



International Geomechanics Conference IGS 2024: Convergence of Global Experts to Drive Energy Transition Innovations

PETRONAS is honoured to host the renowned International Geomechanics Conference outside the Middle East for the first time from 18 – 20 November 2024 as part of its commitment to advancing geomechanics and reinforcing its role as a key player in the global energy transition. This conference focused on the pivotal role of geomechanics for sustainability and energy efficiency and is a testament to the importance of international collaboration and dialogues, and harnessing the power of geomechanics to drive our industry towards a more sustainable future. The vibrant event brought together many of the leading geomechanics experts and practitioners and the young and upcoming geomechanicists from across the globe.



For the first time, there are 10 prestigious societies organising the conference including American Rock Mechanics Association (ARMA), Dhahran Geoscience Society (DGS), Society of Exploration Geophysicists (SEG), American Association of Petroleum Geologists (AAPG), Society of Petroleum Engineers (SPE), Society of Petrophysicists and Well Log Analysts (SPWLA), China Society of Rock Mechanics and Engineering (CSRME), European Association of Geoscientists and Engineers (EAGE), Malaysian Oil, Gas & Energy Services Council (MOGSC), and Singapore Society for Rock Mechanics & Engineering Geology (SRMEG).



There are a record-breaking 456 abstract submissions from 143 organisations in 40 countries of which 197 abstracts were accepted with 108 published manuscripts for the conference. A total of diverse 278 delegates representing 110 organisations from 34 countries took part at the conference, which covers a wide range of topics, including geomechanics applications in energy storage, carbon capture and storage, geothermal energy, latest know-hows in rock characterisation, geomechanics measurements, data analytics, geotechnics and emerging mining rock mechanics.



Encik Izwan Ismail, PETRONAS Vice President of Group Technology & Commercialisation, Project Delivery & Technology in his opening address highlighted the workflow and methodology of the flagship Kasawari M1 Carbon Capture and Storage (CCS) Project have led to several completed and on-going CCS projects in various regions across Malaysia. In addition, he acknowledged the importance of geomechanics in mitigating risks during the exploration and evaluation of natural hydrogen, and in designing safe and sustainable methods for exploiting critical energy transition minerals.

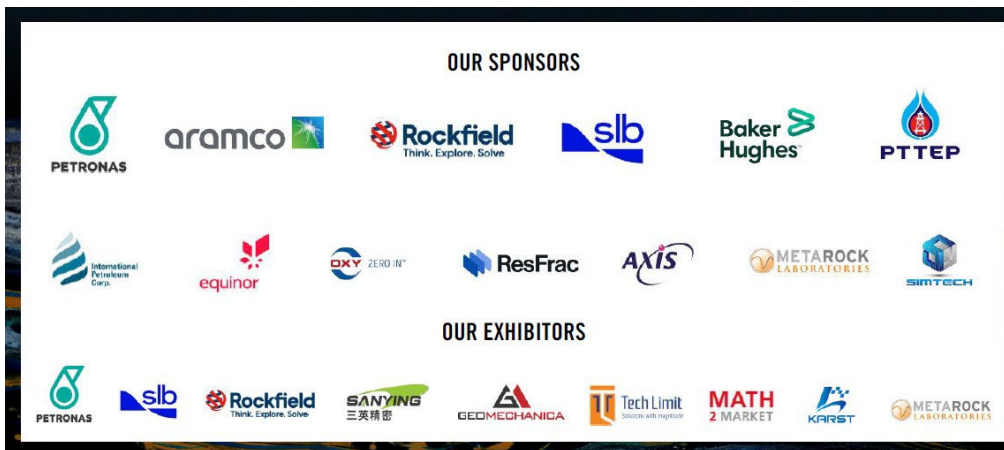


The first day of the conference featured a robust programme that included three exclusive training sessions with ARMA Fellows and the Presidents Panel featuring presidents and leaders of the 10 organising societies who shared their society roles and efforts in energy sustainability and adapting to the new challenges. The technical presentations on this day covered cutting-edge research on sustainable solutions in petroleum, geothermal energy, carbon capture and storage, and hydrogen in 3 oral and 4 poster sessions, and a special session showcasing China Rock Mechanics and Geomechanics.

The second day continued with a stellar line-up of speakers discussing the integration of geomechanics in CCS, wellbore stability, hydraulic fracturing, and other crucial risk management methods in energy exploration in 9 oral and 8 poster sessions. The highlights also include the inaugural student presentation contest, showcasing the talents of young minds striving to become future leaders in the industry.



The final day of the conference delved into topics such as subsurface hydrogen and energy storage, well integrity for CCS, rock mechanical characterisation, digital rock and emerging mining rock mechanics in 9 oral and 8 poster sessions, and a special session on Geomechanics for Deep Space Exploration leaving attendees with valuable insights and a sense of optimism for the future.



The conference attracted the largest number of sponsors and exhibitors. The generous sponsorships from 13 sponsors and supports from 9 exhibitors enabled the execution and running of the activities in the conference including the Student Sponsorship Programme which supports 16 students to attend the Conference from all over the world.

The conference participants also attended the Education Workstream Forum held at the state-of-the-art PETRONAS Leadership Centre. The 8 panellists are senior academicians from high profile universities in Malaysia, China, South Korea, Europe, Canada, USA and Brazil, and a Senior Manager from PETRONAS Carbon Management Division. They shared their insightful views on “Collaborative Strategies: The Role of Industry-Academia Partnerships Advancing Net Zero Carbon Emissions and Meeting Sustainable Clean Energy Demand”.



Outside the technical realm, the participants enjoyed cultural activities, exploring landmarks like Batu Caves and PETRONAS Twin Towers Skybridge and Observation Deck. Batu Caves feature a series of limestone caves housing the 43-metre statue of Hindu god Murugan which is one of the largest in the world, and the 272 colorful steps leading up to the Temple Cave.

The grand Gala Dinner showcased traditional multi-cultural “Muhibbah” local cuisine and cultural performances



augmented with Malaysian warm hospitality, fostering camaraderie among attendees.

The Annual IGS Fun Run was held at the picturesque KLCC Park behind the PETRONAS Twin Towers which was culminated with the first time-ever dawn lighting of the Towers specially for the run.



Moving forward from this highly successful conference, IGS will return to her home, Saudi Arabia on 17 – 20 November 2025 with its continuing commitment to collaboration, knowledge sharing and advancement, and pivotal role of geomechanics to drive our industry toward a more sustainable energy future.