

IVAT Newsletter

ISSN 2289-6988

ISSUE 13

JUNE 2026

IVAT

is the abbreviated name for the Institute of High Voltage and High Current, or in Malay, Institut Voltan dan Arus Tinggi – a Centre of Excellence of Universiti Teknologi Malaysia (UTM).



INSIDE THIS ISSUE

Page 2
IVAT Director's Remarks

Page 4
Academic Colloquium

Page 6
Research Collaboration

Page 7
Students Defend PhD Theses

Page 8
Knowledge Transfer programme

Page 12
Magnetic Field Interference

Page 14
Research Networking

Page 16
IVAT Appreciation

IVAT Strengthens Laboratory Competencies in Measurement Uncertainties



Group photo of participants with trainer (sitting fourth from left)

JOHOR BAHRU, 23 June 2026 – IVAT successfully organised a two-day short course titled “MS ISO/IEC 17025:2017 – Measurement Uncertainty for Calibration and Testing Laboratory” on 22–23 June 2026 at IVAT

Seminar Room, Universiti Teknologi Malaysia (UTM), Johor Bahru. The programme was attended by 29 participants, comprising IVAT staff and representatives from industry, as part of a
(continued on page 3...)

IVAT Appreciates Staff Commitment



Group photo of IVAT Family

PORT DICKSON, 25 January 2026 – IVAT created a wonderful memory for its staff by hosting the IVAT Family Day 2026 at Lexis Port Dickson, Negeri Sembilan. The meaningful event was organised specifically to celebrate and express appreciation for the com-

mitment and hard work of all IVAT's staff members who strove to ensure the success of IVAT's various agendas and achievements throughout 2025. The event also served as a platform to strengthen bonds among staff
(continued on page 5...)

IVAT Director’s Remarks



Ts. Dr. Zulkurnain Ahmad Noorden, Director, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

Welcome to the 2026 edition of the IVAT Newsletter. As we reflect on the journey of IVAT over the past year, I am proud of the resilience, synergy, and dedication demonstrated by our entire team.

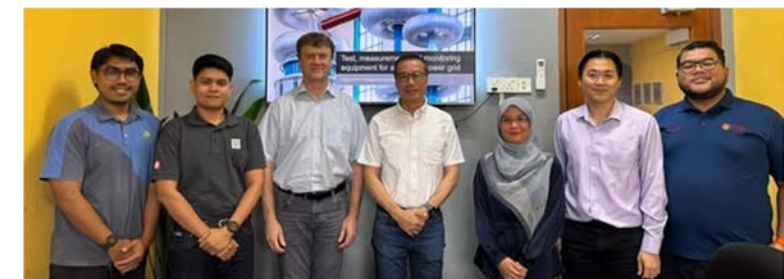
As the demands on sustainable power engineering continue to evolve, IVAT remains at the forefront of innovation, ensuring that our research, consultancy, and laboratory services meet the highest international standards. IVAT continues to serve our industry partners through our accredited calibration and testing activities. Our researchers have also actively demonstrated our cutting-edge research and innovation at various events, including the “Research Networking: Connect and Collaborate” and “Electrical Engineering Showcase 2026”

events. Meanwhile, our active participation in the SolarEd, Solar Spark, and ROBORIMBA programmes highlights our continuous engagement with our local community.

Over the past year, we celebrated many successes, including the graduation of our Doctoral students and the promotion of our staff member to Associate Professor. We also celebrated the retirement of our former Director Prof. Dr. Zulkurnain Abdul Malek, who has been instrumental in shaping IVAT. We welcomed the addition of Ms. Nur Zulaikha Abu Talib as our newest member. On a solemn note, we deeply mourn the passing of Mr. Hairoisyam Abd. Rani, whose contributions and presence will always be remembered.

None of our milestones would have been achievable without the relentless commitment of the IVAT family. Moving forward, we will continue to champion sustainable excellence through integrity and synergy.

Technical Visit from HIGHVOLT



Group photo

JOHOR BAHRU, 16 April 2026 – IVAT had the privilege of welcoming representatives from HIGHVOLT for a technical visit and professional engagement. The visit served as an excellent opportunity to strengthen the relationship between academia and industry while fostering meaningful discussions on current developments, technological advancements, and emerging challenges in the field of high voltage engineering.

The programme provided a valuable platform for the exchange of technical knowledge and expertise, allowing both parties to share their perspectives on high voltage testing technologies, engineering applications and future opportunities for collaboration. Through constructive discussions, participants explored areas of mutual interest that have the potential to support research, professional training, and the continued development of industry relevant competencies.

The visiting delegation were Mr. Volker Schmidt, Department Head, Customer Support, HIGHVOLT Prüftechnik Dresden GmbH and Mr. Azib Azri Alias, HV Service Engineer, Reinhausen Asia Pacific Sdn. Bhd. Meanwhile IVAT was represented by Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew and Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad.

IVAT sincerely appreciates the time and valuable insights shared by the HIGHVOLT delegation during the visit. Such engagements play an important role in strengthening partnerships between academia and industry, promoting knowledge transfer and supporting innovation in high voltage engineering. We look forward to expanding this collaboration through future initiatives in research, technical training and professional development for the benefit of both organisations and the wider engineering community.

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

Editorial Board

Advisers:

Prof. Dr. Zulkurnain Abdul Malek
Ts. Dr. Zulkurnain Ahmad Noorden

Editor-in-Chief:

Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew

Editors:

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad
Ir. Ts. Dr. Aizat Azmi

Contributors:

Assoc. Prof. Ir. Ts. Dr. Mohd Hafizi Ahmad
Ts. Dr. Mona Riza Mohd Esa
Dr. Mohd Fadli Rahmat
Dr. Noor Syazwani Mansor
Dr. Norhafezaidi Mat Saman
Dr. Nur Aqilah Mohammad
Dr. Zuraimy Adzis
Mr. Abd. Mohsin Abd. Razak
Mr. Abdul Syafiq Abdullah Shuhaimi
Mr. Mohamad Syahrin Mohamad
Mr. Mohd Azrul Othman
Mr. Mohd Nazren Mohd Ghazali
Mr. Zamri Kassim
Ms. Norhidayu Bakrin
Ms. Nor Eliyana Mazlan
Ms. Nur Zulaikha Abu Talib

Malaysia and Vietnam Postgraduate and Undergraduate Colloquium Strengthen Academic Collaboration



Group photo

HO CHI MINH CITY, 8 August 2025 – The Academic Synergy: Malaysia and Vietnam Postgraduate and Undergraduate Colloquium 2025 was successfully held in Ho Chi Minh City, Vietnam, from 4 to 8 August 2025, bringing together academics and students from Malaysia and Vietnam to promote knowledge exchange, research networking and international academic collaboration.

Four staff members from IVAT, namely, Ir. Ts. Dr. Noor Azlinda Ahmad, Dr. Noor Syazwani Mansor, Dr. Nur Aqilah Mohammad, and Mr. Abdul Syafiq Abdullah Shuhaimi participated in the programme, representing Universiti Teknologi Malaysia (UTM) in the international academic initiative. The participation provided an important platform for IVAT’s postgraduate students to engage with academics, researchers and students from Ho Chi Minh City University of Technology (HCMUT) and to explore opportunities for future collaboration in electrical engineering, postgraduate education and research.

The colloquium featured academic presentations and knowledge-sharing sessions involving postgraduate and undergraduate students. The programme provided participants with opportunities to present their research and academic projects, exchange ideas and receive feedback from researchers and academics from both institutions. Discussions covered potential areas of mutual interest, particularly in electrical engineering, high-voltage engineering, energy systems, advanced materials and emerging technologies.

One of the significant outcomes of the programme was the opportunity to further strengthen the relationship between the Faculty of Electrical Engineering, UTM and HCMUT. The engagement created a platform for both institutions to identify potential areas for future collaboration, including joint research activities, academic exchanges, student mobility, postgraduate supervision, collaborative publications, seminars and other international academic programmes.

Dr. Noor Syazwani Mansor, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

IVAT Committed to MS ISO/IEC 17025

(... continued from page 1)

continuous effort to enhance competencies in laboratory quality management and technical compliance with the MS ISO/IEC 17025:2017 Standard.

The course was conducted by Dr. Wan Abd Malik Wan Mohamed, Director/Owner of DHG Metrology Sdn. Bhd., who shared his expertise in measurement uncertainty and its practical application in calibration and testing laboratories. The programme provided participants with comprehensive knowledge on the principles, estimation, evaluation, and reporting of measurement uncertainty in accordance with the requirements of the MS ISO/IEC 17025:2017 Standard.

Through a combination of lectures, practical exercises, and interactive discussions, participants enhanced their understanding of measurement uncertainty and its application in



Interactive session with Dr. Wan Abd Malik

calibration and testing laboratories in accordance with the requirements of the MS ISO/IEC 17025:2017 Standard.

Dr. Nur Aqilah Muhamad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

IVAT Welcomes Delegation from Telkom University, Indonesia



Group photo

JOHOR BAHRU, 27 April 2026 – On 27 April 2026, IVAT had the honour of welcoming a distinguished delegation from Telkom University, Bandung, Indonesia, as part of its ongoing commitment to fostering international academic collaboration and institutional partnerships.

The delegation was warmly received by Dr. Norhafezaidi Mat Saman, representing IVAT. The visit reflected a shared commitment by both institutions to strengthen academic relationships and promote meaningful engagement in areas of mutual interest.

Throughout the visit, representatives from IVAT and Telkom University engaged in productive discussions aimed at exchanging knowledge, sharing institutional expertise, and

identifying potential opportunities for collaboration. The meeting provided a valuable platform to explore initiatives in research, academic exchange, innovation, and other collaborative activities that can contribute to the advancement of higher education and technological development.

The visit marks an important step towards establishing a stronger partnership between IVAT and Telkom University. Both institutions expressed their enthusiasm for future collaborations that will benefit students, researchers, and the broader academic community through the exchange of ideas, expertise, and best practices.

IVAT extends its sincere appreciation to the delegation from Telkom University for their visit and looks forward to cultivating a long-lasting and impactful partnership that will drive academic excellence, innovation, and international cooperation in the years to come.

Dr. Norhafezaidi Mat Saman, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

IVAT Welcomes Visitors from Zhejiang University



Laboratory tour

JOHOR BAHRU, 19 January 2026 – IVAT was pleased to welcome visitors from Zhejiang University, China, on Monday, 19 January 2026.

The visit provided a valuable platform for academic engagement, knowledge sharing, and the exchange of ideas between the two institutions. During the visit, both parties participated in productive discussions focusing on opportu-

nities for collaboration in research, academic activities, and the development of future initiatives in the field of electrical engineering and high-voltage technology.

The engagement also provided an opportunity for the visitors to learn more about IVAT's expertise, research activities, and capabilities. The exchange of perspectives and experiences contributed to strengthening academic networking and identifying potential areas of mutual interest.

IVAT values this meaningful visit and looks forward to further strengthening its relationship with Zhejiang University through future research collaborations, knowledge exchange, academic programmes, and other strategic initiatives.

Dr. Noor Syazwani Mansor, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

IVAT Strengthens Family Ties



Various scenes captured during games

(... continued from page 1)

and their families, while fostering a more harmonious and pleasant working environment.

Various fun-filled activities and games were organised throughout the event, involving the participation of staff alongside their families. The activities not only enlivened the atmosphere but also cultivated a spirit of cooperation, tolerance, and togetherness among the IVAT community. Additionally, special activities were held for children to ensure they also enjoyed a fun-filled experience throughout the event.

In the evening, the event continued with a family dinner held in a relaxed and friendly atmosphere. The gathering

provided an opportunity for the IVAT community to interact more closely, thereby strengthening family ties among the staff and their loved ones.

It is hoped that the Family Day will serve as a catalyst, inspiring the IVAT community to reach even greater heights in achieving the institute's future goals and excellence. As with the Malay saying:

"Yang baru diraikan yang lama dikenang, semoga ukhuwah yang terjalin antara staf dan keluarga masing-masing dapat disemai di kalangan anak-anak."

Mr. Zamri Kassim, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

Congratulations on Promotion to Associate Professor

JOHOR BAHRU, 9 March 2026 – IVAT extends its warmest congratulations to Ir. Ts. Dr. Noor Azlinda Ahmad on her well deserved promotion to the position of Associate Professor. This significant achievement reflects her continuous dedication, academic excellence and valuable contributions to research, education and professional development in the field of high voltage engineering. Her commitment to advancing knowledge, fostering innovation and strengthening industry-academia collaboration continues to inspire the IVAT community.

IVAT wishes Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad continued success in her academic journey and look forward to witnessing many more remarkable achievements and contributions in the years ahead

Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



IVAT Hosts EV Sun and Polish Stakeholders to Strengthen International Research Collaboration

JOHOR BAHRU, 14 April 2026 – On 14 April 2026, IVAT had the pleasure of welcoming representatives from EV Sun and a delegation of stakeholders from Poland for an official visit aimed at fostering international research collaboration and innovation. The visit provided an excellent platform to showcase IVAT's advanced research facilities, with a particu-

Azmi, who shared IVAT's research expertise and exchanged ideas with the visiting delegation to identify opportunities for future cooperation. The discussion reflected a shared commitment to advancing scientific research, innovation, and knowledge transfer through strategic international partnerships.



Group photo after meeting



Group photo during laboratory tour

lar focus on its cutting-edge plasma research and the development of graphene-based technologies. The delegation was introduced to the institute's research capabilities and ongoing initiatives that support the advancement of sustainable and high-impact technological solutions.

In addition to the laboratory tour, both parties engaged in productive discussions on potential areas of collaboration, particularly the development of joint research initiatives and applications for international research grants. The session was represented by Dr. Norhafezaidi Mat Saman, Assoc. Prof. EUR ING Ir. Ts. Dr. Lau Kwan Yiew, and Ir. Dr. Aizat

IVAT extends its sincere appreciation to EV Sun and the Polish delegation for their visit and valuable discussions. The institute looks forward to building a strong and lasting international partnership that will contribute to impactful research, technological innovation, and the successful implementation of collaborative projects in the future.

Dr. Norhafezaidi Mat Saman, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

IVAT Student Successfully Defending Doctoral Research Work

JOHOR BAHRU, 11 March 2026 – Heartiest congratulations to Shirley Anak Rufus on successfully passing her doctoral viva-voce with her doctoral thesis entitled "Trend Prediction Algorithm for Thunderstorms in Malaysia." This achievement marks a significant milestone in her research journey and reflects her dedication and commitment to



Shirley (middle) successfully defending her doctoral research work

advancing knowledge in the field of thunderstorm prediction. The research was conducted under the supervision of

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad and Prof. Dr. Zulkurnain Abdul Malek, whose guidance, expertise and continuous support have contributed greatly to the successful completion of this doctoral work.

IVAT would also like to express its sincere appreciation to Assoc. Prof. Ir. Ts. Dr. Lau Kwan Yiew for his role as the internal evaluator, Prof. Ir. Dr. Hazlee Azil Illias from Universiti Malaya as the external evaluator, Prof. Dr. Mohd Pauzi Abdullah as the Chairman and Dr. Nur Aqilah Mohamad as the Co-Chairman. Their valuable insights, constructive feedback and commitment throughout the evaluation process have played an important role in ensuring the quality and academic rigour of the doctoral research work.

Once again, congratulations to Shirley on her remarkable achievement. May this success inspire continued excellence and further contributions

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

IVAT Welcomes Educational Visit from Kolej Teknologi Maju, Senai

JOHOR BAHRU, 4 October 2025 – On 7 October 2025, the IVAT was pleased to welcome a delegation of students and staff from Kolej Teknologi Maju, Senai, Johor, as part of an educational visit aimed at enhancing students' exposure to advanced research and academic excellence.

The visit provided participants with the opportunity to explore IVAT's state-of-the-art research facilities and gain valuable insights into the institute's research activities, laboratory capabilities, and academic initiatives in the fields of high voltage and high current engineering. Through guided tours and informative sessions, students were introduced to the cutting-edge technologies and innovative research being carried out at IVAT.

The educational visit reflects the importance of strengthening collaboration between higher education institutions and technical colleges in nurturing future talent and inspiring students to pursue careers in engineering and research.

IVAT extends its sincere appreciation to Kolej Teknologi Maju, Senai, Johor, for their visit and looks forward to fostering continued collaboration and future engagements that will benefit both institutions. IVAT remains committed to supporting knowledge



Photo during laboratory tour



Group photo

sharing, academic excellence, and the development of the next generation of skilled professionals through meaningful educational partnerships.

Dr. Norhafezaidi Mat Saman, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

ROBORIMBA Knowledge Transfer Programme Cultivates Future-Ready Robotics Talent

JOHOR BAHRU, 21 June 2026 – Universiti Teknologi Malaysia (UTM), through the SMARTCAMP Club under the Student Representative Committee of Kolej Tuanku Canselor (JKP KTC), successfully organised the two-day ROBORIMBA Programme from 20 to 21 June 2026 at the P16 area of the Faculty of Electrical Engineering (FKE), UTM Johor Bahru, as a knowledge transfer programme aimed at equipping students with practical competencies in robotics, Internet of Things (IoT), and leadership through experiential learning. Designed around SMARTCAMP leadership modules, IoT and robotics training, and outdoor adventure activities, the programme provided participants with hands-on exposure to emerging technologies while strengthening their critical thinking, innovation, teamwork, communication, and problem-solving skills.

The opening ceremony was officiated by the programme adviser, Ir. Ts. Dr. Aizat Azmi, an IVAT Fellow, who highlighted the importance of knowledge transfer initiatives in bridging academic learning with real-world technological applications and preparing students to become future-ready graduates. The ceremony was also attended by Ms. Adibah Aida Zaires, Ms. Nur Syazleen Jalaluddin, and Mr. Haikal Aniq Ahmad Syauqi, who expressed their support for the programme and its objectives.

Throughout the two-day programme, participants attend-

ed robot assembly, robot wiring, 3D printing, and programming workshops, alongside SMARTCAMP Trust Walk and Roleplay modules that fostered leadership, resilience, and collaboration. The programme concluded with the Mini Robo Competition, where participants demonstrated the technical knowledge and practical skills acquired throughout the workshops by designing, programming, and operating their robots in a competitive setting.

ROBORIMBA supports the United Nations Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education) by promoting inclusive, experiential, and technology-driven learning, and SDG 9 (Industry, Innovation and Infrastructure) by enhancing students' exposure to digital technologies and innovation. The programme was successfully delivered by 42 organising committee members from various divisions under the leadership of Programme Director Nur Syifa Mohamed Shahrizan. Through impactful knowledge transfer initiatives such as ROBORIMBA, SMARTCAMP Club and JKP KTC continue to reinforce UTM's commitment to producing innovative, technologically competent, and future-ready graduates capable of meeting the evolving demands of Industry 4.0 and beyond.

Ir. Ts. Dr. Aizat Azmi, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Various photos taken during the event

Celebrating IVAT Doctoral Graduates at UTM 69th Convocation

JOHOR BAHRU, 15 November 2025 – Huge congratulations to the doctors, Dr. Muhammad Nizam Abdul Razak, Dr. Mohd Ridhuan Mohd Sharip, Dr. Nur Azalia Azrin, Dr. Siti Noorhazirah Kamrudin, and Dr. Nur Atikah Johari, as they take the stage at the Universiti Teknologi Malaysia (UTM) 69th Convocation Ceremony! Over the past few years, these PhD scholars have successfully defended their advanced research, contributing vital breakthroughs to the fields of electrical insulation and supercapacitor.

Dr. Muhammad Nizam paved the way with a successful viva defense on “Nitrogen Plasma Activated Carbon Electrodes from Kenaf Fibre for Supercapacitor Applications”, under the guidance of Ts. Dr. Zulkarnain Ahmad Noorden (main supervisor), Prof. Dr. Zulkurnain Abdul Malek, and Ir. Dr. Sharin Ab Ghani (Universiti Teknikal Malaysia Melaka).

Dr. Mohd Ridhuan tackled the “Electrical Insulation Characteristics of Polypropylene Blends and Nanocomposites”. Dr. Mohd Ridhuan was guided by Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew (main supervisor) and Ts. Dr. Zulkarnain Ahmad Noorden.

Dr. Nur Azalia defended her thesis on “Structure and Dielectric Properties of Polypropylene Blended with Polyolefin Elastomers and Treated Nanotitania.” Her research

was guided by Ts. Dr. Noor Azlinda Ahmad (main supervisor) and Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew.

Dr. Siti Noorhazirah triumphed in her viva on “Structure-Dielectric Properties of Polypropylene Blended with Ethylene-Octene Copolymers and Oxide-Based Nanofillers.” She was supervised by Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew (main supervisor) and Ts. Dr. Noor Azlinda Ahmad.

Dr. Nur Atikah Johari successfully defended her thesis on “Structure and Electrical Properties of Polypropylene and Ethylene-Propylene-Diene Monomer Blend Containing Magnesium Oxide and Calcium Zirconate Nanofillers.” She completed her PhD under the supervision of Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew (main supervisor), Prof. Dr. Zulkurnain Abdul Malek and Dr. Mona Riza Mohd Esa.

Their research leaves an impactful footprint on technology and innovation relevant to high voltage engineering. IVAT wishes them the very best in their future undertakings. Congratulations, Doctors!

Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Photo with Dr. Mohd Ridhuan, Dr. Muhammad Nizam, Dr. Zulkarnain, Dr. Lau, Dr. Nur Atikah, Dr. Nur Azalia and Dr. Siti Noorhazirah (from left to right)

High Voltage Calibration, Testing, Consultancy, Training, Research and Development

at

Institute of High Voltage and High Current, Universiti Teknologi Malaysia

Introduction

- The Institute of High Voltage and High Current, or in Malay, Institut Voltan dan Arus Tinggi (IVAT), was established in Universiti Teknologi Malaysia in 1991
- IVAT's establishment stems from the need of the country for a centre which carries out research and development, testing and calibration work, and training in the field of high voltage engineering
- IVAT is a laboratory accredited under the Laboratory Accreditation Scheme of Malaysia and meets the requirements of MS ISO/IEC 17025:2017 (general requirements for the competence of testing and calibration laboratories)

Accredited Calibration and Testing Services



Ensure the reliability of your high voltage equipment through

Accredited Calibration & Testing Services



Accredited scope of calibration:

- AC – up to 180 kV rms
- DC – up to 180 kV
- Impulse – 50 kV to 140 kV
- High current – up to 1000 A



Accredited scope of testing:

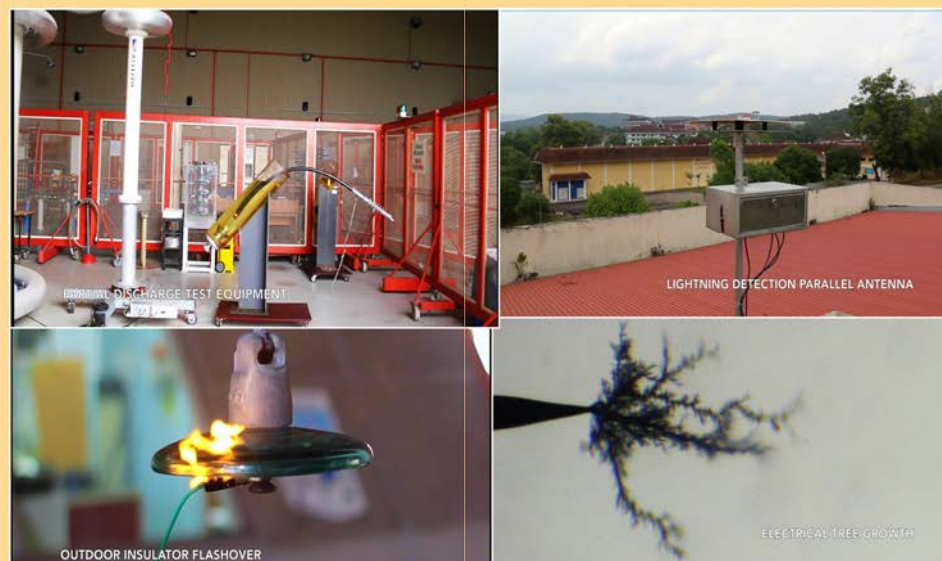
- Power cable AC voltage withstand test from 2 kV to 180 kV at 50 Hz

Research and Development

IVAT has 2 main research themes covering comprehensive research on high voltage engineering:

Lightning Research and Safety:

- Lightning monitoring, detection, and protection system
- Lightning characterization, electromagnetic field, and radio frequency emission
- Overvoltage protection system and insulation co-ordination, measurement techniques, surge arresters, and magnetic engineering
- Grounding system improvement and measurement method
- Super capacitor application in high voltage systems
- Electromagnetic compatibility and interference in high voltage systems



Dielectrics, Discharges and Diagnostics:

- Electrical discharge, detection, and monitoring
- Partial discharge analysis on polymeric insulating materials
- Condition monitoring of high voltage equipment
- Diagnosis and fault analysis
- Forensic investigation
- Material assessment
- Plasma and ozone generation applications
- Low voltage and telecommunication surge protective devices

Consultancy and Training Services

IVAT offers consultancy services for the following areas:

- Laboratory accreditation based on MS ISO/IEC 17025: 2017
- Lightning protection systems for buildings
- Protection systems for electrical power networks
- Grounding systems installations
- High voltage product development
- Low voltage and telecommunication surge protective devices

IVAT also organises training, visits, workshops, seminars and short courses. Some popular modules include:

- Electrical Safety Seminar
- Fundamentals of High Voltage Technology
- Three-day Short Course on High Voltage Testing Techniques and Safety
- Two-day Short Course on Grounding Systems
- Short Course on Lightning Protection for High and Low Voltage Systems
- Short Course on Partial Discharge Phenomena

Contact details :

Ts. Dr. Zulkarnain Ahmad Noorden
Director / Senior Lecturer
E-mail: zulkarnain-an@utm.my

Ir. Ts. Dr. Noor Azlinda Ahmad
Deputy Director (Service, Consultancy and Training) / Associate Professor
E-mail: noorazlinda@utm.my

Ir. Ts. Dr. Mona Riza Mohd Esa
Quality Manager
(Calibration) / Senior Lecturer
E-mail: monariza@utm.my

Dr. Zuraimy Adzis
Laboratory Head / Senior Lecturer
E-mail: zuraimy@utm.my

Dr. Zulkurnain Abdul Malek
Signatory / Professor
E-mail: zulkurnain@utm.my

Ir. Ts. Dr. Mohd Hafizi Ahmad
Quality Manager (Testing) / Associate Professor
E-mail: mohdhafizi@utm.my

Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew
Deputy Director (Research, Networking and Commercialisation) / Competent Electrical Engineer / Associate Professor
E-mail: kwanyiew@utm.my

Dr. Mohd Fadli Rahmat
Research Fellow / Senior Lecturer
E-mail: mfadli@utm.my

Dr. Norhafezaidi Mat Saman
Research Fellow / Senior Lecturer
E-mail: norhafezaidi@utm.my

Dr. Noor Syazwani Mansor
Research Fellow / Senior Lecturer
E-mail: noor.syazwani@utm.my

Dr. Nur Aqilah Mohamad
Research Fellow / Senior Lecturer
E-mail: nuraqilah.m@utm.my

Ir. Ts. Dr. Aizat Azmi
Research Fellow / Senior Lecturer
E-mail: aizat.azmi@utm.my

Office Phone:
+607 533 3343

Official Website:
ivat.utm.my

Address:

Institute of High Voltage and High Current, Block P06, Faculty of Electrical Engineering, Universiti Teknologi Malaysia, 81310 Johor Bahru, Malaysia.

Article — Magnetic Field Interference: Lightning, Power Lines, and Data Centres

Lightning strikes and high-voltage transmission lines are not just dramatic sights in the sky; they also generate powerful magnetic fields that can interfere with sensitive electronics. Electromagnetic Interference (EMI) from lightning is distinctive because it appears only during thunderstorms, radiating intense impulse magnetic fields orthogonal to the lightning channel. By contrast, EMI from transmission lines is continuous, varying with the amount of current being transmitted at any given time. These disturbances can couple into nearby systems and cause sudden voltage spikes, corrupted signals, or even downtime. Data centres, with their dense racks of servers and networking equipment, are particularly vulnerable because even small disruptions can cascade into large-scale outages.

When these magnetic fields interact with electronics, the consequences can be serious. Transient surges may damage power supplies and storage drives, while distorted signals can lead to packet loss or corrupted files. A single lightning-induced surge has the potential to knock out critical systems, disrupting cloud services and enterprise operations. For organizations that rely on uninterrupted data flow, this kind of interference is more than an inconvenience — it is a direct threat to business continuity.

Fortunately, there are proven strategies to mitigate these risks. Shielding is one of the most effective defenses, with multi-layer shielded cables and enclosures blocking EMI before it reaches sensitive equipment. Proper grounding systems ensure excess energy is safely dissipated into the earth, reducing stress on servers and networking gear. Surge protection devices, installed at power entry points, absorb voltage spikes before they can spread through a facility. Redundant power paths and separation of critical systems from vulnerable circuits further minimize the chance of cascading failures. Finally, adherence to national standards such as MS IEC 61000, which governs EMC testing and mitigation, and MS IEC 62305, which provides design and installation guidelines for lightning protection systems, ensures that protective measures are consistent and reliable.

In short, while lightning and power line interference are real threats to data centres, they are manageable with the right precautions. By combining shielding, grounding, surge protection, and compliance with established standards, organisations can safeguard their infrastructure and maintain resilience even in lightning-prone regions. For technical guidance or support, IVAT can be contacted to assist in addressing any part of these issues.

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

IVAT Participates in Electrical Engineering Showcase

JOHOR BAHRU, 24 June 2026 – IVAT took part in the Electrical Engineering Showcase 2026 (EES 2026). The event was held at block P07 at the Faculty of Electrical Engineering (FKE), Universiti Teknologi Malaysia, Johor Bahru. The exhibition was the final showcase for graduating students, featuring innovative projects quality in all its future endeavours.

As one of the exhibitors, IVAT shared information about its research capabilities, specialised testing facilities, and technical expertise in high voltage and high current engineering. Visitors had the opportunity to learn about IVAT's laboratory facilities, research activities in high voltage engineering as well as the institute's testing and consultancy services.

The exhibition provided an excellent platform for IVAT to interact with students, academics, and industry representatives, thereby fostering the exchange of knowledge. EES 2026 brought together innovative student projects, research institutes and industry partners, strengthening the collaboration between academia and industry. IVAT's



Photo during showcase

participation reflects its continuous dedication in supporting innovation, promoting research excellence, and contributing to the development of high voltage and high current technologies for the benefit of society

Mr. Abdul Syafiq Abdul Shuhaimi, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

Knowledge Transfer Programmes SolarEd and Solar Spark Enhance Renewable Energy Awareness Among Secondary School Students

JOHOR BAHRU, 11 June 2026 – Two Knowledge Transfer Programmes (KTPs) focusing on renewable energy education were successfully conducted at SMK Bandar Putra 2, Kulai, on 19 May 2026 and SMK Tun Fatimah Hashim on 11 June 2026. The programmes, titled SolarEd – Empowering the Future Generation and Solar Spark: Bridging the Knowledge Gap Regarding Renewable Energy Through Interactive Demonstrations and Technical Exposure, aimed to increase secondary school students' knowledge of solar energy and photovoltaic (PV) technology while promoting awareness of sustainable energy.

Aligned with Malaysia's National Energy Transition Roadmap (NETR), both programmes introduced students to the fundamentals of photovoltaic systems through interactive lectures, demonstrations, and hands-on activities. Students learned how solar energy is converted into electricity and explored its practical applications in everyday life. The SolarEd programme at SMK Bandar Putra 2 was led by Ir. Ts. Dr. Aizat bin Azmi, an IVAT Fellow. Meanwhile, the Solar Spark programme at SMK Tun Fatimah Hashim was

headed by Ts. Dr. Nur Dalilah binti Nordin, with Ir. Ts. Dr. Aizat assisting as the co-leader. Activities included demonstrations using PV educational kits, the assembly and testing of solar-powered model cars, group presentations on PV system components, and interactive quizzes on solar energy, energy conservation, and basic electrical safety. These activities strengthened students' understanding of renewable energy while enhancing their critical thinking, teamwork, and problem-solving skills. Both programmes successfully achieved their objectives of integrating theoretical knowledge with practical learning experiences and encouraging greater interest in engineering, renewable energy, and STEM-related fields. Through these KTP initiatives, the university continues to demonstrate its commitment to community engagement, sustainability, and the development of future generations who are equipped to contribute to Malaysia's green energy transition.

Ir. Ts. Dr. Aizat Azmi, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Various photos taken during the event

Research Networking and Collaboration in High Voltage Engineering



Group photo

JOHOR BAHRU, 08 August 2025 – IVAT hosted a one-day networking event called "Research Networking: Connect and Collaborate", on 07 August 2025. Organised alongside the Institute of Electrical and Electronics Engineers (IEEE) Dielectrics and Electrical Insulation Society (DEIS) Malaysia Chapter and Malaysian High Voltage Network (MyHVnet), the networking event focused on building international bridges in high-voltage engineering and sustainable energy systems. Opening remarks from Universiti Teknologi Malaysia (UTM)'s Research Management Director, Prof. Dr. Zulkurnain Abdul Malek, and IVAT Director, Ts. Dr. Zulkurnain Ahmad Noorden, set the stage by emphasising the university's drive toward global research partnerships and cutting-edge industrial capabilities.

The morning sessions featured a series of technical presentations from Malaysian and Chinese experts. Prof. Dr. Jiawei Zhang (Xi'an University of Technology) introduced intelligent sensing techniques for renewable energy grids through his presentation entitled "Smart Sensing Technology for Green Energy Systems" while Assoc. Prof. Dr. Peng Wang (Sichuan University) addressed insulation breakthroughs critical for electric vehicles and aviation through his presentation entitled "Key Technologies of Electrical Insulation in Transportation Electrification". Representing UTM, Prof. Dr. Zulkurnain detailed efficiency optimizations for superconducting pulsed transformers through his presentation entitled "Optimisation of Superconducting Pulsed Transformer for High-Performance Inductive Pulsed Power Supplies" and Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew discussed how advanced materials engineering is reshaping modern electrical insulation to meet sustainability goals through his presentation entitled "Materials Engineering for Next-Generation Electrical Insulation".

The afternoon shifted to practical demonstrations, guiding attendees through UTM's specialised facilities. The delegation toured the high-voltage testing laboratory, an electric vehicle powertrain lab, a solar-integrated EV charging station, and a battery energy storage site. By bridging insights from both nations, the event established a clear foundation for future cross-border initiatives in clean energy and advanced materials.

Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Photo during laboratory visit

Two-Day Short Course on Mastering High Voltage: Generation, Measurement and Safety Successfully Held

JOHOR BAHRU, 15 July 2025 – A two-day short course on Mastering High Voltage: Generation, Measurement and Safety, was successfully conducted by IVAT from 14 to 15 July 2025. Over the two days, participants explored the fundamental principles and practical applications of high voltage technology through a combination of technical discussions and interactive learning sessions. The course covered essential topics including high voltage generation techniques, measurement and testing methods, as well as the safety principles and best practices required when working in high voltage environments.



Group photo

Beyond the technical content, the programme provided an excellent platform for participants from various industries and institutions to exchange knowledge, discuss real world challenges and share professional experiences. These valuable interactions enriched the learning experience and encouraged meaningful discussions on current practices and



Practical session

emerging developments in the field of high voltage engineering.

The enthusiasm, active participation, and insightful contributions from everyone involved played a significant role in making the course a success. The commitment shown by all participants throughout the programme is highly appreciated and it is hoped that the knowledge and practical insights gained will strengthen their technical competencies, promote a stronger culture of safety, and support excellence in their respective workplaces.

Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

Recognition as Certified HRD Corp Trainer

JOHOR BAHRU, 22 August 2025 – IVAT extends its warmest congratulations to Dr. Noor Syazwani Mansor on her successful recognition as a Certified HRD Corp Trainer by the Human Resource Development Corporation (HRD Corp) on 14 March 2025. This prestigious recognition reflects Dr. Noor Syazwani's commitment to professional excellence, continuous development and her dedication towards enhancing knowledge transfer and human capital development. Her achievement highlights her capability in delivering impactful training programmes and contributing towards the development of skilled and competent professionals. IVAT celebrates this remarkable accomplishment and wishes Dr. Noor Syazwani continued success in her professional journey. May this achievement inspire further contributions towards advancing lifelong learning, industry engagement, and excellence in professional training.

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Majlis Apresiasi dan Penghargaan IVAT 2025

JOHOR BAHRU, 21 November 2025 – Pada 21 November 2025, IVAT telah mengadakan Majlis Apresiasi IVAT bagi tahun 2025 bertempat di The Gem Event Space, Puteri Harbour Iskandar Puteri baru-baru ini. Majlis tersebut diadakan sebagai tanda penghargaan kepada seluruh warga IVAT atas komitmen, dedikasi dan sumbangan mereka sumbangkan sepanjang tahun tersebut.

Acara yang berlangsung dalam suasana mesra dan penuh penghargaan tersebut turut melibatkan penyampaian anugerah bagi menghargai kecemerlangan staf dalam pelbagai kategori. Tujuan majlis tersebut diadakan bukan sahaja untuk mengeratkan hubungan sesama warga IVAT, tetapi juga menyuntik semangat untuk terus meningkatkan kecemerlangan dalam bidang penyelidikan, perkhidmatan dan pembangunan teknologi voltan tinggi.

Antara penerima-penerima Anugerah sempena Majlis Apresiasi IVAT 2025 adalah:

- Anugerah Penerbitan – Prof Mayda Eur Ing. Ir. Ts. Dr. Lau Kwan Yiew
- Anugerah Geran Penyelidikan – Ts. Dr. Zulkarnain Ahmad Noorden
- Anugerah Khidmat Komuniti – Ir. Ts. Dr. Aizat Azmi
- Anugerah Bakti Setia – Ts. Dr. Mona Riza Mohd Esa, Encik Mohd Nazren Mohd Ghazali dan Puan Elliyana Mazlan
- Anugerah Khidmat Cemerlang – Ts. Dr. Mona Riza Mohd Esa, Encik Mohamad Syahrin Mohamad dan Encik Abd. Mohsin Abd. Razak

Bagi menceriakan lagi majlis tersebut, aktiviti seperti cabutan bertuah dan juga pemberian cenderahati kepada semua staf IVAT telah diadakan.

En. Mohamad Syahrin Mohamad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Gambar bersama

Majlis “Budi Disemai, Jasa Dikenang”

JOHOR BAHRU, 21 November 2025 – IVAT merakamkan setinggi-tinggi penghargaan dan ucapan terima kasih kepada Prof. Dr. Zulkurnain Abdul Malek atas jasa bakti dan kepimpinan beliau sepanjang menjawat jawatan sebagai Pengarah IVAT.

Prof. Dr. Zulkurnain telah memimpin IVAT dengan penuh dedikasi, komitmen dan visi yang jelas dalam memperkukuh peranan institut sebagai salah satu instituti yang terkenal dalam bidang voltan tinggi. Di bawah kepimpinan beliau, IVAT telah mencatat pelbagai pencapaian penting termasuk pengukuhan penyelidikan, kerjasama antara industri, serta perluasan peranan IVAT dalam pembangunan kepakaran teknikal.

Terima kasih, Prof. Dr. Zulkurnain atas segala khidmat dan sumbangan kepada IVAT daripada seluruh warga IVAT!

En. Mohamad Syahrin Mohamad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Prof. Dr. Zulkurnain (kanan) menerima cenderahati daripada Pengarah IVAT Dr. Zulkarnain

Dalam Kenangan: Hairoisyam Abd. Rani – Anugerah Khas Anumerta

JOHOR BAHRU, 21 November 2025 – Pada Jumaat, 21 November 2025, telah berlangsung sebuah majlis penuh penghormatan bagi mengenang jasa dan sumbangan Allahyarham Hairoisyam Abd Rani. Dalam suasana yang sarat dengan rasa sayu namun penuh penghargaan, Allahyarham telah dianugerahkan Anugerah Khas Anumerta sebagai pengiktirafan atas dedikasi dan bakti beliau sepanjang hayat.

Untuk menyampaikan anugerah ini, pihak IVAT menjemput anak Allahyarham, Danish bagi menerima penghargaan ini. Pihak IVAT berharap dan mendoakan semoga keluarga Allahyarham tabah dan cekal. Semoga roh Allahyarham dicucuri rahmat dan ditempatkan dalam kalangan hamba-Nya yang beriman. Al-Fatihah.

En. Mohamad Syahrin Mohamad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Allahyarham Hairoisyam dalam kenangan

Audit Keselamatan dan Kesihatan Pekerjaan IVAT

JOHOR BAHRU, 22 April 2026 – IVAT telah menerima kunjungan pasukan juruaudit bagi Audit Keselamatan dan Kesihatan Pekerjaan (AKKP) 2025 sebagai sebahagian daripada usaha berterusan universiti dalam memperkukuh budaya kerja selamat serta memastikan pematuhan terhadap keperluan keselamatan dan kesihatan pekerjaan.



Gambar bersama ketika audit

Audit tersebut bertujuan menilai tahap pematuhan IVAT terhadap keperluan perundangan, dasar universiti dan garis panduan berkaitan keselamatan dan kesihatan pekerjaan, di samping mengenal pasti peluang penambahbaikan dalam pengurusan risiko di tempat kerja. Penilaian meliputi aspek dokumentasi, pengurusan bahan dan peralatan, prosedur operasi standard (SOP), Hazard Identification, Risk Assessment and Risk Control (HIRARC), serta pelaksanaan amalan keselamatan dalam aktiviti penyelidikan dan operasi makmal.

Sepanjang sesi audit, pasukan juruaudit telah mengadakan pemeriksaan di makmal-makmal IVAT dan sesi temu bual bersama warga kerja bagi menilai keberkesanan pelaksanaan sistem pengurusan keselamatan dan kesihatan pekerjaan. Hasil pemerhatian menunjukkan komitmen tinggi warga

IVAT dalam mematuhi prosedur keselamatan, mengamalkan pengurusan risiko secara sistematik serta mewujudkan persekitaran kerja yang selamat dan kondusif.

Timbalan Pengarah IVAT Prof. Madya Ir. Ts. Dr. Noor Azlinda Ahmad berkata audit AKKP merupakan mekanisme penting dalam memastikan amalan keselamatan sentiasa diperkasakan selaras dengan keperluan semasa. "Audit ini bukan sekadar menilai tahap pematuhan, malah menjadi platform untuk mengenal pasti ruang penambahbaikan bagi memperkukuh budaya keselamatan dan meningkatkan kesiapsiagaan warga kerja dalam mengurus risiko secara berkesan," katanya.

Beliau turut menegaskan bahawa IVAT komited melaksanakan penambahbaikan secara berterusan bagi memastikan setiap aspek pengurusan keselamatan dan kesihatan pekerjaan memenuhi standard yang ditetapkan oleh universiti serta pihak berkuasa.

Pelaksanaan Audit AKKP 2025 mencerminkan komitmen IVAT dalam memperkukuh tadbir urus keselamatan dan kesihatan pekerjaan, sekali gus menyokong aspirasi UTM untuk menyediakan persekitaran kerja dan penyelidikan yang selamat, berkualiti serta kondusif kepada seluruh warganya.

En. Abdul Mohsin Abdul Razak, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

Selamat Bersara Prof. Dr. Zulkurnain Abdul Malek

JOHOR BAHRU, 21 November 2025 – Setinggi-tinggi penghargaan dan ucapan terima kasih diucapkan kepada Prof. Dr. Zulkurnain Abdul Malek sempena persaraan beliau setelah sekian lama menabur bakti dan memberikan sumbangan yang amat bermakna kepada institusi ini. Sepanjang tempoh perkhidmatan, dedikasi, kepimpinan, serta komitmen Prof. Dr. Zulkurnain dalam bidang akademik, penyelidikan dan pembangunan institusi telah banyak menyumbang kepada kecemerlangan IVAT dan Universiti Teknologi Malaysia (UTM). Segala ilmu, pengalaman dan pandangan yang dikongsikan akan terus menjadi inspirasi dan panduan kepada warga IVAT. Persaraan ini bukanlah pengakhiran kepada sebuah perjalanan, tetapi permulaan kepada fasa kehidupan yang baharu. Semoga Prof. Dr. Zulkurnain dikurniakan kesihatan yang berpanjangan, kebahagiaan yang berterusan, serta ketenangan bersama keluarga dan insan tersayang.

Seluruh warga IVAT merakamkan setinggi-tinggi penghargaan atas segala jasa dan sumbangan yang telah dicurahkan. Sesungguhnya, segala bakti dan legasi yang ditinggalkan akan sentiasa dikenang dan dihargai. Selamat bersara dan semoga terus sukses dalam setiap langkah yang mendatang.

Prof. Madya Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia



Congratulations on the Achievement of AIM-STAR 2025 Research Incentive Grant

JOHOR BAHRU, 10 September 2025 – IVAT extends its warmest congratulations to Dr. Zulkarnain Ahmad Noorden on the successful award of the AIMSTAR 2025 Research Incentive Grant for the project entitled: “Pemindahan Ilmu Penyelenggaraan Solar Fasa 2: Penggunaan Alat Ukur untuk Sistem Baru di Kampung Orang Asli Woh Intake, Tapah”. The achievement reflects IVAT’s commitment towards advancing research, innovation and knowledge transfer initiatives that create meaningful impact beyond academia.

The project highlights the importance of applying renewable energy technologies to support community development and enhance technical capabilities among local communities. IVAT is proud of the accomplishment and hopes that the initiative will continue to contribute towards sustainable technology adoption, strengthen research engagement and deliver valuable benefits to the community through the application of emerging energy solutions.

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Recognition as World’s Top 2% Scientist

JOHOR BAHRU, 24 November 2025 – Heartiest congratulations to Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew from IVAT on this remarkable achievement as World’s Top 2% Scientist. IVAT is proud of his dedication, perseverance and continuous commitment to excellence. May this success mark the beginning of many more accomplishments ahead and continue to inspire those around him. IVAT wishes Dr. Lau continued success in all his future endeavours.

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Perginya Seorang Insan yang Dihargai:Allah-yarham Encik Hairoisyam bin Abd Rani

JOHOR BAHRU, 7 September 2025 – Dengan penuh dukacita, seluruh warga IVAT menerima berita pemergian Allahyarham En. Hairoisyam Abdul Rani yang telah kembali ke rahmatullah pada pagi 7 September 2025. Pemergian Allahyarham merupakan satu kehilangan besar buat warga IVAT dan Universiti Teknologi Malaysia (UTM). Sepanjang perkhidmatan beliau, Allahyarham dikenali sebagai seorang staf yang berdedikasi, komited, serta sentiasa memberikan sumbangan bermakna melalui kepakaran, tanggungjawab dan semangat kerja yang tinggi. Jasa, komitmen dan kenangan bersama Allahyarham akan sentiasa terpahat dalam ingatan seluruh warga IVAT. Kehilangan ini pastinya dirasai oleh rakan sekerja, sahabat handai, serta semua yang pernah berurusan dan mengenali beliau.

Marilah kita bersama-sama menzahirkan doa agar segala urusan keluarga Allahyarham dipermudahkan. Semoga roh Allahyarham dicucuri rahmat oleh Allah SWT dan ditempatkan dalam kalangan golongan yang beriman serta beramal soleh. Semoga Allah SWT mengampuni segala kekhilafan Allah-yarham, melimpahkan rahmat dan keampunan-Nya, serta mengurniakan kekuatan dan ketabahan kepada seluruh ahli keluarga yang ditinggalkan.



Al-Fatihah.

Prof. Madya Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.

Recognition as Professional Engineer

JOHOR BAHRU, 3 September 2025 – IVAT extends its warmest congratulations to Ir. Ts. Dr. Noor Azlinda Ahmad and Ir. Ts. Dr. Aizat Azmi on their official recognition as a Professional Engineer (P. Eng) by the Board of Engineers Malaysia (BEM), effective 15 August 2025 and 20 February 2025, respectively. This significant professional milestone reflects their strong technical competency, dedication to engineering excellence and continuous commitment to upholding the standards and responsibilities of the engineering profession. The achievement is a testament to his expertise, experience and contributions to the advancement of engineering practice. IVAT is proud to celebrate this remarkable accomplishment and wishes Ir. Ts. Dr. Noor Azlinda and Ir. Ts. Dr. Aizat continued success in their professional journey. May this recognition inspire further achievements and meaningful contributions to the engineering community and beyond.

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Welcome to IVAT

JOHOR BAHRU, 4 February 2026 – IVAT is pleased to welcome Ms. Zulaikha Abu Talib as the newest member of its team, joining as an Assistant Engineer. IVAT is delighted to have Ms. Zulaikha on board and look forward to the valuable contributions, expertise and fresh perspectives she will bring to IVAT. Her presence will further strengthen IVAT’s team in supporting research, technical services, and professional activities in the field of high voltage engineering.

Assoc. Prof. Ir. Ts. Dr. Noor Azlinda Ahmad, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



IVAT Undergoes Surveillance Assessment

JOHOR BAHRU, 11 February 2026 – On Wednesday, 11 February 2026, IVAT successfully underwent the Surveillance Assessment conducted by the Department of Standards Malaysia (DSM) under the Skim Akreditasi Makmal Malaysia (SAMM) 285 accreditation. The comprehensive full-day assessment took place from 8:30 AM to 5:00 PM, with the official opening and closing sessions held at the IVAT Meeting Room.

The audit was rigorously conducted by a distinguished panel of assessors appointed by DSM, who focused on different critical areas of our operations. The Lead Assessor was ChM Erna Hany Musa (Johor Toyibian Laboratories) while the Technical Assessor was Dr. Ir. Mohd Raffi Samsuddin (TNB Repair and Maintenance). Throughout the day, the assessors conducted thorough reviews of the laboratory operations, quality manage-

ment systems, and technical capabilities to ensure they continue to meet the stringent national standards.

IVAT would like to extend its sincere appreciation to the DSM auditors for their professionalism and constructive insights throughout the audit process. IVAT would also like to extend its special thanks to all IVAT staff members for their commitment, teamwork, and continuous dedication in ensuring compliance and maintaining our quality standards.

This assessment reflects IVAT's ongoing commitment to excellence and continuous improvement. IVAT will continue to uphold the highest standards of quality in all its future endeavours.

Mr. Mohd Nazren Mohd Ghazali, Institute of High Voltage and High Current, Universiti Teknologi Malaysia.



Photo during meeting



Published by:

**Institute of High Voltage and High Current
(IVAT)**

Block P06
Universiti Teknologi Malaysia
81310 Johor Bahru, Johor
Malaysia

Phone: +60 7 533 3343

E-mail: ivat@utm.my

Website: ivat.utm.my

The Institute of High Voltage and High Current, or in Malay, Institut Voltan dan Arus Tinggi (IVAT), was established in Universiti Teknologi Malaysia in 1991. It was initially an educational laboratory which provides facilities for carrying out experiments, research and consultancy services in high voltage engineering, as early as the 1970s.

The establishment of IVAT stems out from the needs of the country for a centre which carries out research and development, test and calibration works in high voltage areas, so that efficient technologies and power system apparatus can be effectively employed for the transmission and distribution to the consumer of electrical energy.

In 1992, the institute became the first institution in the country to be accredited to handle high voltage test and calibration works according to ISO/IEC Guide 25. In 2004, IVAT was accredited with the ISO/IEC 17025 in the field of high voltage electrical calibration. In certification, IVAT has also successfully migrated to MS ISO/IEC 17025 since July 2007 till date. Since 2013, IVAT has been accredited with the on-site calibration and the scope of calibration has been extended up to 180 kV AC (alternating current), 180 kV DC (direct current) and 140 kV impulse. Beginning 2015, IVAT has been accredited with power cable AC voltage withstand test. Recently in 2020, IVAT has successfully migrated to the latest MS ISO/IEC 17025:2017 standard.