



Universiti Tenaga Nasional, Malaysia

Research & Innovation

From Research to Reality

NEC
NATIONAL ENERGY CENTRE 2022

Issue 2 · May 2026

Engage with UNITEN Research & Innovation



We are pleased to share Issue 2 of the UNITEN Research & Innovation Newsletter, highlighting recent strategic partnerships, national and international collaborations, research achievements, and innovation products from across the UNITEN research community. To learn more about Universiti Tenaga Nasional (UNITEN), please visit www.uniten.edu.my.

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STRATEGIC PARTNERSHIP

Advancing Future Grids and Energy Transition

UNITEN Deepens Strategic Research Framework with TNB Research



Universiti Tenaga Nasional (UNITEN) has further reinforced its long-standing relationship with TNB Research Sdn. Bhd. (TNBR) through a newly formalised collaboration framework, officially signed on 22 April 2026 at the National Energy Centre (NEC), UNITEN. This landmark agreement marks a decisive step forward in joint efforts to advance future grid systems and energy transition technologies, reflecting both organisations' shared commitment to sustainable innovation and national development in the energy sector.

The partnership focuses on high-impact areas, including:

- › Joint research initiatives, knowledge exchange, and active cross-institutional researcher involvement
- › Postgraduate development through co-supervision of Master's and PhD projects, collaborative publications, and shared use of research facilities

The agreement was signed on behalf of UNITEN by Vice-Chancellor Professor Ir. Dr. Khairul Salleh Mohamed Sahari, in the presence of Deputy Vice-Chancellor (Research & Innovation) Professor Ir. Dr. Vigna Kumaran a/l Ramachandaramurthy. TNB Research was represented by Managing Director Dato' Ts. Dr. Mohd Zamri Yusoff, with the signing witnessed by Research Director (Power Delivery & Innovation Research) Ir. Dr. Sheikh Kamar Sheikh Abdullah.



International Energy Collaboration

Energising the Future: UNITEN Initiates Strategic Energy Collaboration with the Republic of Sudan



UNITEN hosted an official visit from the Embassy of the Republic of Sudan, led by His Excellency (H.E.) Hassan Abdelsalam Omer, Ambassador of the Republic of Sudan to Malaysia, at NEC, UNITEN on 22 April 2026. Representatives from the Sudan Military Industry Corporation (MIC) were also in attendance.

The UNITEN delegation was led by Vice-Chancellor Prof. Ir. Dr. Khairul Salleh Mohamed Sahari, together with the university's senior leadership. The primary objective was to explore opportunities for commercial projects and research cooperation in renewable and green energy, spanning both military and civilian sectors in Sudan.

This high-level visit strengthens UNITEN's international engagement in energy research and education through the National Energy Centre (NEC), UNITEN.



INDUSTRY COLLABORATION

Hydrogen, Robotics and Immersive Research

UNITEN, through NEC, Explores Strategic Collaboration with DreamEDGE and Bosch in Hydrogen, Robotics and VR



In a significant step forward for UNITEN's research ecosystem, a high-level meeting with DreamEDGE and Bosch explored three strategic areas of collaboration, spanning emerging technologies in hydrogen mobility, intelligent systems, and immersive research environments.

As a key next step, research teams from all parties will engage in detailed discussions to further advance this collaboration.

RESEARCH FUNDING

International Research Funding Opportunities

UNITEN Explores Research Funding Opportunities with RMIT University



UNITEN continues to strengthen its international research engagement through a productive discussion with RMIT University, Australia. The engagement explored potential research matching opportunities that align with UNITEN's research strengths and future direction.

This engagement opens the door to potential internationally co-funded projects with the capacity to deliver meaningful real-world impact, while further enhancing UNITEN's global research profile.

ACHIEVEMENTS & RECOGNITION

UNITEN Academics Elected as Fellows of the Academy of Sciences Malaysia 2026

UNITEN celebrates a remarkable dual achievement as two of its distinguished academics were elected as Fellows of the Academy of Sciences Malaysia (ASM) 2026 in the Engineering Science Discipline, during the 31st ASM Annual General Meeting on 25 April 2026. These recognitions are a powerful affirmation of UNITEN's commitment to research excellence and its standing as a globally competitive, energy-focused university.

ASM FELLOW 2026

Prof. Ir. Dr. Vigna Kumaran a/l Ramachandramurthy

**Deputy Vice-Chancellor
(Research & Innovation), UNITEN**



His appointment recognises his profound contributions to research excellence and his pivotal role in driving innovation at UNITEN. This is a true testament to the potential within our research community.

Prof. Ir. Ts. Dr. Tiong Sieh Kiong

Dean, College of Graduate Studies, UNITEN



A well-deserved recognition of his academic leadership and extraordinary contributions to engineering science. His work stands as a profound inspiration driving UNITEN forward in its mission to lead on the global stage.

Bridging Policy, Industry and Research

Hydrogen Workshop Series 2: Bridging Policy, Industry and Research for Green Hydrogen Deployment



Organised by the Institute of Sustainable Energy (ISE), UNITEN, and funded by UNITEN R&D Sdn. Bhd. (URND) and the Akaun Amanah Industri Bekalan Elektrik (AAIBE) Chair of Renewable Energy, the Hydrogen Workshop Series 2: Realising Green Hydrogen Under HETR (Hydrogen Economy and Technology Roadmap): Bridging Policy, Industry and Research for Early-Stage Deployment was successfully held on 6 May 2026 at Le Méridien Hotel, Putrajaya.

The workshop was officially opened by Yang Berusaha Puan Norsham binti Abdul Latip, Deputy Secretary General (Technology Development), Ministry of Science, Technology and Innovation (MOSTI). The programme featured keynote sessions by Dr. Ng Sing Muk from Sarawak Energy Berhad and Assoc. Prof. Dr. Rozan Mohamad Yunus from the Fuel Cell Institute, Universiti Kebangsaan Malaysia (UKM), followed by a forum panel moderated by Prof. Dato' ChM. Dr. Mohammad Kassim, with representatives from Sustainable Energy Development Authority (SEDA) Malaysia, Universiti Teknologi Malaysia (UTM), and TNB Research.

Participants from government agencies, industry, and academia came together, including MOSTI, NanoMalaysia, MIGHT, NANOTEC, SEDA Malaysia, TNB, PETRONAS, Hydrexia, Sarawak Energy Berhad (SEB), Sarawak Economic Development Corporation (SEDC), UNITEN, UKM, UTM, Universiti Malaya (UM), and Sunway University, for high-level discussions on policy, standards, R&D-to-industry gaps, talent development, and cross-sector collaboration.



GLOBAL RECOGNITION

Fulbright Malaysian Scholar Award

UNITEN Academic Earns Fulbright Malaysian Scholar Award at George Washington University



Prof. Dr. Hanim Salleh, CEng, FIMechE, was awarded the prestigious Fulbright Malaysian Scholar Program (Oct 2025–Mar 2026), hosted by the Program on Skills, Credentials, and Workforce Policy (PSCWP) at the Institute of Public Policy, George Washington University, United States.

Her research focused on "Quality Assurance Frameworks for Integrating Non-Degree Credentials into the Curriculum: Malaysia and United States Case Studies," exploring how micro-credentials and professional certificates can be embedded into degree programmes while maintaining academic quality and workforce relevance. She engaged with the Non-Degree Credentials Research Network (NCRN) and met with Congressman Burgess Owens, Chair of the Subcommittee on Higher Education and Workforce Development.

Her findings have been shared with UNITEN, NCRN, MQA, MAGNETIC, and the PERINTIS Public Forum, reaffirming UNITEN's standing in global academic collaboration and quality advancement in higher education.

National Disaster Risk Reduction Geotechnology Laboratory

IEI-UNITEN Launches National Disaster Risk Reduction Geotechnology Laboratory



The Institute of Energy Infrastructure (IEI), UNITEN has officially launched the IEI-UNITEN HICoE DRR Geotechnology Laboratory, Malaysia's first Higher Institution Centre of Excellence (HICoE) dedicated to Disaster Risk Reduction (DRR) geotechnology. Housed at the National Energy Centre (NEC), UNITEN in Kajang, the laboratory marks a decisive step from traditional academic research into real-world, industry-serving solutions.

The launch was formalised through the signing of a Strategic Partnership Agreement (SPA) between UNITEN R&D Sdn. Bhd. (URND), UNITEN, and Geo Mapping Technology Sdn. Bhd. (GMT), witnessed under the auspices of the Ministry of Higher Education. The tri-party collaboration underpins a five-year commercialisation roadmap, positioning the laboratory as a fully self-sustaining national technical reference centre by 2030.

The laboratory offers advanced geotechnical testing, Terrestrial Laser Scanning (TLS), Ground Penetrating Radar (GPR), landslide and slope risk assessments, flood vulnerability modelling, and proprietary Geo-Visionary 3D terrain mapping. Two flagship innovations include Vegegrout (bio-based ground stabilisation) and the Intelligent Monitoring and Reporting System (IMRS), both commercial-ready and set for national and ASEAN deployment.

LEADERSHIP APPOINTMENT

New Director at the Institute of Power Engineering

LEADERSHIP APPOINTMENT



Prof. Ir. Dr. Agileswari A/P Ramasamy

Director, Institute of Power Engineering (IPE)

Effective 4 May 2026

UNITEN is pleased to announce the appointment of Prof. Ir. Dr. Agileswari A/P Ramasamy as the new Director of the Institute of Power Engineering (IPE), UNITEN, effective 4 May 2026.

Prof. Ir. Dr. Agileswari brings extensive expertise in power engineering, strong leadership experience, and a distinguished research track record. Her appointment marks a significant step forward in IPE's mission to advance power engineering research, innovation, and industry collaboration.

We warmly congratulate Prof. Ir. Dr. Agileswari on this well-deserved appointment and look forward to the new chapter she will lead for IPE, UNITEN.

INNOVATION IN ACTION

Research Translated into Real-World Solutions

UNITEN R&D Sdn. Bhd. (URND) continues to translate cutting-edge research into impactful, deployable innovations for industry and society.

SAFETY · ENERGY

FlashEscape

Circuit Breaker Extractor



A locally developed “1-Fits-All” automated system by URND, engineered for the safe extraction and insertion of high-voltage circuit breakers in live switchgear environments, eliminating manual handling risks and protecting field personnel from arc flash hazards.

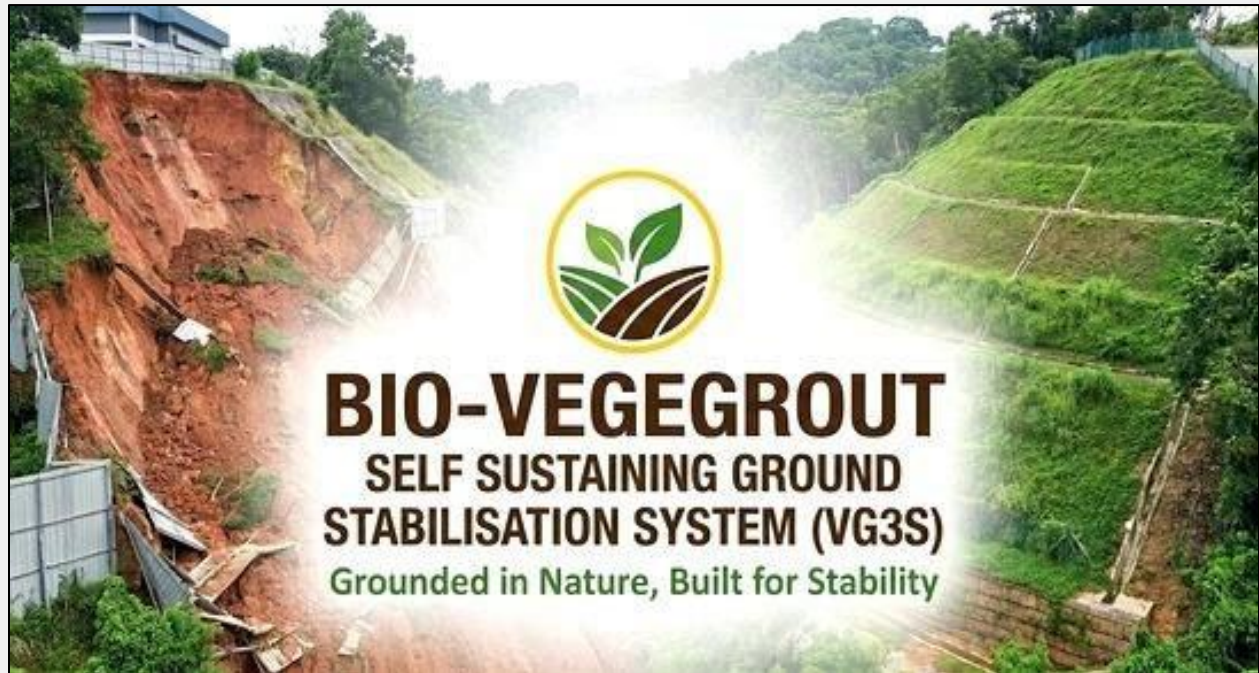
- › Zero manual contact during high-risk live switchgear operations
- › Prevents arc flash accidents and protects field personnel
- › Compatible with multiple circuit breaker types and configurations
- › Reduces unplanned downtime and improves operational efficiency
- › Developed and validated by UNITEN R&D Sdn. Bhd. (URND)

Inventors:

Professor Ir. Dr. Farrukh Hafiz Nagi & Ts. Dr. Nur Azzammudin Bin Rahmat

Bio-VegeGrout (VG3S)

Self-Sustaining Ground Stabilisation System



A nature-based geotechnical innovation integrating biotechnology, geotechnical engineering, and environmental sustainability to deliver climate-resilient slope and soil stabilisation solutions ready for national and regional deployment.

- › Microbial-Induced Calcite Precipitation (MICP) for bio-based soil strengthening
- › Field-proven on Malaysian slopes, effective against landslides and erosion
- › Eco-friendly alternative to conventional chemical grouting
- › Self-sustaining vegetation growth promotes long-term slope resilience
- › Commercialisation-ready for ASEAN markets via URND

Inventor: Assoc. Prof. P. Geol. Gs. Ts. Dr. Rohayu Binti Che Omar

ACADEMIC EXCELLENCE

UNITEN Journals: Platforms for Scholarly Research and Publication

UNITEN publishes peer-reviewed journals that support scholarly work across energy, engineering, computing, business, education, sustainability, and interdisciplinary fields. We warmly invite researchers, academics, industry experts, and practitioners to submit their work.

OPEN ACCESS · NO APC · COLLEGE OF ENGINEERING

JESE · Journal of Energy & Sustainable Environment

JESE · Universiti Tenaga Nasional (UNITEN)

A peer-reviewed academic journal advancing knowledge and disseminating innovative research in energy, environment, and sustainability. Indexed on Google Scholar.

Scope: Electrical Engineering & Power Systems | Mechanical Engineering, Advanced Materials & Thermofluids | Civil Engineering & Sustainable Infrastructure | Engineering Management & Policy

Submission deadline: May 2026 | **Acceptance notification:** June 2026 | **Publication date:** August 2026

Editor-in-Chief: Assoc. Prof. Dr. Halina Misran | **Email:** Halina@uniten.edu.my

Website: journal.uniten.edu.my/index.php/jese/about

[Submit to JESE](#) >

OPEN ACCESS · NO APC · COLLEGE OF COMPUTING & INFORMATICS

JCSI · Journal of Computational Systems & Informatics

JCSI · Volume 1, Issue 1 · Universiti Tenaga Nasional (UNITEN)

A brand-new open-access journal by CCI, UNITEN, covering computing, intelligent systems, and digital infrastructure across engineering, technology, and data science domains.

Selected topics include: Artificial Intelligence | Information Systems | IoT & Smart Technology | Cybersecurity | Cloud Computing | Energy Informatics | Data Science & Analytics | Blockchain Technology

Full paper deadline: 10 June 2026 | **Acceptance notification:** 1 July 2026 | **Publication:** End July 2026

Editor-in-Chief: Ts. Dr. Mohd Hazli Mohamed Zabil | **Email:** hazli@uniten.edu.my

Website: journal.uniten.edu.my

[Submit to JCSI](#) >

OPEN ACCESS · COLLEGE OF CONTINUING EDUCATION (CCED) & CAFEL

JIIE · Journal of Innovative and Interdisciplinary Education

JIIE · Universiti Tenaga Nasional (UNITEN)

A scholarly platform promoting innovative and interdisciplinary perspectives in education. JIIE welcomes work that bridges innovation, interdisciplinarity, and education across diverse fields and contexts.

Scope & areas of interest: Education | Social Sciences | Humanities | Languages & Linguistics | Liberal Arts | Related Interdisciplinary Fields

Submission deadline: 10 June 2026 | **Acceptance notification:** 1 July 2026 | **Publication:** End of July 2026

Editor-in-Chief: Dr Chong Seng Tong | **Email:** stchong@uniten.edu.my

Associate Editors-in-Chief: Ts. Dr. Jehana Ermy Binti Jamaluddin; Dr Vivian Yee Chiew Ling

Website: journal.uniten.edu.my/index.php/jedi/index

[Submit to JIIE >](#)

OPEN ACCESS · UNITEN BUSINESS SCHOOL (UBS)

IJBM · International Journal of Business Management

IJBM · Vol. 9 · Universiti Tenaga Nasional (UNITEN)

A UNITEN journal covering a broad range of business and management disciplines, including accounting, finance, marketing, entrepreneurship, business analytics, governance, sustainability, and technology management.

Selected topics include: Accounting & Finance | International Business | Marketing | Entrepreneurship & Innovation | Business Analytics | Corporate Governance | Energy Sustainability | Strategic & Technology Management | HRM | Educational & Liberal Studies

Vol. 9, No. 2 deadline: 31 August 2026

Managing Editor: Dr. Elinda Esa | **Email:** elinda@uniten.edu.my

Website: journal.uniten.edu.my/index.php/ijbm

[Submit to IJBM >](#)

POSTGRADUATE OPPORTUNITIES

Advance Your Research Career at UNITEN

UNITEN's College of Graduate Studies offers research-intensive postgraduate programmes designed to shape the next generation of innovators and thought leaders. Behind every programme is a team of accomplished academics, industry-experienced researchers, and internationally recognised experts, ready to supervise, mentor, and guide you at every step of your research journey. If you are passionate about advancing knowledge and driving real-world impact, a Master by Research or Doctor of Philosophy (PhD) at UNITEN is your pathway forward.

Master by Research Conduct original research with expert supervision across engineering, technology, computing, business, and sustainability.

Doctor of Philosophy (PhD) Push the boundaries of knowledge in a vibrant research environment with strong industry linkages.

UNITEN Research & Innovation

Advancing research. Creating impact. Turning ideas into reality.

UNITEN · Jalan IKRAM-UNITEN · 43000 Kajang · Selangor Darul Ehsan · Malaysia
research@uniten.edu.my