedback on EAGE's activities for us to improve upon our membership services.

Badge collection will open at the following times:

3 July 2025 - 7.30 am – 9.00 am (UTC +8) - Ballroom 2 (Level 10), Imperial Lexis Kuala Lumpur
4 July 2025 - 8.00 am – 9.00 am (UTC +8) - Ballroom 2 (Level 10), Imperial Lexis Kuala Lumpur

Upload Desk

If you have any questions about the technical programme or wish to upload their presentation slides on-site, please refer to EAGE Staff at the AV Console at the following times. Speakers are encouraged to upload/email their presentation slides in advance of the session.

Upload Onsite

3 - 4 July 2025	7.30 am - 9.00 am (UTC +8)	Ballroom 2 (Level 10), Imperial Lexis Kuala Lumpur
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Poster Presentations

We encourage delegates to attend and visit the Poster Presentations during the AM & PM Break (Day 1) at Ballroom 2 (Level 10), Imperial Lexis Kuala Lumpur.

Luncheon

3 July 2025	12.30 pm - 1.45 pm (UTC +8)	Roselle Coffee House (Level 8), Imperial Lexis Kuala Lumpur
4 July 2025	12.20 pm - 2.20 pm (UTC +8)	

Networking Reception

All workshop delegates are cordially invited to the Networking Reception

3 July 2025	5.25 pm - 6.55 pm (UTC +8)
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Lost & Found

Lost and found items will be placed at the EAGE Registration Desk located at Ballroom 2 (Level 10), Imperial Lexis Kuala Lumpur

Medical Assistance

In case of a medical emergency, please alert EAGE staff immediately.

Nearby Hospital

Prince Court Medical Centre (Estimated 5 minutes drive)
Address: 39, Jalan Kia Peng, 50450 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur
24-Hour Hotline: +603 2160 0000
Ambulance/Emergency: +603 2160 0999
Website: <https://princecourt.com/>

Emergency Contacts

If you need help, please dial 999 for Malaysia Emergency Response Services (MERS) if you need help from the Police, Fire Services Department or an ambulance. For the speech or hearing impaired, you could call for assistance via SMS to 992.

Photo and Video Regulations

Photography and video/audio recording of any kind are strictly prohibited in the technical sessions.

EAGE strives to bring you the greatest and latest of scientific and technical advances. Due to the importance of the technical content, EAGE upholds a photography and videography policy, in an endeavour to protect these leading-edge technologies.

Wi-Fi

Delegates may connect to free Wi-Fi at the venue. Wifi details will be provided onsite.

Deliverables

The following are included in the delegate fee

- Access to workshop technical sessions
- Daily Luncheon
- Daily Morning and Afternoon refreshments
- Networking Reception
- Event proceedings via EAGE's EarthDoc (*for EAGE members only*)
- Complimentary EAGE Membership will be included for the remainder of 2025 (*for fully paid non-members*)

Disclaimer: The Technical Programme is confirmed as of publishing date and may be subject to change without prior notice.



TECHNICAL PROGRAMME

Oral Presentations | Thursday, 3 July 2025

BALLROOM 2, IMPERIAL LEXIS KUALA LUMPUR	
09:00	Opening Remarks by Workshop Co-chairperson, Prof. Abdul Halim Abdul Latiff, Universiti Teknologi PETRONAS
09:05	Opening Address by En. M Zabuddin B M Zawawi, Custodian (Acquisition), PETRONAS
09:30	Keynote 1: Dr. Yu Gang, Senior Technical Advisor to the President of BGP, BGP Inc., CNPC - Junggar Basin 3D DAS-VSP Data Acquisition ,Processing and Integrated Interpretation
10:00	Keynote 2: Dr. Pierre Bettinelli, Reservoir Performance Fiber Optics, Geophysics Technical Director, SLB - Transforming Subsurface Understanding and Monitoring: DAS, Elastic FWI, and Microseismic
10:30	AM Break & Poster Presentation (Day 1)
Poster Presentation (Day 1)	
10:30	Comparative Analysis of Interrogator Unit Performance in Surface Seismic DAS: Case Study in a Campus Area - A.M. Majdi ^{1*} , A. Rashid ¹ , A.H. Abdul Latiff ¹ , M. Rafi ¹ , D.T. Asfha ¹ , B.A. Adeniyi ¹ , A.D. Putra ¹ , M.O. Ibrahim ¹ ¹ Center for Subsurface Imaging, Universiti Teknologi PETRONAS Comparison of Fiber Optic Accelerometers and Conventional Geophones in Field Testing for Seismic Exploration - W. Zhang ^{1*} , G. Qi ¹ , Y. Luo ¹ , W. Huang ¹ , K. Zhu ¹ ¹ Institute of Semiconductors, Chinese Academy of Sciences
11:00	Panel Discussion: Benefits on Fiber Optic Sensing for the Energy Transition
12:30	Luncheon (Day 1) - Roselle Coffee House (Level 8), Imperial Lexis Kuala Lumpur
Session 1: Fiber Optics in Action	
Session Chairs: Joel Le Calvez, SLB & Mahmoud Farhadiroushan, Silixa Ltd.	
13:45	Novel Application of Winchless Fiber Optic DTS/DAS Technology for Sustained Casing Pressure Diagnosis in Offshore Malaysia - P.L. Foo ^{2*} , J. Kueh ¹ , A. Bolhassan ¹ , M.W.S. Chin ² , D. Byrd ² , S. Chatterjee ² , K.T. Yeo ² ¹ Shell; ² Halliburton
14:10	Unlocking Permanent Subsea Monitoring - C. Sagary ^{1*} , J.K. Brenne ² , H. Nakstad ² , B. Six ¹ ¹ ASN; ² ASN
14:35	Identifying the Source of Very Low Sustained Casing Pressure Using DAS Acoustic and Strain Data - R. Crawford ^{1*} , J. Mignano ² , J. Ashton ² ¹ Well-Sense; ² AGL Energy Ltd.
15:00	Fiber Optics Application in Annulus Pressure Management and Well Integrity - A. Bolhassan ^{1*} , J. Kueh ¹ ¹ Shell Malaysia
15:25	PM Break & Poster Presentation (Day 1)

Poster Presentation (Day 1)	
15:25	Comparative Analysis of Interrogator Unit Performance in Surface Seismic DAS: Case Study in a Campus Area - A.M. Majdi ^{1*} , A. Rashid ¹ , A.H. Abdul Latiff ¹ , M. Rafi ¹ , D.T. Asfha ¹ , B.A. Adeniyi ¹ , A.D. Putra ¹ , M.O. Ibrahim ¹ ¹ Center for Subsurface Imaging, Universiti Teknologi PETRONAS Comparison of Fiber Optic Accelerometers and Conventional Geophones in Field Testing for Seismic Exploration - W. Zhang ^{1*} , G. Qi ¹ , Y. Luo ¹ , W. Huang ¹ , K. Zhu ¹ ¹ Institute of Semiconductors, Chinese Academy of Sciences
Session 2: Subsurface Imaging with DAS-VSP	
Session Chairs: Sebastien Soulas, Avalon Sciences & Alex Tarang, PETRONAS	
15:45	Anomalous Amplitude Noise Suppression in 3D DAS VSP Data Using Thresholder Local Frequency - Y. Moradi ^{1*} , A. Shahbazi ¹ , A. Tarang ² , H. M Zahir ² , F. Sedaralit ² , P. Moosavi ¹ , A. Shahbazi ¹ ¹ Risehill Data Analysis Sdn. Bhd.; ² Petronas
16:10	A Case Study of Joint Seismic and 3D DAS VSP acquisition and processing in eastern China - Y. Wang ^{1*} , Y. Chen ¹ , J. Shen ¹ , X. Li ¹ , F. Mu ² , Y. Wang ² , J. Li ¹ , Q. Zhao ¹ ¹ Optical Science and Technology (Chengdu) Ltd.,CNPC; ² Sinopec Geophysical Corporation
16:35	P- and S-wave separation in distributed acoustic sensing-vertical seismic profile (DAS-VSP) data using deep learning techniques - Y. Choi ^{1*} , J. Byun ¹ , S.J. Seol ¹ ¹ Hanyang University
17:00	Passive Environmental and Subsurface Monitoring via Seafloor DAS: an Update on an Australian Proof of Concept - R. Pevzner ^{1*} , O. Collet ¹ , R. Isaenkov ¹ , K. Tertyshnikov ¹ , B. Gurevich ¹ , E. Sidenko ² , A. Gavrilov ² , C. Erbe ² , D. McCorry ³ , H. A. Debens ³ ¹ Centre for Exploration Geophysics (CEG), Curtin University, ² Centre for Marine Science and Technology (CMST), Curtin University, ³ Woodside Energy Group Ltd.
17:25	Networking Reception
18:55	End of Workshop Day 1

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Oral Presentations | Friday, 4 July 2025

BALLROOM 2, IMPERIAL LEXIS KUALA LUMPUR	
Session 3: Infrastructure & Ocean Monitoring	
Session Chairs: Ts. M. Hafizal Mad Zahir, PETRONAS & Konstantin Tertyshnikov, Curtin University	
09:05	Analyzing the Difference and Similarities Between Geophone and DAS using Two Different Sources - H. Hashim ^{1*} , A.R. Md Arshad ¹ , Z. Ahmad Riyadi ¹ , A.M. Majdi ¹ , A.H. Abdul Latiff ¹ Universiti Teknologi Petronas
09:30	Multichannel Surface Wave Analysis: A Case Study Evaluating Passive Seismic Recordings Using Geophones and DAS - E. Al-Hemyari ^{1*} , R. Isaenkov ¹ , P. Shashkin ¹ , R. Pevzner ¹ , K. Tertyshnikov ¹ ¹ Curtin University
09:55	From Surface to Subsurface: Advancing Infrastructure Monitoring with Fiber Optics - L. Urmantseva ^{1*} ¹ AP Sensing GmbH
10:20 AM Break (Day 2)	
Session 4: Advanced Processing & AI-Enhanced DAS Applications	
Session Chairs: Christophe Maisons, FEBUS Optics & Anton Egorov, RadExPro Seismic Software	
10:40	Impact of Cable Materials and Soil Properties on the Sensitivity of Shaped Fibres for DAS - B. Adeniyi ^{1*} , A.H. Abdul Latiff ¹ , Z. Adedeji ¹ , A. Majdi ¹ , A. Rashid ¹ ¹ Universiti Teknologi Petronas
11:05	3-C fiber optic point sensors qualification for true vector wavefield measurements at ASL quarry in Cornwall - S. Soulas ^{1*} , G. Tubridy ¹ , S. Berry ¹ , P. Royds ¹ , T. Tubridy ¹ , B. Kaack ¹ , W. Wills ¹ , S. Wellens ¹ , S. Bridger ¹ , C. Bird ¹ , K. Hann ¹ , J. Rawlings ¹ ¹ Avalon Sciences Ltd
11:30	Application of Fiber Optic Sensing Monitoring in Optimizing Fracturing - F. Heng ^{1*} , T. Xiong ² , S. Liu ² , W. Zhou ¹ ¹ BGP; ² PetroChina Qinghai Oilfield Company
11:55	Integrated Workflow for Hydraulic Fracturing: Coupling Fiber Optics, Advanced Simulation, and Stimulation Chemistry - J. Le Calvez ^{2*} , D. Kuznetsov ¹ , R. Korkin ¹ , M. Chertov ¹ ¹ SLB
12:20	Luncheon (Day 2) - Roselle Coffee House (Level 8), Imperial Lexis Kuala Lumpur

Session 5: New Frontiers in Carbon Storage, Environmental Monitoring & Sensing Technologies

Session Chairs: Amalia Bolhassan, Shell & Mohd Firdaus Abdul Halim, PETRONAS

14:20	Optical Fiber CO2 Sensor Based on a D-Shaped Structure with Au and ZnO Layers - A.A.Z. Awang Bujang ^{1*} , N.A.M. Zainuddin ² , Z. Jusoh ² , S.W. Harun ³ , M.H. Mad Zahir ¹ , A. Franzen ¹ ¹ Petronas Research Sdn. Bhd.; ² School of Electrical Engineering, College of Engineering, Universiti Teknologi MARA, Dungun; ³ Photonics Engineering Laboratory, Department of Electrical Engineering, Faculty of Engineering, University of Malaya, 50603 Kuala Lumpur
14:45	Real-Time Multi-Well DAS Monitoring for Carbon Storage: Otway Stage 4 Implementation - R. Pevzner ^{1*} , R. Isaenkov ¹ , K. Tertyshnikov ¹ , O. Collet ¹ , P. Shashkin ¹ , H. Nourollah ² , J. Correa ³ , T. Wood ³ , B. Gurevich ¹ ¹ Curtin University; ² CO2CRC Ltd; ³ LBNL
15:10	Advancing Dark-Fiber DAS Technology for Seismic, Infrastructure, and Environmental Monitoring - B. Yoon ^{1*} , S. Choi ¹ , H. Lim ¹ , Y. Seong ¹ , K.G. Park ¹ , C. Lee ¹ , K. Yang ¹ , M. Son ¹ , K. Yun ² , Y. Cho ³ ¹ Korea Institute of Geoscience and Mineral Resources; ² Korea Electric Power Research Institute; ³ Seoul National University
15:35 PM Break (Day 2)	

Session 5: New Frontiers in Carbon Storage, Environmental Monitoring & Sensing Technologies (Cont'd)

Session Chairs: Amalia Bolhassan, Shell & Mohd Firdaus Abdul Halim, PETRONAS

15:55	T8 Novel Interrogator with 1 m gauge length and suppressed fading - E. Fomirjakov ^{1*} , P. Pushko ^{1,2} , D. Bengalskiy ¹ , D. Kharasov ¹ , V. Treshchikov ¹ ¹ T8 LLC; ² Moscow Institute of Physics and Technology
16:20	Comparative Study of Distributed Acoustic Sensing (DAS) and Geophone Response in Geothermal and Groundwater Systems - A. Rashid ¹ , A.H. Abdul Latiff ¹ , A.D. Putra ¹ , M. Rafi ¹ , A.R. Md Arshad ¹ , I. Babikir ¹ , A.M. Majdi ¹ , B.A. Adeniyi ^{1*} ¹ Centre for Subsurface Imaging, Universiti Teknologi PETRONAS, Seri Iskandar 32610, Perak
16:45	Closing Remarks by Workshop Co-Chairperson, Prof. Abdul Halim Abdul Latiff, Universiti Teknologi PETRONAS
16:55	End of Workshop

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SPONSORS' PROFILE

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Alcatel Submarine Networks (ASN) Energy Solutions is a global leader in delivering advanced subsea optical fibre communication and sensing solutions tailored for the offshore energy sector. Leveraging over 160 years of expertise in submarine cable systems, ASN Energy Solutions offers a comprehensive portfolio designed to meet the unique challenges of offshore operations.

Key Offerings:

Offshore Platform Connectivity: Providing high-capacity, low-latency optical fibre links between remote offshore platforms and onshore facilities, enabling seamless communication and real-time data transfer. This connectivity supports remote operations, enhances safety, and reduces operational costs.

Permanent Reservoir Monitoring solutions: Using passive sensors (optical fiber) technology in a four components (4C) station, Optowave™ provides supreme reservoir imaging solution and enhanced repeatability from survey to survey.

Electrification and Digitalization of Oil Field: ASN's DC/FO solution is a new generation subsea infrastructure delivering power and Fibre Optic (FO) communication from onshore or offshore host facilities to subsea production systems.

State of the art fiber sensing (DAS): OptoDAS interrogator is using a unique interrogation technique providing low-noise and long-range quantitative phase measurements in single mode optical fibers. This can be used for various applications, from VSP's acquisition to Seismic acquisition and critical infrastructure monitoring.

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Silixa, now part of Luna Innovations, offers the finest portfolio of distributed sensing solutions available anywhere. Shaped by 15 years of pioneering research and application, the offered end-to-end solutions enable temperature, strain and acoustic measurements at the highest fidelity – even in the most hostile settings.

This unrivalled technical portfolio is backed by project management and specialist data services to help customers finally overcome the obstacles of distance, time and knowledge, to turn data into decisions.

Company Display Sponsor



We offer RadExPro seismic processing software with extended Distributed Acoustic Sensing (DAS) support. This includes direct input for various DAS data formats, real-time acquisition Quality Control (QC), including the estimation of Signal-to-Noise Ratio (SNR) achieved at every stacked shot, as well as the ability to export DAS data to SEG-Y format. Our software also supports DAS Vertical Seismic Profile (VSP) and Multichannel Analysis of Surface Waves (MASW) processing, along with DAS-to-geophone and geophone-to-DAS conversions.

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GEO EXPRO is run by a small but dedicated team of people who all work together from different parts of the world to produce six magazines per year, in combination with publishing the magazine's content online and on social media.

Our mission is to report on developments in the energy sector from a subsurface perspective, taking the role of observer and commentator on projects both in the oil and gas and renewable space. As such, we acknowledge the major importance oil and gas still plays with regards to energy security, whilst keeping a close eye on new developments in low-carbon subsurface solutions at the same time.



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