

IVAT Newsletter

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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).



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IVAT's Academics Participate in National Networking Event

KUALA LUMPUR, 04 February 2024 – The Institute of Electrical and Electronics Engineers (IEEE) Dielectrics and Electrical Insulation Society (DEIS) Malaysia Chapter convened its 2024 Annual General Meeting (AGM) on 03 February 2024. The meeting was held physically at the Kuala Lumpur Convention Center and virtually via Google Meet.

The meeting was attended by 19 dedicated DEIS members, including IVAT's staff members, Ts. Dr. Zulkarnain Ahmad Noorden, Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew, and Dr. Nur Aqilah Mohamad .

Chaired by Chapter Chair Assoc. Prof. Ir. Dr. Hazlee, the AGM commenced with an opening remark, followed by the endorsement of the 2023 AGM minutes and the presentation of the previous year's activities. Treasurer Dr. Nik Hakimi Nik Ali then presented account matters. The meeting concluded with a forward-looking discussion, outlining plans for activities in 2024.

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



Photo during networking

IVAT's Sustainability Effort at Kampung Woh Intake, Tapah

TAPAH, 25 February 2024 – On 22 until 24 February 2024, staff members of IVAT, Ts. Dr. Mona Riza Mohd Esa, Dr. Norhafezaidi Mat Saman, Dr. Noor Syazwani Mansor, and Dr. Nur Aqilah Mohamad, Mr. Abdul Syafiq Abdullah Shuhaimi and Ms. Nor Elliyana Mazlan, and the Director of IVAT, Ts. Dr. Zulkarnain Ahmad Noorden, joined the corporate social responsibility (CSR) community project at Kampung Orang Asli Woh Intake, Tapah, Perak. The main purpose of the project was to upgrade the solar photovoltaic system and replace worn cables and electrical appliances such as lamps at the village.



Group photo

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

IVAT Director's Remarks



As we embark on another promising year at IVAT, I am filled with both pride and gratitude as I reflect on the remarkable journey we have shared and the exciting path that lies ahead. We are excited to welcome five new members to our team; Dr. Norhafezaidi Mat Saman, Dr. Mohd Fadli Rahmat, Dr. Nur Aqilah Mohamad, Dr. Noor Syazwani Mansor, and Dr. Aizat. Azmi. Each of them brings valuable insights and expertise that will enhance our mission in high voltage research.

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

In our pursuit of continuous improvement, IVAT has held a Management Review Meeting and a Laboratory Working Instruction Review Workshop. These efforts help us evaluate our objectives and ensure our laboratory remains a leader in excellence. We have prioritised high-impact publications and organised a sharing session to improve our publishing practices in the *Elektrika* journal. This initiative nurtures a passion for research and emphasises the importance of quality publications. Additionally, we hosted a seminar on switchgear, providing our students with essential industrial insights. On the other hand, to equip our team with the skills needed in our evolving field, our staff has also participated in various training sessions this year, including courses on scheduled waste risk management and MS ISO/IEC 17025: 2017.

Our collaborative efforts have been strengthened through visits from institutions like Niigata University and Universiti Malaysia Pahang Al-Sultan Abdullah. These interactions not only enhance our understanding of high voltage technologies but also pave the way for fruitful research partnerships. Furthermore, we engaged with industry leaders at the National Metrology Institute of Malaysia and TNB Labs Sdn. Bhd., exploring potential collaborations that drive innovation. Recognising the importance of community, we hosted a staff appreciation ceremony, a professionalism course, and our annual family day at Bidaisari Resort, Pahang. These events foster companionship and support our vibrant culture.

As we move forward, let us build on our achievements and explore new frontiers in high voltage research. Thank you to our partners and stakeholders for your unwavering support. Together, let's make this year transformative for IVAT!

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IVAT's 2024 Hari Raya Celebration

JOHOR BAHRU, 09 May 2024 – The Hari Raya celebration for IVAT's staff members and students was successfully held on 08 May 2024. The celebration started around 12 pm with the arrival of very important guests from various departments and faculties of Universiti Teknologi Ma-



Photo during Hari Raya celebration

aysia. Students of IVAT were also invited to the event. After the recitation of doa from Assistant Engineer Mr. Mohamad Syahrin Mohamad, the Director of IVAT, Ts. Dr. Zulkurnain Ahmad Noorden, delivered his speech. Among all, Ts. Dr. Zulkurnain thanked the committee members of IVAT's Welfare Club (KCSI) for arranging the ceremony and hoped that the event would be annually celebrated as part of IVAT KCSI's activities. He also stressed on the importance in achieving IVAT's key performance indicators in bringing IVAT to a greater height. After the speech, all guests enjoyed the meals. A variety of delicious dishes were available, including lemang, satay, cakes, desserts, fruits, and ketupat.

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

Technical Visit to National Metrology Institute of Malaysia and TNB Labs

SEPANG, 12 September 2023 – Staff members of IVAT visited the National Metrology Institute of Malaysia (NMIM) on 11 September 2023. The visit was part of IVAT's initiatives in understanding services and facilities offered by industrial partners and exploring potential collaborations with industrial partners. During the visit, IVAT's personnel were entertained by Mr. Nazri Marzuki and Mr. Syazwan Muhamad Ayub of NMIM. Discussion on services and facilities offered by NMIM and IVAT was conducted between both parties. The staff members of IVAT also had the opportunity to visit the High Voltage Laboratory of NMIM, where calibrations involving high voltage alternating current, high voltage direct current, high voltage impulse, and high current parameters were briefly demonstrated.

On the same day, IVAT also visited the High Voltage Laboratory of TNB Labs Sdn. Bhd. IVAT's personnel were warmly welcomed by Ir. Dr. Mohd Aizam Talib and Ir. Abu Sufian Abu Bakar of TNB Labs. Discussion on potential collaborations was also held between both parties, and IVAT's personnel had the



Group photo at NMIM



Group photo at TNB Labs

opportunity to further understand services and facilities offered by TNB Labs. Towards the end of the visit, IVAT's personnel had a tour of the high voltage facilities at TNB Labs and exchanged various insights with TNB Lab's personnel on the capability of high voltage equipment in conducting calibration and testing services.

IVAT thanks both NMIM and TNB Labs for their warm receptions during the visits. IVAT looks forward to collaborating with NMIM and TNB Labs in offering research and consultancy works on high voltage engineering in the future.

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

Majlis Malam Apresiasi Anugerah Perkhidmatan Cemerlang dan Penghargaan Staf IVAT 2023

JOHOR BAHRU, 22 Januari 2024 – IVAT telah mengadakan Majlis Malam Apresiasi Anugerah Perkhidmatan Cemerlang dan Penghargaan IVAT bagi tahun 2023 di Sunway Bigbox Hotel, Iskandar Puteri. Majlis tersebut diadakan bagi memberikan semangat dan motivasi serta penghargaan kepada setiap staf IVAT yang bertungkus lumus sepanjang tahun 2023 bagi memastikan IVAT sentiasa berada di dalam landasan kecemerlangan sehaluan dengan pentadbiran university. Di samping itu, terdapat juga acara cabutan bertuah dan sumbangan bagi kelahiran baru (anak staf) serta beberapa anugerah yang lain bagi menghargai setiap jasa dan keringat setiap staf IVAT sepanjang tahun 2023.

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



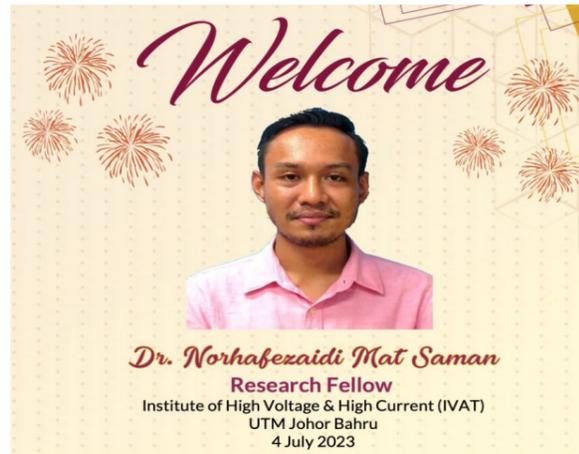
Group photo

Welcoming New Staff Members to IVAT



JOHOR BAHRU, 20 March 2024 – IVAT welcomes 5 new academic staff members to the institute. They are Dr. Norhafezaidi Mat Saman, Dr. Mohd Fadli Rahmat, Dr. Nur Aqilah Mohamad, Dr. Noor Syazwani Mansor, and Dr. Aizat Azmi. IVAT is hopeful that the addition of these new staff members to IVAT can bring new insights to the development of IVAT and achieve greater success in high voltage.

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



Understanding Chemical, Gas and Scheduled Waste Risk Management



Group photo

JOHOR BAHRU, 30 April 2024 – On 29 April 2024, an IVAT's staff member, Mr. Mohamad Syahrin Mohamad, attended a 2-day Short Course on Chemical, Gas, and Scheduled Waste Risk Management Course (Risk Assessment) at the Centre for Engineering Education, Level 2 and 3, Block C09, Universiti Teknologi Malaysia (UTM), Johor Bahru. The course was organised by UTM University Laboratory Management Centre, with the main objective to disseminate knowledge about chemicals, gases and scheduled waste management. During the training, the partici-

pants also had the opportunity to learn on how to complete the Hazard Identification, Risk Assessment and Risk Control (HIRARC) form of UTM.

The training was important for IVAT to manage its chemicals, gases, and wastes accordingly. IVAT hopes to fulfil the university's safe working environment by properly handling its chemicals, gases, and wastes.

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

Technical Visit from Universiti Malaysia Pahang Al-Sultan Abdullah

JOHOR BAHRU, 19 April 2024 – IVAT received a visit from academic staff members and students of the Faculty of Electrical and Electronics Engineering Technology (FTKEE), Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA), on 18 April 2024. The visit, led by Dr. Ahmad Syahiman Mohd Shah, aimed to enhance their knowledge of the high voltage laboratory and testing facilities at IVAT and explore potential collaborations between FTKEE and IVAT for research purposes.

During the visit, Ts. Dr. Aizat Azmi, assisted by assistant engineer Mr. Mohamad Syahrin Mohamad, represented IVAT. They warmly welcomed the guests from UMPSA, guided them through the IVAT laboratories, and provided detailed explanations of the services and capabilities offered by the institute.

IVAT is grateful for FTKEE's visit to its high voltage laboratory and look forward to a fruitful collaborations between both parties in the future.

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



Group photo

IVAT Joined Re-skilling Course: Awareness on MS ISO/IEC 17025: 2017



Group photo

JOHOR BAHRU, 28 February 2024 – On 27 February 2024, IVAT's staff members attended a short course on Introduction and Implementation of MS ISO/IEC 17025: 2017 and Risk Assessment at Bilik the Seminar Room of the Institute for Oil and Gas (IFOG), Universiti Teknologi Malaysia, Johor Bahru. The course was intended to educate participants about the introduction and implementation of the standard outlining the general requirements for the competence of testing and calibration laboratories, and its associated risk assessments.

All participants, including academic and non-academic personnel, have given full commitment and focus during the short course. Towards the end of the course, each of the participants was assessed through a quiz to gauge their level of understanding from attending the course.

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

Enhancing Staff Well-being and Prosperity: One Faculty, One Heart



Group photo of the faculty's staff during the "One Faculty, One Heart" event

JOHOR BAHRU, 20 March 2024 – "Satu Fakulti, Satu Hati" (One Faculty, One Heart) is an initiative by the Faculty of Electrical Engineering at Universiti Teknologi Malaysia (UTM) aimed at enhancing the well-being and prosperity of both staff members and students. The initiative reflects the faculty's commitment to creating a cohesive, supportive, and enriching environment, which is essential for academic and professional excellence.

The Faculty of Electrical Engineering at UTM offers a wide range of programmes designed to equip students with the necessary skills to excel in the rapidly evolving field of electrical engineering. Undergraduate students can specialise in areas such as Power Engineering, Mechatronics and Control Engineering, Electronic Engineering, Communication Engineering, and Biomedical Engineering and Health Sciences. These specialisations provide a solid theoretical foundation and practical experience through laboratory work, industrial training, and final year projects.

For postgraduate students, the Master of Engineering in Electrical Power and other research-based Master and Doctoral programmes are designed to deepen their expertise and prepare them for leadership roles in academia and industry. These programmes emphasise advanced research, critical problem-solving, and ethical professional practice.

The faculty's robust research environment is another cornerstone of the "Satu Fakulti, Satu Hati" initiative. The Department of Electrical Power Engineering, for instance, is involved in cutting-edge research in power systems, energy, power electronics, and high-voltage engineering. Research facilities such as the Institute of High Voltage and High Cur-

rent (IVAT) and the Centre of Energy System (CEES) support extensive research and consultancy activities, providing students and staff members with opportunities to engage in innovative projects.

The "Satu Fakulti, Satu Hati" initiative emphasises the importance of unity and mutual support among the faculty members and students. This sense of community is fostered through various activities and programmes that encourage collaboration, teamwork, and shared values. Regular events, workshops, and seminars provide platforms for students and staff members to share knowledge, experiences, and insights, thus enhancing their professional and personal growth.

Quality education is at the heart of the faculty's mission. The faculty adheres to rigorous academic quality assurance standards and continuously evaluates its educational objectives and outcomes. This ensures that graduates are not only technically proficient but also possess strong ethical standards, effective communication skills, and a commitment to lifelong learning.

The "Satu Fakulti, Satu Hati" initiative at the Faculty of Electrical Engineering, UTM, plays a crucial role in fostering a supportive and enriching environment for both staff members and students. By promoting unity, enhancing academic and professional growth, and ensuring quality education, the initiative contributes significantly to the prosperity and well-being of the entire faculty community.

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

IVAT Welcomes Visitors from Niigita University, Japan

JOHOR BAHRU, 27 February 2024 – On 26 February 2024, the IVAT welcomes visitors from Niigita University, Japa. The visit was accompanied by Dr. Nurzal Effiyana, Director of Centre of Engineering Education (CEE), Universiti Teknologi Malaysia (UTM). During the visit, IVAT's representatives, Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew and Dr. Norhafezaidi Mat Saman led the visit and gave an explanation about what activities and services that IVAT offered. IVAT's representatives also discussed with the visitors on potential activities related to high voltage, including teaching and learning, research and services that could be collaborated with Niigita University.



Group photo of the visitors with Dr. Nurzal Effiyana and Assoc. Prof. Dr. Lau (second and third from left, respectively) during the visit

IVAT thanks the visitors for spending their precious time to visit the laboratory and discuss about potential collaborations. IVAT would like to take this opportunity to welcome any visitors from schools, universities, governments, and

private sectors to visit IVAT. Please email to ivat@utm.my or contact 07-553 5615 for further information.

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

High Impact Publication Talk



Group photo of the speaker Dr. Lau (seventh from left) and the participants during the talk

JOHOR BAHRU, 11 March 2024 – IVAT held its High Impact Publication Talk on 10 March 2024. The talk was delivered by Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew, an associate professor of IVAT. The talk was specifically organised for postgraduate research (Master of Philosophy and Doctor of Philosophy) students from IVAT and other departments of the Faculty of Electrical Engineering, Universiti Teknologi Malaysia. Through the talk, the participants had the opportunity to learn on how to publish in high impact journals by professionally drafting their manuscripts. The two-hour programme was important for the participants as it not only emphasised quality publications, but also fostered passion in research among the participants.

During the talk, the participants also had the chance to identify the right journals, understand the proper steps for the submission and revision of manuscripts, and gain insights into writing publishable manuscripts.

All the participants gave a good response to the organisation of the programme. IVAT hopes that, from the talk, the participants have an overview and idea on how to publish in impactful journals. Programmes like this will be implemented regularly in the future and are expected to benefit all participants involved.

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

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

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IVAT's 2023 Management Review Cum Laboratory Working Instructions Review Workshop Successfully Held



Group photo of IVAT's staff during the workshop

JOHOR BAHRU, 27 November 2023 – IVAT held its management review cum laboratory working instructions review workshop for its calibration laboratory at Amari Johor Bahru on 27 November 2023.

In the morning, a management review meeting was carried out for IVAT's calibration laboratory accredited under the MS ISO/IEC 17025 standard. Various matters concerning the calibration activities of the laboratory were discussed. These included the review of the objectives and policies relevant to the laboratory, the analysis of risks and improvements related to the calibration jobs, and the implementation of corrective and preventive actions for the laboratory.

In the afternoon, a laboratory working instructions review workshop was conducted to review IVAT's practice in performing accredited calibration jobs for high voltage alternating current, high voltage direct current, high voltage impulse, and high current. A brainstorming session among IVAT's staff members on the calibration procedures was carried out, followed by detailed revisions for the laboratory working instructions.

All IVAT's staff members are thankful for participating in the fruitful workshop and look forward to a successful year ahead for IVAT's calibration activities.

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

IVAT's 2023 Family Day at Bidaisari Resort

JOHOR BAHRU, 02 September 2023 – On 01 September 2023, IVAT successfully held its Family Day at Bidaisari Resort, Janda Baik, Pahang. Various activities were organised for IVAT's staff members and their family members. The main purpose of the event was to strengthen the relationship between the staff members and also their family members in achieving work-life balance.

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



Group photo

Kursus Pemantapan Prestasi Kerja Profesionalisme



Gambar berkumpulan peserta kursus pemantapan prestasi kerja profesionalisme

JOHOR BAHRU, 20 Februari 2024 – Pada 18 Februari 2024, IVAT telah menjalankan kursus Pemantapan Prestasi Kerja Profesionalisme yang bertempat di Pulau Springs Resort, Johor Bahru selama 2 hari. Kursus tersebut bertujuan untuk memberikan motivasi di samping mengeratkan hubungan antara staf baru dengan staf sedia ada.

Kursus tersebut juga bertujuan bagi memantapkan lagi kerjasama antara semua staf IVAT supaya dapat memacu IVAT ke arah yang lebih cemerlang bersama-sama. Bak kata

pepatah, berat sama dipikul ringan sama dijinjing. Terdapat juga pelbagai aktiviti yang dijalankan sepanjang 2 hari berkampung di Pulau Springs Resort, Johor Bahru.

Staf IVAT berharap agar aktiviti sebegini dapat dijalankan setiap tahun bagi memotivasikan dan menaikkan semangat staf.

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

High Voltage Seminar on Switchgear by Petronas GTS

JOHOR BAHRU, 29 May 2024 – On 28 May 2024, IVAT, together with the Department of Electrical Power Engineering, Faculty of Electrical Engineering (FKE), Universiti Teknologi Malaysia (UTM), organised a High Voltage Seminar on the "Knowledge Sharing Session on High Voltage Switchgear Inspection, Testing and Maintenance". The seminar was delivered by Mr. Noor Ekhsan Mohd Isnain and Ir. Ts. Nor Azhar Bin Sa'ad of the PETRONAS Group Technical Solutions / Project Delivery and Technology. Mr. Noor Ekhsan is the Adjunct Associate Professor of FKE UTM. The seminar was attended by more than 140 students from high voltage courses, i.e., High Voltage Technology and High Voltage Testing and Calibration.



Photo during the high voltage seminar

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

Seminar on Publishing in ELEKTRIKA

JOHOR BAHRU, 29 April 2024 – IVAT held its seminar on Publishing in ELEKTRIKA on 28 April 2024. The talk was delivered by Dr. Noor Syazwani Mansor, a senior lecturer of IVAT. The talk was specifically organised for IVAT's staff and research student members to encourage more paper submissions to the ELEKTRIKA journal, a journal that belongs to the Faculty of Electrical Engineering, Universiti Teknologi Malaysia. During the seminar, the participants had the opportunity to better understand the requirements of the ELEKTRIKA



Dr. Noor Syazwani delivering her talk



Group photo

journal. The participants also had the opportunity to glance through the submission and publishing process of the ELEKTRIKA journal.

All the participants had a good engagement session during the seminar. IVAT sincerely hopes that the participants will start submitting their papers to the ELEKTRIKA journal in an effort to promote scientific publications.

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

Sesi Pengauditan bagi Anugerah Keselamatan dan Kesihatan Pekerja 2023

JOHOR BAHRU, 07 Mei 2024 – Pejabat Persekitaran, Keselamatan dan Kesihatan Pekerjaan (OSHE), Universiti Teknologi Malaysia (UTM) yang telah dilantik oleh Jawatankuasa Induk Citra Karisma 2024 sebagai Urus Setia telah datang ke IVAT bagi tujuan pengauditan bagi Anugerah Keselamatan dan Kesihatan Pekerja 2023 (AKKP 2023). Penganugerahan ini dibahagikan kepada lima (5) kategori iaitu Kategori Fakulti



Gambar ketika sesi pengauditan

UTM Johor Bahru, Kategori Jabatan Utama UTM Johor Bahru, Kategori Kluster UTM Johor, Kategori UTM Kuala Lumpur dan Kategori Entiti Penyelidikan. Pengauditan IVAT adalah di bawah Kategori Entiti Penyelidikan. Sesi pengauditan ini telah dijalankan bermula 1 April sehingga 27 Mei 2024. IVAT dari masa ke semasa sentiasa menyokong usaha universiti dalam aspek peningkatan keselamatan, kesihatan dan pekerjaan sejajar dengan dasar keselamatan dan kesihatan pekerjaan universiti. Pengurusan keselamatan dan kesihatan pekerjaan ini dapat membantu organisasi dapat meningkatkan prestasi keselamatan dan pematuhan kepada perundangan dan piawaian keselamatan dan kesihatan pekerjaan semua staf.

En. Hairoisyam Abd Rani, Institut Voltan dan Arus Tinggi, Universiti Teknologi Malaysia.

More News on IVAT and MyHVnet

In case you missed the previous news on IVAT, Issue 10 of IVAT Newsletter, published in June 2023, can be downloaded from the following link: <http://ivat.utm.my/newsletter/>

Meanwhile MyHVnet Newsletter (an initiative for the dissemination of high voltage related news, with particular emphasis on MyHVnet's activities), can be downloaded from the following link: <http://ivat.utm.my/myhvnet/news/>



2023 Internal Audit on IVAT's Assets

JOHOR BAHRU, 05 December 2023 – As the annual practice by the Universiti Teknologi Malaysia's Department of Deputy Vice Chancellor (Research and Innovations) (DDVCRI) office, all units under DDVCRI will be audited. For the year 2023, IVAT's assets were audited by the Institute for Smart Infrastructure and Innovative Construction (ISIIC), led by Dr. Shahrulnizahani Mohammad Din and 7 members. The audit was conducted on 04 December 2023 and all IVAT's assets in the office and laboratories were audited.



Photo during audit



Group photo

IVAT extends its special thanks to IVAT staff members, especially to IVAT's assets team, Mr. Mohd Nazren Mohd Ghazali, Mr. Hairoisyam Abd Rani, Ms. Nor Elliyana Mazlan, and Ms. Norhidayu Bakrin for their full cooperation and commitment given in ensuring the success of the audit session. IVAT also thanks DDVCRI and ISIIC for ensuring the smoothness of the audit session.

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

Mesyuarat Kaji Semula Pengurusan & Bengkel Pelan Strategik 2024



Group photo

JOHOR BAHRU, 22 Januari 2024 – Bertempat di Sunway Bigbox Hotel, Iskandar Puteri, Johor, IVAT telah menjalankan Mesyuarat Kaji Semula Pengurusan (Pengujian) dan Bengkel Pelan Strategik 2024. Mesyuarat tersebut lebih tertumpu kepada pengurusan dan aktiviti makmal pengujian sepanjang tahun 2023 yang diketuai oleh Ir. Ts. Dr. Mohd Hafizi Ahmad selaku Pengurus Kualiti Makmal Pengujian IVAT.

Di samping itu, pada sebelah petang, Bengkel Pelan Strategik 2024 bagi IVAT, yang diketuai oleh Pengarah IVAT, Ts. Dr. Zulkarnain Ahmad Noorden, telah diadakan. Pelbagai perkara dibincangkan bersama-sama staf akademik dan juga staf sokongan. Antaranya ialah hala tuju IVAT dan perancangan yang dapat memberikan impak kepada IVAT pada tahun 2024.

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

Other Happenings

Setinggi-tinggi **Tahniah**

Anugerah Perkhidmatan Cemerlang **CITRA KARISMA 2023**

Prof. Madya Dr. Mohamed Afendi Mohamed Pia
Fakulti Kejuruteraan Elektrik

En. Mohd Azrul Othman
Fakulti Kejuruteraan Elektrik

En. Mohamad Syahrin Mohamad
Jabatan Timbalan Naib Canselor (Penyelidikan & Inovasi)

Daripada: Seluruh Warga IVAT UTM

UTM 5 Star QS Overall Rating, TOP 50 Best Universities in Asia, TOP 20 QS World University Rankings

Setinggi-tinggi **Tahniah**

Anugerah Penerbitan
Anugerah Penulis Dalam Jurnal Berindeks (Pusat Kecemerlangan) **CITRA KARISMA 2023**

Prof. Madya, Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew

Profesor Dr. Zulkurnain Abdul Malek

Ts. Dr. Mohd Hafizi Ahmad

Institut Voltan & Arus Tinggi - IVAT
Universiti Teknologi Malaysia

1995

2023

UTM **Tahniah**

IR. TS. DR. MOHD HAFIZI BIN AHMAD
PENYARAH KANAN (DSS1)
Jabatan Kejuruteraan Elektrik Kuasa

atas penganugerahan
ASEAN CHARTERED PROFESSIONAL ENGINEER (ACPE)

berkuat kuasa
4 JUN 2024

ikhlas daripada:
Seluruh Warga Fakulti Kejuruteraan Elektrik

Congratulations

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

for being certified as
HRD CORP ACCREDITED TRAINER

12 July 2023

From:
Institute of High Voltage & High Current (IVAT) UTM

Congratulations!

Professional Engineer

Approved by
Board of Engineers Malaysia

Effective from 21 September 2023

From: All IVAT's Staff

Ir. Ts. Dr. Mohd Hafizi Ahmad
Quality Manager (Testing) / Research Fellow
Institute of High Voltage & High Current UTM

Institute of High Voltage & High Current

We are now on **LinkedIn**

Other Happenings

UTM **Selamat Bersara & Jasamu Dikenang**

PROFESOR MADYA DR. MOHAMED AFENDI MOHAMED PIAH

atas segala jasa dan bakti sepanjang berkhidmat di

Institut Voltan & Arus Tinggi / Fakulti Kejuruteraan Elektrik Universiti Teknologi Malaysia

2 Jan 1987 - 7 Nov 2023

Ikhlas daripada semua staf Institut Voltan & Arus Tinggi (IVAT)

IVAT's discussion with the Deputy Dean of Research and Innovation, Faculty of Electrical Engineering

UTM **CONGRATULATIONS!**

Recipients of UTM Flagship COE/RG Grant 2023
Program : High-Purity Graphene Production via Optimized High-Voltage Plasma for Ultracapacitor Application

Ir. Ts. Dr. Mohd Hafizi Ahmad
Project 1 : Optimization of VLFV Air Atmospheric Pressure Plasma Generation via Advanced Magnetic Field and Processed Parameter Control Techniques

Dr. Norhafezaidi Mat Saman
Project 2 : Scalable Gas-Phase Graphene Synthesis via VLFV-Induced Plasma

Ts. Dr. Zulkurnain Ahmad Noorden
Project 3 : High-Energy Ultracapacitor with Plasma-Mediated Graphene Aerogel Electrodes

Program Leader : Ts. Dr. Zulkurnain Ahmad Noorden
RM 500,000.00
1st Jan 2024 - 31st Dec 2026

From: Staff of IVAT UTM

UTM **Congratulations!**

Recipients of Fundamental Research Grant Scheme 1/2023
Total amount approved: RM443,790.00

Assoc. Prof. Eur. Ing. Ir. Ts. Dr. Lau Kwan Yiew
Dielectric Breakdown Mechanisms of Thermally Aged Polypropylene and Elastomer Blends
RM143,710.00

Prof. Dr. Zulkurnain Abdul Malek
Characterisation of Superconductor-Based Triple Winding Pulsed Power Transformer
RM186,080.00

Ts. Dr. Noor Azlinda Ahmad
Investigation on the Electrical Properties of Polypropylene/ Elastomer Blend with Surface Treated Nanotitania for High Voltage Insulation
RM114,000.00

UTM Johor Bahru

UTM **IVAT** Universiti Teknologi Malaysia **Institute of High Voltage and High Current**

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Welcome to IVAT

Our professional commitment in **EDUCATION** for high voltage and electrical technologies

IVAT Website's New Look

Welcome to IVAT

IVAT, Universiti Teknologi Malaysia (UTM), is committed to entertain visits by delegates from not only its own university, but also as far as overseas. The main aim for IVAT organising visits is to share their research, services and consultancy experience to as many people as they could, especially in areas relevant to high voltage engineering.

For interested students from schools or higher learning institutions, the focus of visit would be on IVAT's role in building the nation through their technical support to electrical energy industries to achieve reliable and efficient operations. This is inculcated through their fascinating demonstration on high voltage air discharges (either impulsive or sustainable low current arcs).

For representatives from private companies, IVAT showcases their services and consultancy capabilities, as well as their research achievements, in attempts to increase the return of investments to the university. As for executives of ministerial bodies and government parastatals, IVAT extends their knowledge and experience to open possible collaborations on research works.

A routine visit to IVAT would include a 5-minute video presentation on IVAT, followed by a 10-minute briefing by an IVAT's academician, then a question-and-answer session on any topic relevant to the visit. Interested parties are most welcome to visit IVAT.

Photos taken during visits to IVAT



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Published by:

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

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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.