MAIN KEYNOTE SPEAKER

H. E. Suhail Mohamed Faraj Al Mazrouei
Minister of Energy and Industry

HE Suhail Mohamed Faraj Al Mazrouei was appointed Minister of Energy in March 2013. He is a Board Member and Managing Director of IPIC.

Chairman of IPIC subsidiaries:
Borealis, NOVA Chemicals and Aabar Investment.

In addition, HE is the Chairman of the Board of Directors of the Federal Electricity and Water Authority (FEWA), Chairman of the Board of Directors of Mubadala Mubadala Investment Co, Member of the Supreme Petroleum Council, Member of the Board of Directors of the Dolphin Energy Co, Vice-Chairman of the Emirates Nuclear Energy Corporation “ENEC” and Board Vice-Chairman of “Barakah One Company”, and Board Vice-Chairman of “Nawah Energy Company”.

In 2017, H.E becomes the Minister of Energy and Industry.

H.E. graduated in 1996 from the University of Tulsa the United States with a Bachelor’s degree in Petroleum Engineering.

H.E. SAEED MOHAMMED AHMAD AL TAYER

Managing Director & CEO Dubai Electricity & Water Authority (DEWA)

H.E. Saeed Mohammed Ahmad Al Tayer has an overall experience of more than 34 years in the field of telecommunications, energy, water, infrastructure, oil, gas and industry. Under his leadership since 1992, DEWA achieved unprecedented successes and has become one of the very best distinguished utilities in all aspects world-wide. As an initiative of his own, several successful companies were established, including Emirates Central Cooling Systems Corporation (EMPOWER), Etihad Energy Services Company (Etihad ESCO), Mai Dubai and many other companies.

His Excellency is a member of Dubai Executive Council and Strategic Affairs Council, Vice Chairman of the Dubai Supreme Council of Energy (DSCE), Chairman of Dubai Smart City Office, Vice Chairman of Emirates Global Aluminium (EGA), Vice Chairman of Emirates National Oil Company (ENOC), Vice Chairman of Dragon Oil Company, Chairman of UAE Water Aid (SUQIA) Board Of Trustees, Chairman of World Green Economy Organization (WGEO), and Chairman of Dubai Future Council On Energy. He was Chairman of the Infrastructure and Environment Committee – Dubai Executive Council – during the period from 2006 up to 2017. In addition, His Excellency is a member, vice chairman, or chairman of various high-level committees and higher leading councils in the Emirate of Dubai.

His Excellency received a number of prestigious awards such as the “Middle East Champion of Energy” award received at the World Green Economy Summit 2015 from the United Nations Development Programme (UNDP). On 18 May 2016, the UNDP appointed His Excellency as “UNDP National Goodwill Ambassador for Sustainable Development Goals”. In addition, the Swiss Business Council, Dubai & Northern Emirates awarded His Excellency the prestigious “Lord of Matterhorn Award”. Moreover, His Excellency received an honorary doctorate from Amity University in Dubai in appreciation of his continuing innovative efforts to achieve excellence and enhance scientific knowledge and sustainability.

FEATURED KEYNOTE SPEAKERS

RICK MILLER, 2019-2020 SEG PRESIDENT

Rick Miller received a BA in physics from Benedictine College, an MS in physics (emphasis geophysics) from University of Kansas (KU), and a PhD in geophysics from University of Leoben, Austria. Since 1983, he has been at the Kansas Geological Survey, a research and service division of KU, where he is senior scientist and courtesy associate professor of geology. His scientific interests focus on applying shallow-seismic methods to a wide assortment of problems from energy to engineering to the environment.

SEG is Miller's professional home, and the Society has recognized his contributions advancing the science and serving the profession with the inaugural SEG Near Surface Harold Mooney Award (1995), SEG Distinguished Achievement Award (2002) to Miller's research group, and Life Membership Award (2014). His service to SEG includes terms as second vice president (2011–2012), first vice president (2012–2013), treasurer and chairman for the SEG Global Inc. Board of Directors (2014–2018), and representative to the SEG Council nine times since 1989. An SEG member since 1984, Miller has served on several boards, most notably The Leading Edge (TLE) Editorial Board (chair, 2009), a half-dozen committees, and task force appointments (Inter-Society, Near Surface, IDC, and China). He served SEG three times as Technical Program cochair for the International Conference on Engineering Geophysics (2015, 2017, 2019) in the United Arab Emirates, four times a workshop convener, and three times continuing education instructor. In 2012, he was selected inaugural Near-Surface Honorary Lecturer.

Miller was guest editor on 17 TLE special sections and an author on 33 TLE articles. He has edited or co-edited two SEG books and been author on more than 137 Annual Meeting expanded abstracts, 115 refereed articles (26 in GEOPHYSICS, two in Interpretation), and eight SEG book chapters.

JOHN BRADFORD, COLORADO SCHOOL OF MINES

John Bradford received BS degrees in Physics and Engineering Physics with a concentration in Chemical Engineering from the University of Kansas in 1994. He received his PhD in Geophysics from Rice University in 1999. In 2001 he joined the Center for Geophysical Investigation of the Shallow Subsurface at Boise State University, where he served as director from 2006-2009. In 2017 he moved to the Colorado School of Mines where he served as the Geophysics Department Head until 2019, and is currently Vice Provost for Global Initiatives and Dean of Earth Resource and Environmental Programs. His research is focused on developing methodologies for quantitative analysis of near-surface seismic and ground-penetrating radar data with emphasis on using these tools to solve interdisciplinary science and engineering problems. He has published on a diverse array of topics that include hydrocarbon detection as both resource and contaminant, geothermal characterization, hydrogeophysics, glaciology, and archaeology. In 2015/2016 he served as the President of the Society of Exploration Geophysicists.

ZHONGBO YU, HOHAI UNIVERSITY, NANJING, CHINA

He is the Director of the State Key Laboratory of Hydrology-Water Resources and Hydraulic Engineering, Hohai University, Nanjing, China. In 1983 he obtained his B.Sc. degree in hydrogeology and engineering geology from Hohai University. In 1992, he finished his M.Sc. in hydrogeology at the University of Southern Mississippi. He received his PhD in hydrology/hydrogeology from Ohio State University in 1996. He had a Post-Doctoral, Fellowship at Pennsylvania State Universityin 1997.

Dr Zhingbo is the Chairman of Groundwater Management Committee of IAHR, Vice-Chairman of the Chinese Committee of IAHS, Vice-Chairman of UNESCO-IHP, and Fellow of the Geological Society of America (GSA).

He is Editor of Hydrology and Earth System Sciences since 2014, Editor of Water Science and Engineering since 2008, and Associate Editor of the Journal of Hydrologic Engineering since 2008.

He has awarded many prestigious scientific awards and published over 250 papers.

JIANGHAI XIA, ZHEJIANG UNIVERSITY, CHINA

Jianghai Xia is a “Qiushi” University Professor of geophysics at Zhejiang University, China. He graduated from Chengdu College of Geology in 1977 and received his MS in geophysics from Wuhan College of Geology in 1982 and his PhD in geology with emphasis in geophysics from the University of Kansas in 1992. He was a post-doctoral researcher (1993-1995), an assistant scientist (1995-2001), and an associate scientist (2001-2007), and a senior scientist (2007-2013) at the Kansas Geological Survey, the University of Kansas. He was a distinguished professor of geophysics and the director of Hubei Subsurface Multi-scale Imaging Key Laboratory (SMIL) at the China University of Geosciences (Wuhan) (2011-2016). He is an Editor-in-Chief of Journal of Applied Geophysics, an honorary member of Chinese Geophysical Society (CGS) Committee, and the President of Near-Surface Geophysics Committee of CGS. He is an author and coauthor of more than 100 SCI journal articles with total citations of over 2500 and h-index of 25. He is a winner of the 2008 SEG Harold Mooney Award, the “Best Paper” of the 2008 Environmental and Engineering Geophysical Society (EEGS) Annual Conference (SAGEEP), and the 2012 Science and Technology Progress Award (Second Prize) of China Geophysical Society. As a main researcher, the group at Kansas Geological Survey won the 2002 SEG Distinguished Achievement Award and the 2019 EEGS Institutional Contribution Award. He has been a co-chair of the International Conference on Environmental and Engineering Geophysics (ICEEG) since 2004. His current main research interest is high-frequency surface waves including 2D/3D Rayleigh/Love wave analysis and inversion. He is a member of CGS, SEG, and NSG.

TORLEIF DAHLIN, ENGINEERING GEOLOGY, LUND UNIVERSITY, SWEDEN

Torleif Dahlin completed a M.Sc. in Civil Engineering at Lund University in 1984, specialising in water and geo-resources engineering. He got his doctorate degree in 1993 at Engineering Geology in Lund, where he is now professor. The doctorate thesis focussed on geoelectrical imaging for engineering and environmental applications, which has remained the primary research interest. A prototype data acquisition system developed during the doctorate studies was later commercialised as the ABEM Lund Imaging System. He has led development of multi-channel instruments for resistivity and time-domain induced polarisation. He has been teaching engineering geology, hydrogeology, field investigation methodology and applied geophysics for universities and industry, and supervised master and doctorate level students. Research activities include industry and international cooperation, where he currently is PI for research projects on monitoring of soil remediation (MIRACHL), quality control of soil stabilisation (ASSERT), monitoring of embankment dams, etc. International cooperation with field work with focus on electrical and EM methods in Scandinavia, Cape Verde Islands, eastern and southern Africa, Central America, South America and the Arctic.

HITOSHI MIKADA, KYOTO UNIVERSITY, JAPAN

Hitoshi Mikada is a professor in charge of applied geophysics in the Department of Civil and Earth Resources Engineering, Kyoto University. He received B.S., M.S. and Ph.D. degrees in geophysics from the University of Tokyo in 1981, 1983 and 1994, respectively. His 35 years of career with industry was started as an interpretation engineer in Schlumberger in Tokyo from 1983. Since then, he has held research positions in the University of Tokyo, Schlumberger, Japan Agency for Marine-earth Science and Technology before obtaining a professorship of geophysics at Kyoto University. He has worked as an editor in charge of applied geophysics for a SpringerOpen journal “Progress in Earth, Planetary Science” since 2012 until 2019. He has been an SEG active member for more than 20 years and served as a SEG council member in 2010 for 6 years. He contributed as from a program committee member to an oversighting committee chair to 10 SEG-cosponsored international geophysical symposia held in Asia since 1994. His international activity includes services as a committee member in CTBTO in 2002-3, and a co-chair of interim Science Steering Committee of IODP in 1999-2003. He now serves as the advisor to the SEG Student Chapter in Kyoto University. His main interest includes researches on theories and praxis in seismic scattering, wave propagation in attenuating and anisotropic media, seismic data processing, electromagnetic exploration, geophysical logging, etc., for which he tries to accommodate particle based methods in full waveform inversion (FWI) and in interdisciplinary areas of research between reservoir engineering and exploration geophysics.

THE ROLE OF ENGINEERING GEOPHYSICS IN THE CLIMATE CHANGE

ICEG 2019 SPECIAL PLENARY PANEL: A LOOK TOWARD ENGINEERING SOLUTIONS FOR CLIMATE CHANGE ADAPTATION

The 2018 IPCC report on climate change predicts catastrophic consequences of climate change by 2040. To minimize the impact on humankind we must adapt. Coastal regions must be prepared to manage rising sea levels to include eroding coast lines and reengineering coastal infrastructure. Groundwater resources will be redistributed with some areas seeing more rapid depletion while other areas may find rising groundwater levels. Greater volatility in the atmosphere will result in more energetic storms potentially leading to more impactful storm hazards such as flash flooding. Geophysics has an important role to play in engineering solutions to these problems. This panel will bring together thought leaders to discuss engineering geophysics applications in climate change adaptation.

JOHN BRADFORD (MODERATOR), COLORADO SCHOOL OF MINES.

He is currently Vice Provost for Global Initiatives and Dean of Earth Resource and Environmental Programs at the Colorado School of Mines. His research is focused on developing methodologies for quantitative analysis of near-surface seismic and ground-penetrating radar data with emphasis on using these tools to solve interdisciplinary science and engineering problems. He has published on a diverse array of topics that include hydrocarbon detection as both resource and contaminant, geothermal characterization, hydrogeophysics, glaciology, and archaeology. In 2015/2016 he served as the President of the Society of Exploration Geophysicists.

ABDULLATIF AL-SHUHAIL, KFUPM

Abdullatif Al-Shuhail is a Professor of Geophysics and Chairman of the Geosciences Department at King Fahd University of Petroleum & Minerals (KFUPM). He founded and directed the Near Surface Seismic Investigation Consortium at KFUPM in 2006-2008. He has authored and co-authored 60+ journal and conference papers in the field of petroleum seismic exploration. He is a co-author of several books and co-inventor of several USPTO patents. His research interests include near-surface effects on petroleum seismic data, seismic investigation of fractured reservoirs, and ground penetrating radar.

ANA P. BARROS, DUKE UNIVERSITY

Ana P. Barros is the Edmund T. Pratt, Jr. School Professor of Civil and Environmental Engineering at Duke University. Her research is in Environmental Physics and interdisciplinary Hydrosciences including Remote Sensing, Hydrology and Hydroclimatic Sciences. Dr. Barros is a founding member and past-Chair of the American Society of Civil Engineers (ASCE) Committee on Adaptation to a Changing Climate. She is a Fellow of the American Meteorological Society, American Geophysical Union, American Association for the Advancement of Science, and the ASCE. Dr. Barros is a member of the US National Academy of Engineering (NAE).

KENJI TANAKA, KYOTO UNIVERSITY

Kenji Tanaka is currently Associate Professor in the Disaster Prevention Research Institute at Kyoto University. His specialties are observation and numerical modeling of land surface processes and water resources engineering. He participates in several projects on the development of the next generation of land surface model, impact assessment of climate change on water resources, and real time monitoring of land surface states.

TETSUYA SUMI, KYOTO UNIVERSITY

Tetsuya Sumi is an Associate Professor at the Department of Civil Engineering Kyoto University. His specialties are hydraulic engineering, dam engineering and civil engineering, with particular emphasis on sediment management of rivers and reservoirs, river restoration, dam operation, numerical modeling and field monitoring of sediment flushing, bypassing and replenishment. He is active in several projects on the integrated sediment management for reservoir sustainability and improvement of river basin environment. Recently he chaired the national committee on dam upgrading initiative. He is also leading international symposium of Flash Flood in Wadi Systems under the regional project of GADRI.

TECHNICAL PROGRAM

SUNDAY, OCTOBER 20

UAE University – Crescent Building Auditorium

09:00 **Innovation Award for Geophysics Competition**

17:00 **Ice Breaker at Exhibition area**

MONDAY, OCTOBER 21

UAE University – Crescent Building Auditorium

08:00 **Registration & Welcome Coffee**

09:30 **Welcome DAY 1 / HSE Moment**

09:40 **Opening Ceremony**
(National Anthem & Short film on the ICEG, 10 Years of success)

10:00 **Opening Speech**

10:20 **Main Keynote Speaker**
H.E. Suhail Al Mazrouei, Minister of Energy and Industry

11:00 **Coffee break & Visitng the Exhibition**

12:30 **Lunch**

MONDAY, OCTOBER 21

UAE University – Crescent Building Auditorium
Session 1: Engineering Geophysical Methods
Session Chair: Haydar Baker
Session Cochair: Steve Sloan

13:30 **EG01 - Keynote Speech: Applied Geophysics: Enlarging the View, Exposing Assumptions, Tightening the Mesh.** Richard Miller*, Shelby Peterie, Julian Ivanov, Dmitry Borisov Kansas Geological Survey University of Kansas, USA

13:50 **EG02 - Near-surface methods in the geotechnical industry: Challenges, opportunities and limitations. (D)** Andreas A. Pfaffhuber*, Sara Bazin and Regula Frauenfelder Norwegian Geotechnical Institute, Norway

14:10 **EG03 - Detecting and delineating voids and mines using surface wave methods in Southeastern Kansas.** -Julian Ivanov*, Richard D. Miller, Sarah L. Morton, and Shelby L. Peterie - Kansas Geological Survey, USA

14:30 **EG04 - An alternative to the traditional electrode arrays for 2D electrical resistivity tomography: enhanced version of the common gradient measurement.** Bing Zhou*, Saif Ullah, Muhammad Asim, Moosoo Won, Safeya Alkatheeri - Department of Earth Sciences, Khalifa University of Science and Technology, Abu Dhabi, UAE

14:50 **EG05 - Non-geophysical challenges for improved use of geophysics in infrastructure planning. (I)** - Mats Svensson* and Olof Friberg Tyréns AB, Sweden

15:10 **EG06 - Subsurface Investigations of Ground Instability Using Geophysical Methods: A Case Study from West Algiers. (I)**-F. Khaldaoui[1], Y. Djediat[2], M. Djeddi*[1], Z.Nemer[1], H.A. Baker[3], M.E. Djeddi1 [1)] Laboratoire de Géophysique, FSTGAT, Algiers, Algeria [2)] Laboratoire de Géodynamique, FSTGAT, Algiers, Algeria [3)] United Arab Emirates University, Al Ain, UAE

15:30 **EG07 - Evaluation of Soil Grouting by Active-Passive MASW Surveys. (D)** - Choon Park*[1], Alessandro Cirone[2], and Roger Rodrigues[2] [1)] Park Seismic LLC [2] Engegraut Ltd

15:30 **Coffee Break**

MONDAY, OCTOBER 21

Crescent Building Auditorium

Session 2: Engineering & Geotechnical Geophysical Methods

Session Chair: Christopher Leech

Session Cochair: Aman Mwafy

16:10 **EG08 - Small scale seismic testing using microphones.**
Nils Ryden*[1], Josefin Starkhammar[1], Oz Yilmaz[2], Henrik Bjurström[3], Anders Gudmarsson[4], and Oskar Tofeldt[5],
[1)] Lund University, Sweden
[2)] Anatolian Geophysical, Turkey
[3)] Swedish National Road and Transport Research Institute (VTI), Sweden
[4)] Peab Asfalt AB, Sweden
[5)] University West, Sweden

16:30 **EG09 - Multichannel analysis of surface waves with continuous wavelet transform for near surface applications. (D)**
Tatsunori Ikeda*[1] and Takeshi Tsuji[1&2]
[1)] WPI-I2CNER, Kyushu University, Japan
[2)] Department of Earth Resources Engineering, Kyushu University, Japan

16:50 **EG10 - Performance of a new linear air gun array for high resolution seismic surveys in coastal SE Florida. (D)**
Cameron Walker
Walker Marine Geophysical Company, USA

17:10 **EG11 - Jet-grouting column diameter measurement using in-hole electrical resistivity tomography.** Chih-Ping Lin[1]*, Chun-Hung Lin[2], Yin Jeh Ngui[1], Haoran Wang[1], Po-Lin Wu[1], and Hsin-Chan Liu[1]
[1)] National Chiao Tung University, Taiwan
[2)] National Sun Yat-sen University, Taiwan

17:30 **EG12 - Effects of Tension-Dome Height on Surface-Wave Behavior using Numerical Seismic Modeling. (S)** Sarah L. Morton*[1], Julian Ivanov[1], Richard D. Miller[1], and Robert L. Parsons[2]
[1)] Kansas Geological Survey, USA
[2)] Department of Civil, Environmental, and Architectural Engineering, University of Kansas, USA

17:50 **EG13 - Feasibility study of karst feature detection using microgravity data inversion.** Mohamed Amrouche*[1] and Hakim Saibi[2]
[1)] Schlumberger, Tokyo, Japan
[2)] UAE University P.O. Box 15551, Al-Ain, UAE

18:10 **End of Day 1**

19:00 **Gala Dinner & Award Ceremony / Al-Muwaiji Palace**

TUESDAY, OCTOBER 22

UAE University – Crescent Building Auditorium

07:30 **Registration & Welcome Coffee**

08:25 **Welcome DAY 2 / HSE Moment**

08:30 **EG14 - Keynote Speech: How can applied geophysics have a bigger impact in helping solve society's most pressing problems?** John Bradford*, Adam Mangel, Colorado School of Mines Diego Domenzain-Gonzales, Boise State University, USA"

Crescent Building Auditorium (Panel Discussion)

The Role Of Engineering Geophysics In The Climate Change

9:00 – 10:30

Member 1: Ana Barros	**Duke University**
Member 2: Kenji Tanaka	**Kyoto University**
Member 3: Tetsuya Sumi	**Kyoto University**
Member 4: Abdullatif Al-Shuhail	**King Fahd University of Petroleum & Minerals**
Moderator: John Bradford	**Colorado School of Mines**

10:30 **Poster Session I & Coffee Break**

P01: **Characterization of sand soiling from Al Towayya, Al Ain region in United Arab Emirates (UAE). (S)** Tholkappiyan Ramachandran*, Thies Thieman, & Fathalla Hamed. Department of Physics, College of Science, United Arab Emirates University, UAE

P02: **Predicting the fate of chlorinated aliphatics by hydrogeological modelling and DCIP data – Färgaren case study.** Mikael Lumetzberger*[1], Håkan Rosqvist[2], Charlotte Sparrenbom[2], & Torleif Dahlin[1]. [1)] Engineering Geology, Lund University & COWI AB [2)] Geology Dept., Lund University

P03: **Hydrogeophysical characterization of a drainage system: Case of the Mahelma region (Southwest of Algiers)**. F. Khaldaoui*[1], A. Zoreik3, H. Hammoum[2], M. Touat[3], Z. Nemer[1], M. Djeddi [1,] K. Benhammam[1]. [1)] Laboratoire de Géophysique, FSTGAT, Algiers, Algeria [2)] Département de Génie civil, Université Mouloud Mammeri, Tizi Ouzou, Algeria [3)] African Geosystem Campany, Algiers, Algeria

P04: **Environmental assessment of trace elements in the groundwater of the UAE** D. Alshamsi, S. Hussien, N. Fadel, K. Ghareib, F. Haji, G. Latif, A. Murad, A. Aldahan UAE University, Al-Ain, UAE

P05: **Magnetic and ERT Investigations of Al Quasis Lake, Southwest of Al-Ain City, United Arab Emirates. (S) (SAW)** Fatima Al Haj*, Hakim Saibi, Amir Gabr, Haydar Baker & Khalid Al Bloushi Geology Department, College of Science, UAE University, UAE

P06: **Gravity, GPR and ERT surveys at Al-Maqam campus of United Arab Emirates University, Al-Ain, UAE. (S)** Hakim Saibi[1], Amir Gabr[1], Amar Alali[2], Eiji Ishioka[2], Akira Hoshino[2], Katsuhisa Kamishita[2] & Muhammad Fadhli*[2] [1)] Geology Department, College of Science, UAE University, UAE [2)] Akita University, Japan

TUESDAY, OCTOBER 22

Crescent Building Auditorium
Session 1: Hydrogeology & Hydrogeophysics
Session Chair: Ala Aldahan
Session Cochair: Aman Mwafy

11:00 **EG15 - Session Keynote: New Approaches for Addressing Challenges in Large-Scale Surface and Ground Water Hydrology -** Zhongbo Yu, Chuangguo Yang, Qin Ju, Huanghe Gu, Peng Yi, and Weiguang Wang State Key Laboratory of Hydrology-Water Resources and Hydraulic Engineering, Hohai University, Nanjing, China

11:20 **EG16 - Hydrogeophysical - Geophysical Mapping of An Aquiferous Zones within Gudi-Takalau Area of Birnin Kebbi Northwestern Nigeria. (S)** —Adamu Abubakar*, Sufyan Umar & Ridwan M Mohammed Federal University Birnin Kebbi, Kebbi State, Nigeria

11:40 **EG17 - Electrokinetic Geophysics for Groundwater Assessment and Complex Near-Surface Characterization. (D) -** Niels Grobbe*[1], , Sjoerd De Ridder[2], Stephanie Barde Cabusson[1], Tonian Robinson[3], Sajad Jazayeri[3], Sarah Kruse[3], Zongbo Xu[4], Larry T[4]. Otheim T[4]. and Dylan Mikesell[4],
[1)] University of Hawai‘i at Ma¯noa, USA
[2)] University of Leeds, UK
[3)] University of South Florida, USA
[4)]Boise State University, USA

12:00 **EG18 - Integrated Management of Wadi Flash Floods in Arid Environment: Forecasting, Mitigating and Water Harvesting. (I) -** Tetsuya Sumi*, Sameh Kantoush and Mohammed Saber Water Resources Research Center (WRRC), Disaster Prevention Research Institute (DPRI), Kyoto University, Japan

12:20 **EG19 - Radioactivity in groundwater of China and environmental implications. (I) -** Peng Yi* Hohai University, China

12:40 **EG20 - Estimation of 234U/238U ratio in soil around Barakah Nuclear Power Plant (NPP), UAE -** Mouza Rashid Al Rashdi*[1], Walid El Mowafi[2], Sulaiman Alaabed[3], Mohamed El Tokhi[3].
[1)] Environment Agency-AbuDhabi, Abu Dhabi, UAE
[2)] Federal Authority of Nuclear Regulation, Abu Dhabi, UAE
[3)] Geology Department, College of Science, UAEU, UAE”

13:00 **Lunch**

(S)* Student Presentation (I)* Invited Presentation (D)* Distinguished Presentation (IAF)* Innovation Award Finalist (SAW)* Student Award Winner

Crescent Building Auditorium

Session 2: Near Surface Geophysics to Improve Exploration Geophysics
Session Chair: Hitoshi Mikada
Session Cochair: Khalid Al-Bloushi

14:00 **EG21 - Optimal near surface characterization - case studies from onshore Abu Dhabi, UAE —** D. Zarubov*, P. Vasilyev, A. Glushchenko (WesternGeco Geosolutions)

14:20 **EG22 - A new approach to determine the damping ratio by multi-channel spectral analysis of seismic downhole data -** Thomas Fechner*[1] and Uta Ködel[2] [1)] Geotomographie GmbH, Neuwied, Germany Lutz Karl, Geotomographie GmbH, Neuwied, Germany [2)] Helmholtz Centre for Environmental Research - UFZ, Germany

14:40 **EG23 - SS and PP high-resolution seismic reflection applied to near surface mapping. (D) -** André J.-M. Pugin* - Geological Survey of Canada, Canada

15:00 **EG24 - Develop a Novel Ground Penetrating Radar (GPR) for deep Imaging to the Sand dunes and Weathering Layers Thickness -** Khaled F. Almutairi[1]*, Tariq A. Alkhalefah[1], and Arne V. Utsi[2] [1)] King Abdulaziz City for Science and Technology, Saudi Arabia [2)] Utsi Electronics Ltd (UtEl), Cambridge, UK

15:20 **EG25 - Non-contact measurement of river bathymetry using sUAS Radar: Recent developments and examples from the Northeastern United States** John W. Lane *[1], Jr. Cian B. Dawson [1], Eric A. White [1], Frank Engel[1], John Fulton[2]. - [1)]U.S. Geological Survey Hydrogeophysics Branch, Storrs Mansfield, CT, USA. [2)] U.S. Geological Survey Colorado Water Science Center, Denver, CO, USA

15:40 **EEG10 - New applications of up-hole seismic data in near-surface. (D) -** Gang Tian*, Yi Zhong, Xinyu Liu, Jiajun Peng - School of Earth Sciences, Zhejiang University, China

16:00 **End of Day 2**

16:30 **Departure to Dubai Mall & Burj Khalifa (Registration is required - No Fees) - Buses leave the Mall at 22:00**

WEDNESDAY, OCTOBER 23

UAE University – Crescent Building Auditorium

07:30 **Registration & Welcome Coffee**

08:25 **Welcome DAY 3 / HSE Moment**

08:30 **EEG01 - Keynote Speech: Segment selection of cultural noise recordings in urban environment to improve quality of surface-wave image.** Prof. Jianghai Xia (School of Earth Sciences, Zhejiang University, China)

WEDNESDAY, OCTOBER 23

UAE University – Crescent Building Auditorium
Session 1: Best of ICEEG
Session Chair: Rick Miller
Session Cochair: Hakim Saibi

9:00 **EEG02 - A review for cross-hole electromagnetic methods. (D).**
Sixin Liu*, Jianfu Ni, Hongqin Li, Qi Lu, Li Deng
College of Geo-Exploration Sciences and Technology, Jilin University, Changchun, China

9:20 **EEG03 - Development of Advanced Microseismic Monitoring Methods and Applications in Mining and Shale Gas Hydraulic Fracturing. (I)**
Haijiang Zhang*, Shaobo Yang, Siyu Miao, Jiawei Qian, Yukuan Chen, Ye Lin, Yuyang Tan - University of Science and Technology of China, School of Earth and Space Sciences, China

9:40 **EEG04 - Robust Wave-equation Surface-wave Skeletonized Inversion for Near-surface Environments (IAF) -** Jing Li*[1,2], Zhaofa Zeng[1], and Gerard Schuster[2] - [1)] College of geo-exploration Sci. &Tech, Jilin University, Changchun, China [2)] King Abdullah University of Science and Technology, Suadi Arabia

10:00 **EEG05 - Analysis on noise suppression effect of vibroseis vehicle in urban seismic exploration. (S) -** Hua Huang*[1], Zhong-sheng Li[1,2], Ge-hui Zheng[1], Zhong-sheng Wang[1,2], Zi-heng Yuan[1], Muhammad Idrees[1]
[1)] College of Geology Engineering and Geomatics, Chang'an University, China
[2)] Key Laboratory of Western China's Mineral Resources and Geological Engineering, Ministry of Education, China

10:20 **EEG06 - A stepped model-based layer stripping full-waveform inversion for GPR data -** Zhaofa Zeng*[1,2], Nan Huai[1,2], Jing Li[1,2]
[1)] College of Geo-Exploration Science and Technology, Jilin University.
[2)] Key Laboratory of Applied Geophysics, Jilin University, Changchun, China

10:40 **Poster Session I & Coffee Break**

P07: **Detection of Shallow Fine Geological Structure Using Small Array-2D Microtremor Profile Method, (D)** - Peifen Xu*[1] and Suqun Ling[2] [1)] Institute of Geology & Geophysics, Chinese Academy of Sciences, Beijing, China [2)] Geo-Analysis Institute Co., Ltd, Tokyo, Japan

P08: **Thermal Structure Anomalies in Eastern Abu Dhabi from Remote Sensing and Geophysics. (S)** - A.S.F. Alqasemi*[1], H. Saibi[2], A. Abuelgasim[1], A. Aldahan[2] [1)] Geography and Urban Planning Department, College of Humanities & Social Science, UAEU, UAE [2)] Geology Department, College of Science, UAEU, Al-Ain, UAE

P09: Carbon isotopes as tracers of groundwater recharge in the eastern UAE. - K. Ji*[1], S. Husein[2], X. Chen[1], P. Yi[1], L. Xiong[1], A. Aldahan[2], A. Murad[2], G. Possnert[3] [1)] State Key Laboratory of Hydrology - Water Resources and Hydraulic Engineering, Hohai University, Nanjing 210098, China [2)] Geology Department, College of Science, UAEU, Al-Ain, UAE [3)] Tandem Laboratory, Uppsala University, Uppsala, Sweden

P10: Quantitative analysis of insolation heating suppression utilizing electromagnetic scattering. - Jun Horie, Hitoshi Mikada, Junichi Takekawa Kyoto University, Japan

P11: A methodology for seismic microzonation to assess the seismic vulnerability of existing buildings using the HVSR technique , GIS and Shake - a case study from Skikda, Northeast of Algeria. - Hamidatou Mouloud*[1], Saad Lebdioui[2], Nassim Hallal[1], Belalam Faouzi[1], Abdlkrim Yelles-Chaouche[1] [1)] Research Center in Astronomy, Astrophysics and Geophysics, Algiers, Algeria. [2)] Faculty of Technology, University of August 20, 1955-Skikda, Skikda, Algeria

P12: Geological characterization of Barzaman Formation using Electrical Resistivity method, Northwest of Al Ain City, UAE. - Osman Abdelghany*, Hasan Arman, Amir Gabr, Mahmoud Abu Saima , Abdel-Rahman Fowler & Ala Aldahan Department of Geology, United Arab Emirates University, UAE

WEDNESDAY, OCTOBER 23

UAE University – Crescent Building Auditorium
Session 2: Time Lapse Monitoring & Shallow Seismic
Session Chair: John Lane
Session Cochair: Haydar Baker

11:00 **EG26 - Multiphysics Sediment Characterization and Process Monitoring. (I).** - J.C. Santamarina*, A. Garcia, F. Hakiki, J. Park, and B. Zhao King Abdullah University of Science and Technology, Saudi Arabia

11:20 **EG27 Electromagnetic reservoir monitoring with machine-learning inversion and fluid simulators. (D)** - Daniele Colombo*[1], Weichang Li[2], Ernesto Sandoval-Curiel[1] and Gary W. McNeice[1]
[1)] Geophysics Technology, EXPEC Advanced Research Center, Saudi Aramco
[2)] Aramco Research Center – Houston, Aramco Services Company, USA

11:40 **EG28 - Geophysical monitoring of waterflooding: feasibility and application.** - G. McNeice* and D. Colombo, Geophysics Technology, EXPEC Advanced Research Center, Saudi Aramco

12:00 **EG29 - Passive seismic methods for shallow and deep bedrock detection in Singapore.** - Yunyue Elita Li, Yunhuo Zhang, Enhedelihai Nilot*, and Taeseo Ku Department of Civil and Environmental Engineering, National University of Singapore, Singapore

12:20 **EG30 - Multi function distributed fiber optical sensing in several geophysics applications. (D)** - Kinzo Kishida*, Yoshiaki Yamauchi, and Ken'ichi Nishiguchi - Neubrex Co. Ltd, Kobe, Japan

12:40 **EG31 - Reliability of shear wave velocity models from surface wave methods for ground response studies. (Withdrawn)** - Sebastiano Foti* and Federico Passeri Politecnico di Torino, Torino, Italy

Crescent Building / D4

Session 3: Geotechnical/Geophysical Determination of Properties and Parameters

Session Chair: Aman Mwafy

Session Cochair: Ala Aldahan

11:00 **EG32 - Subsurface density distribution and structure of the crust of the United Arab Emirates from gravity data -** "Hakim Saibi*, Diab Bakri Hag, Mohammed Saeed Mohammed Alamri, Hamdan Abdo Ali Geology Department, College of Science, UAEU, Al-Ain, UAE"

11:20 **EG33 - Radon-222 activity of groundwater in a transect from Al Ain to Abu Dhabi, UAE -** D. Alshamsi*, S. Hussien, A. Aldahan, A. Murad Geology Department, College of Science, UAEU, U**AE**

11:40 **EG34 - Variability of uranium isotopes in groundwater along a profile from Al Ain to Dubai-** L. Xiong*[1], D. Alshamsi[2], , P. Yi[1], S. Husein[2], A. Aldahan[2], A. Murad2, & X. Hou[1]
[1)] Hohai University, China [2)] Geology Department, College of Science, UAEU, UAE

12:00 **EG35 - Identifying the extent of differential weathering in hard rocks under tank load influence zone, a case study of multichannel analysis of surface waves and seismic refraction-** Asam Farid *, Tanzeel Ur Rehman Sabir, Mahmoud K. Harb and Rashad Kilani Arab Center for Engineering Studies, Khobar, KSA

12:20 **EG36 - Geophysical investigation of underground cavity in Bimah Sinkhole, Northern Oman -** Mohammed Farfour*[1], Osman Abdellah[2], and Faisal Al-Shukaili[3]
[1)] Earth Science Dept. of Sultan Qaboos University, [2)]Water Research Center, [3)]Discover Ltd - Oman

13:00 **Lunch**

WEDNESDAY, OCTOBER 23

UAE University – Crescent Building Auditorium
Session 4: Geothermal and Hydropower as clean energy sources
Session Chair: John Bradford
Session Cochair: Jianghi Xia

14:00 **EG37 - Session Keynote: Geoelectrical monitoring of embankment dams for detection of anomalous seepage and internal erosion - experiences and work in progress in Sweden.** Torleif Dahlin, - Engineering Geology, Lund University, Sweden

14:20 **EG38 - Permanent monitoring system using continuous and controlled seismic source: Monitoring of dynamic behaviors from smaller reservoir to larger crust. (I)** Takeshi Tsuji*, Tatsunori Ikeda, - Kyushu University, Koshun Yamaoka, - Nagoya University, Japan

14:40 **EG39 - Multiple Geophysical Joint Inversion Images of Geothermal Fields. (D).** Luis A. Gallardo
CICESE, Earth Sciences Division. Carretera Tijuana-Ensenada 3918, Ensenada, Mexico

15:00 **EG40 - Short-term changes in seismic frequency response associated with shut-in of geothermal production wells. (I).** Takao Nibe and Jun Matsushima* - The University of Tokyo, Japan

15:20 **EG41 - Magnetic susceptibility variations with depth beneath Al-Ain (UAE): implications for bedrock structure control on hot spring waters circulation.** H. Saibi*[1], M. Amrouche[2], A. Fowler[1], A. Gabr[1]
[1)] Geology Department, College of Science, UAEU, UAE
[2)] Schlumberger, Tokyo, Japan

15:40 **Coffee break & Poster Sessions I & II**

WEDNESDAY, OCTOBER 23

Crescent Building Auditorium
Session 5: Best of ICEEG
Session Chair: Haydar Baker
Session Cochair: Nils Ryden

16:00 **EEG07 - The air-Earth domain decomposition algorithm: preliminary results for 2D MT modeling example. (I) -** Zhengyong Ren*, Yao Hongbo, Jingtian Tang - School of Geosciences and Info-Physics, Central South University, Changsha, China

16:20 **EEG08 - Joint Inversion of Geophysical data and Applications. (D) -** Changchun Yin*, Siyuan Sun, Yunhe Liu, Xiuyan Ren, and Cong Wang, - College of Geo-exploration Science and Technology, Jilin University, China

16:40 **EEG09 - Wave Field Decomposition and Time Shift Correction of Seismic Data Simulated by Staggered Grid Method.** Zhong-sheng Wang*[1,2], Zhong-sheng Li[1,2], Ge-hui Zheng[1], Hua Huang[1], Bin-yu Li[1], Zi-heng Yuan[1], Muhammad Idrees[1] [1)] College of Geology Engineering and Geomatics, Chang'an University, China [2)] Key Laboratory of Western China's Mineral Resources and Geological Engineering, Ministry of Education, China

17:00 **End of Day 3**

17:20 **Dinner at Al-Ain Safari Park**

THURSDAY, OCTOBER 24

UAE University – Crescent Building Auditorium

07:30 **Registration & Welcome Coffee**

08:25 **Welcome DAY 4 / HSE Moment / Field Trip**

08:30 **EG42 - Keynote Speech: Recent technological developments in integrated near surface geophysical surveys with the application of wave theories.** Hitoshi Mikada, Kyoto University, Japan

UAE University – Crescent Building Auditorium

Session 1: Advanced Geophysical Tomographic Methods & AI in Near Surface Characterization

Session Chair: Chih-Ping Lin

Session Cochair: Hakim Saibi

9:00 **EG43 - Considering azimuthal variations: evolution of a seismic workflow, onshore Abu Dhabi.** C. Smith*, P. Vasilyev, A. Glushchenko, C. Roig (WesternGeco Geosolutions)

9:20 **EG44 - The value of distributed acoustic sensing (das) for urban geophysics: measurements from the kafadar geophysical laboratory. (I)** Bin Luo[1], Whitney Trainor-Guitton*[1], Ebru Bozdag[1], and Lisa LaFlame[2], Martin Karrenbach[2], Steve Cole[2] [1)]Colorado School of Mines, USA [2)] Optasense, USA

9:40 **EG45 - Scalable Seismic Acquisition and Algorithms for Next Generation Engineering Geophysics. (I) -** Eileen R. Martin*, Virginia Tech

10:00 **EG46 - Analysis of urban growth and sprawl of Musaffah industrial zone (Abu Dhabi) since its establishment in 1984 until today: A Remote Sensing and Geographical Information Systems' based study.** Salem Issa*, Wadha Alshamsi, and Nazmi Saleous, - United Arab Emirates University, UAE.

10:20 **EG47 - Applications of guided borehole radar waves.(D)** Binzhong Zhou CSIRO Energy, PO Box 883, Kenmore, QLD 4069, Australia

10:40 **EG48 - Cavity Auto-detection Using Machine Learning Algorithms: Logistic Regression, Support Vector Machine, and Naïve Bayes** Hakim Saibi[1],*, Abdelkader Nasreddine Belkacem[2], Mohamed Amrouche[3]
[1)]Geology Department, College of Science, UAEU, Al-Ain, UAE
[2)]Department of Computer & Network Engineering, CIT, UAEU, UAE
[3)]Schlumberger, Tokyo, Japan

11:00 **Coffee Break**

(S)* Student Presentation (I)* Invited Presentation (D)* Distinguished Presentation (IAF)* Innovation Award Finalist (SAW)* Student Award Winner

Crescent Building Auditorium

Session 2: Method Integration, Innovative Approaches, & Joint Inversion

Session Chair: Steve Sloan

Session Cochair: Christopher Leech

11:20 **EG49 - Joint Wavefield Inversion: A software platform for multi-physics data integration problems. (D)** - Daniele Colombo*[1], Diego Rovetta[2], Taqi Al-Yousuf[1], Ernesto Sandoval[1], Ersan Turkoglu[1], and Gary McNeice[1]
[1)] Geophysics Technology, EXPEC Advanced Research Center, Saudi Aramco
[2)] Aramco Research Center, Delft, Aramco Overseas Company, The Netherlands

11:40 **EG50 - Ultrasonic dynamic elastic constants of carbonate rocks -** Hasan Arman - Department of Geology, United Arab Emirates University, UAE

12:00 **EG51 - Hydro-geophysical investigations of the artificial and natural dumped water sources on the groundwater regime and its possible impacts on the residential areas, located at the southwestern part of Hafeet Mountain, Al Ain, UAE -** Saber Hussein*, Amir Gabr, Ahmed Murad, and Hasan Arman - Department of Geology, United Arab Emirates University, UAE

12:20 **EG52 - The deep crustal structure of the c. 1080 Ma Warakurna LIP, and insights on its processes and mineralisation: Results of 3D gravity inversion. (D) -** Abdulrhman Alghamdi*[1,2], Alan Aitken[1], Michael Dentith[1]
[1)] Centre for Exploration Targeting, University of Western Australia, Australia.
[2)] King Abdulaziz City for Science and Technology, Saudi Arabia

12:40 **EG53 - ERT-DC & TEM resistivities integration (tasty with two different flavors!): a case study on groundwater exploration, western Saudi Arabia.** M. Al Jadani*[1], M.V. Sharlov[2], Y.A. Agafonov[2], I.V. Buddo[2], & T. Yuan[3] [1)] AlJazeerah Geoservices [2)] Sigma-Geo [3)] Geomative

13:00 **Lunch**

THURSDAY, OCTOBER 24

UAE University – Crescent Building Auditorium
Session 3: Geohazards
Session Chair: Khalid Al-Bloushi
Session Cochair:Hitoshi Mikada

14:00 **EG54 - Hydrological Study and Flood Protection Measures for the Northern Emirates.** Salwa Mubarak Thani*, Aishah Abdulla Alyammahi - Ministry of Energy & Industry -UAE

14:20 **EG55 - Geophysical investigation using MASW method for geo-hazards under load influence zone of the proposed water storage tanks, a case study from Saudi Arabia.** - Tanzeel Ur Rehman Sabir *, Asam Farid, Mahmoud K. Harb and Rashad Kilani, - Arab Center for Engineering Studies, Khobar, Saudi Arabia

14:40 **EG56 - Teleseismic source inversion of the September 10, 2008 Qeshm Island (Iran) Earthquake (MW=6.0) in the Arabian Gulf.** - Murat UTKUCU*[1], Serap KIZILBUĞA[2], & Hasan ARMAN[3] - [1)] Sakarya University Disaster Management Application & Research Center, Sakarya, Turkey [2)] Sakarya University, Engineering Faculty, Dept of Geophysics, Sakarya, Turkey [3)] UAE University, College of Science, Department of Geology, UAE

15:00 **EG57 - Changes in extreme rainfall in arid and semi-arid region projected by super high resolution AGCM. (I)** - Kenji Tanaka*, Habiba Omar and Shigenobu Tanaka - Kyoto University, Disaster Prevention Research Institute, Gokasho Uji, Japan"

15:20 **EG58 - Interferometric synthetic aperture RADAR (InSAR) and GIS approaches for the retrieval of surface displacement of fault zones in the UAE: Dibba, Wadi Ham and Wadi Shimal, 1992- 2018**.
Nazmi Saleous, Abdulla Alobeidli*, and Salem M. Issa - United Arab Emirates University, UAE

15:40 **EG59 - Seismic performance assessment of structures in the UAE under far-field earthquakes using shake table testing and numerical simulation.**
- Aman Mwafy*, Aya Abuelhamd and Amr Sweedan - Civil and Environmental Engineering Department, United Arab Emirates University, UAE

16:00 **EG60- A GIS based cost effective evacuation solution to reduce flash flood disaster losses in Fujairah, United Arab Emirates.** - Salem Issa*, Sumayya Al Khanbouli and Nazmi Saleous - United Arab Emirates University, UAE

16:20 **EG61 - 2D imaging for human target detection with MIMO through-wall radar. (S) (SAW) .** Zhipeng Hu*, Zhaofa Zeng, Jing Li, Ling Zhang & Kun Wang - College of Geo-exploration Science and Technology, Jilin University, China

16:40 **End of Day 4 & Closing Cremony**

(S)* Student Presentation (I)* Invited Presentation (D)* Distinguished Presentation (IAF)* Innovation Award Finalist (SAW)* Student Award Winner