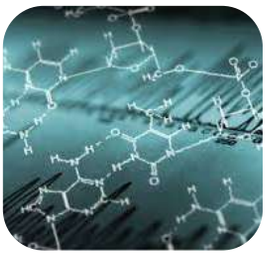

Berita IKM - Chemistry in Malaysia

December 2024

Institut Kimia Malaysia

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MESSAGE FROM THE PRESIDENT

For the year 2024, what have we done?

I believe that 2024 is a good year for us. We managed to achieve the following:

- **Forum on Continuous Professional Development (CPD) Programme for Registered Chemists under Chemists Act 1975 (Act 158)** &
- **IKM 57th Annual General Meeting** on 30th March 2024.
- **The International Congress on Pure & Applied Chemistry Mongolia (ICPAC Mongolia) 2024** from 28th August – 1st September 2024 in Ulaanbaatar, Mongolia.
- **K_3M 2024** with a record number of 40,301 participants from 957 schools taking part, was held on 17th October 2024 in all schools taking part.
- **Malam Kimia 2024 – 53rd IKM Gala Dinner and Presentation of IKM Awards** was held in One World Hotel, Petaling Jaya on Friday, 6th December 2024. Close to 700 guests attended this IKM gala dinner.
- **CHEMISTS RULES 2024** was finally approved and signed by the Honourable Minister of the Ministry of Science, Technology and Innovation (MOSTI) and published in the government gazette on the 5th day of June 2024.
- **PROGRAMME STANDARD FOR CHEMISTRY -** Another major development was the adoption of our **Chemistry Programme Standard** for Malaysian universities by the Malaysian Qualification Agency (MQA). This Standard is approved by the Malaysian Qualification Agency (MQA) for accreditation of undergraduate chemistry programmes in Malaysian universities with MQA.

For 2025, our main concentration is on **IUPAC 2025**.

IUPAC 2025

Our main focus in 2025 will be **IUPAC 2025** which comprises the **53rd IUPAC General Assembly (53GA)** and **50th World Chemistry Congress (50WCC)**. **IUPAC 2025** will be held in the Kuala Lumpur Convention Centre (KLCC) from 12 – 19th July 2025 with the theme of "***Chemistry for Sustainable Future***". We have started some serious work on **IUPAC 2025** including the establishment of the National Organising Committee (NOC), the International Advisory Board (IAB) and the Scientific Committee (SC). We have also invited 12 eminent scientists to be our Plenary Speakers. Please refer to the website, **iupac2025.org** for more information.

The **53GA** programmes are being finalised now and it will be from 12 – 16th July 2025 at KLCC.

For **50WCC**, we have three Clusters of scientific sessions comprising I) Pure & Applied Chemistry, II) Chemistry & SDGs and III) Thematic Sessions. These Sessions are managed by IUPAC Divisions & Committees, IKM and other Collaborating Organisations. We are now inviting Keynotes, Invited Lectures and voluntary submissions.

The website, **iupac2025.org** is now open, inviting registration and submission of abstracts. It is starting slowly and hopefully; it will gather momentum after the start of 2025. We are working hard to ensure the success of **IUPAC 2025**.

IUPAC 2025 is your event and I look forward to seeing all of you at **IUPAC 2025**.

Datuk ChM Dr Soon Ting Kueh
President, Institut Kimia Malaysia
Date: 16th December 2024

The International Workshop on Advancing Food Analysis, Safety, and Testing Standards for Global Comparability

The International Workshop on Advancing Food Analysis, Safety, and Testing Standards for Global Comparability, organized by the Asia Pacific Food Analysis Network (APFAN) in collaboration with the Centre for Healthy Ageing and Wellness (H-Care), Faculty of Health Sciences, Universiti Kebangsaan Malaysia (UKM), and the Department of Chemistry Malaysia, was attended by 150 participants from the Asia-Pacific region.

This annual workshop, which rotates between various countries in the Asia-Pacific region involved with APFAN, was held at the Everly Hotel, Putrajaya, for three days, from 15 July 2024 to 17 July 2024. Participants from Malaysia, Singapore, Brunei, Indonesia, Thailand, Myanmar, the Philippines, the Republic of Korea, Taiwan, Papua New Guinea, and Australia took part. The workshop was officiated by ChM Marhayani Md. Saad, Director General, Department of Chemistry (KIMIA Malaysia). The workshop was held for the first time in Malaysia, and chaired by Assoc. Prof. Dr. Hasnah Haron (H-Care, UKM & IKM Division of Food Science and Nutrition (DFSN) member), together with Prof. Dr. Wan Aida Wan Mustapha (Deputy Chairperson I, UKM) and ChM Dr. Siti Nur Nazathul Shima Hashim (Deputy Chairperson II, KIMIA Malaysia). ChM Dr. Li Hui Ling moderated the session featuring Prof. Dr. Philip Marriott from Monash University. Representatives from IKM DFSN include Assoc. Prof. Dr. Adi Md Sikin (UiTM), Dr. Penny Chong Pei Nee (IMU) and ChM Dr. Nor Shifa bin Shuib (KIMIA Malaysia, Penang).

The workshop's scientific quality was exceptional, covering a broad range of topics such as method validation, food analysis, food microbiology, proficiency testing, food safety and security, and laboratory accreditation requirements. This breadth affirmed the importance of accurate findings in food safety research and encouraged a broader view by incorporating diverse ideas and perspectives. The workshop began with a plenary lecture by Ms. Ts. Zailina Abdul Majid, the Director of the Policy, Strategic Planning, and Codex Standards Division, Program for Food Safety and Quality, Ministry of Health Malaysia, who delivered a talk entitled "Waving New Pathways in Food Analysis in Malaysia: Integrated Approach." She emphasized the critical role of food analysis in shaping informed decisions and harmonizing food safety policies across the region. Other plenary speakers echoed this message, underscoring the importance of regional collaboration in addressing food safety challenges.

On the second day, the workshop focused on specific areas of food analysis, such as contaminants in selected foods. A lecture entitled "Unveiling Honey Authenticity: Analysis of C-4 Plant Sugar Adulteration Using EA-IRMS," was delivered by KIMIA Malaysia. This session provided valuable insights, particularly on palm sugar authenticity. The final day of the workshop concentrated on proficiency testing, with a detailed discussion on the statistical analysis of data obtained from multiple laboratories. Presenters from Korea, Philippines, and Singapore shared their experiences, highlighting the importance of collaborative work and data-sharing across the Asia-Pacific region.

Recognizing the need to enhance the efficiency and capability of regional food analysis laboratories, APFAN is conducting a multi-phase project involving the production and free distribution of Proficiency Test (PT) materials to food analysis laboratories across the Asia-Pacific region. During the workshop, PT results were discussed in detail, allowing participants to improve their analytical methods and adopt standardized approaches to food analysis. Following the plenary sessions, there were six presentation sessions covering topics such as Methods Validation, Food Analysis, Advanced Food Analysis, Food Microbiology, Proficiency Testing, and Reference Materials. The final session included a discussion on the results of PT analyses distributed during last year's workshop.

The workshop was sponsored by MyCO2, Gerhardt Malaysia Sdn. Bhd., Waters Analytical Instruments Sdn. Bhd., Bruker Singapore Pte. Ltd., Sartorius Malaysia Sdn. Bhd., Agilent Technologies Singapore (sales) Pte Ltd, and BMS Diagnostics (M) Sdn. Bhd. APFAN annual meeting was held in conjunction with the workshop. This gathering brought together APFAN representatives from across the region to discuss strategic objectives, collaborative projects, and the ongoing support for advancing food analysis capabilities in Asia-Pacific. Representing Malaysia, ChM Dr. Li Hui Ling, Chairperson of IKM DFSN, serves as the Honorary Treasurer for APFAN. Her role as Treasurer underscores Malaysia's active involvement in the network, contributing to APFAN's mission to enhance food safety and testing standards and ensure comparability across international laboratories.


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Palm Oil Unveiled: Navigating the Path to Sustainable Growth and Global Impact

Joseph Tek Choon Yee
Ex-Chief Executive, Malaysian Palm Oil Association

Palm Oil's Global Significance

Ban Ki-Moon once stated, "Sustainable development offers the best chance to adjust our course. Saving our planet, lifting people out of poverty, advancing economic growth... these are ONE and SAME FIGHT."

Today, palm oil, a top ten globally traded vegetable oil with over 5,000 years of history, is found in 1 in 10 food products worldwide. In Malaysia, the oil palm industry has significantly boosted socio-economic prosperity and stability, particularly in rural areas. Despite its benefits, the true impact of Malaysian palm oil is often underestimated. The debate continues on whether palm oil is a blessing or a curse, but it remains a crucial element in modern food systems including for food security.

Oil palm's Triple Bottom Line

Sustainable development requires balancing environmental, social and economic concerns. The 1987 Brundtland Report advocates for this holistic approach. For developing countries, sustainability must include economic development. The "Triple Bottom Line" of Planet, People and Profit often reflects developed nations' priorities, but developing nations need to optimise land use for both economic and environmental goals. Oil palm cultivation in Malaysia exemplifies this balance, demonstrating how industry can drive progress while supporting social-environmental stewardship.

The principle of Common but Differentiated Responsibilities (CBDR) from the 1992 Earth Summit acknowledges varying capacities and responsibilities between developed and developing countries. While all nations face environmental challenges, approaches should be tailored to their specific contexts. The Malaysian palm oil industry serves as a model of how economic growth and environmental care can co-exist, offering valuable lessons for many other developing economies. Every sovereign nation possesses the fundamental right to harness and develop its resources, including land, to secure economic sustainability, support its population and achieve its development objectives. This involves leveraging its resources to stimulate economic growth and enhance living standards. While it is crucial to balance these needs with environmental and social responsibilities, each country should have the autonomy to follow its own development trajectory while addressing global challenges in a responsible and sustainable manner.

Efficiency of Oil Palm

The oil palm (*Elaeis guineensis*), is highly efficient, producing up to eight times more oil per hectare than other oilseeds. In Malaysia, which cultivates oil palm on just 17% of its land, this crop contributes 20% of global edible oil exports. Notably, Malaysian oil palm growers achieve this without relying on farming subsidies instead contributing significantly to national development. The crop's energy efficiency further highlights its sustainability, with an energy balance ratio of 9.6 compared to lower ratios for other oilseeds, reducing emissions and conserving resources.

PEOPLE AGENDA: Palm Oil -A Beacon of Socio-Economic Empowerment

Palm oil demonstrates how human development and environmental stewardship can harmoniously co-exist. This highly efficient crop drives socio-economic progress while minimising environmental impact, illustrating that sustainable agriculture benefits both people and the planet.

Providing for People
Palm oil stands out for its efficiency, requiring fewer pesticides, fertilisers and fuels than other oilseeds. Its high energy output per unit of input makes it a model of sustainability, balancing human needs with environmental protection.

Upgrading Livelihoods
Oil palm cultivation in Malaysia has significantly uplifted rural communities especially the 450,000 smallholders. The sector employs nearly 3 million people, providing jobs, entrepreneurial opportunities and essential services like housing, clean water and education. This has greatly enhanced living standards in plantation landscapes and surrounding communities.

Economic and Social Benefits
Advanced plantation management in Malaysia, supported by industry-funded R&D, has driven the sector's growth. Smallholders benefit from technological advancements and expert guidance. The palm oil industry's downstream activities contribute billions to national revenue, funding further economic and social development. Despite rising costs, the sector has remained a robust contributor to government revenues for development, highlighting its economic importance.

Poverty Alleviation
The Federal Land Development Authority (FELDA) exemplifies how palm oil can alleviate poverty. FELDA's initiatives in land development and infrastructure have benefited around 90,511 settlers. This model has inspired other developing countries to use palm oil for poverty reduction.

Global Food Security
Palm oil's affordability relative to other edible oils and high yields are vital for global food security, reaching over 3 billion people in more than 150 countries. Efforts to boycott palm oil could destabilise economies, disrupt supply chains and worsen food insecurity. It is worth to note that palm kernel oil (PKO) played a crucial role during the COVID-19 pandemic in producing essential sanitising products, underscoring its significance beyond the food industry.

Health and Nutrition
Palm oil provides a balanced mix of unsaturated and saturated fats. It contains monounsaturated oleic acid and palmitic acid, which does not raise cholesterol levels as much as other saturated fats. It supports the absorption of essential vitamins and is rich in antioxidants like tocopherols and carotenoids, which benefit overall health. Its stability under heat makes it ideal for cooking, maintaining nutritional integrity.

Versatility and Essentiality
Palm oil's versatility makes it indispensable in various sectors. Its unique properties enhance products in food, cosmetics and personal care. Its adaptability through fractionation allows for specialised uses, such as in margarine and baked goods. Additionally, palm oil meets GMO-free and halal criteria, making it a preferred choice in many markets.

PLANET AGENDA: Eco-Friendly Power of Palm Oil
Palm oil showcases how agricultural practices can support both economic development and environmental sustainability through responsible practices and land use.

Oil Palm Trees: Malaysia's Carbon Capturers
Malaysia boasts over 700 million oil palm trees, providing significant environmental benefits. These trees, with their year-round green canopy, excel at absorbing CO_2 and releasing oxygen. In 2021, oil palms, covering 24 million hectares globally, produced 508 million tonnes of oxygen, or 21.3 tonnes per hectare, far surpassing soybean plants, which released 334 million tonnes of oxygen from 130.5 million hectares—just 2.56 tonnes per hectare. Oil palms also absorbed more CO_2, capturing 699 million tonnes (29.3 tonnes per hectare) compared to soybeans' 459 million tonnes (3.52 tonnes per hectare). Additionally, oil palm plantations absorb up to 36.5 tonnes of dry matter per hectare annually and accumulate more biomass than natural rainforests.

Oil Palm and Deforestation
Accurate information is crucial in evaluating environmental impacts. Misleading comparisons, such as claiming deforestation rates equivalent to "300 football fields per hour," distort the reality. In reality, Malaysia's oil palm plantations, covering 5.7 million hectares, contribute significantly to global oil production while occupying less than 0.5% of the global agricultural land. Historically, deforestation has been driven more by timber extraction than oil palm cultivation. Oil palm plantations in Malaysa have typically been established on previously logged-over or abandoned lands, or on land converted from other tropical plantation crops like rubber and cocoa, not on pristine rainforests. The available data reveals that Malaysia maintains over 50% forest cover, balancing conservation with development.

Commitment to Sustainability
Malaysia implements sustainable good agricultural practices, including zero-burning and nutrient recycling. The mandatory Malaysian Sustainable Palm Oil (MSPO) certification and the voluntary B2B Roundtable on Sustainable Palm Oil (RSPO) ensure high sustainability standards across the supply chain. Malaysia's commitment is evident in these rigorous certifications and practices.

Renewable Energy Potential
Palm oil can be integral to Malaysia's green energy strategy. The national energy transition roadmap aims for a 30% biodiesel blending mandate (B30) by 2030, reflecting the country's dedication to reducing fossil fuel dependence and advancing sustainable energy.

Shared Home for Life

Oil palm plantations, situated on legally designated lands not specifically reserved for conservation, can still support a rich array of ecosystems. Research shows that these plantations sustain over 200 species of flora and fauna, including insects, reptiles, fish, birds, and small mammals. While there have been concerns about orangutan populations, they continue to persist, and additional conservation efforts could further enhance their numbers. Furthermore, plantations located near forest edges often include riparian reserves along rivers, which play a crucial role in preserving biodiversity, controlling erosion, and providing essential wildlife corridors.

MOVING FORWARD: Charting the Future of Malaysia's Palm Oil Industry

Malaysia's oil palm industry stands as a model of progress and sustainability, with ongoing efforts to enhance its positive impact. The path forward involves leveraging innovations and business strategies to ensure long-term success and sustainability.

Key areas of focus include:

Implementing Best Practices:

Adopting and enhancing Best Management Practices (BMPs) is crucial for boosting productivity and environmental stewardship. Addressing inefficiencies and integrating effective policies will maintain the sector's leadership in sustainability.

Strengthening Conservation Initiatives:

Malaysia must enhance land-use regulations and conservation efforts to protect primary forests and biodiversity.

Expanding Bio-Circular Economy:

Utilising the 90% of biomass from oil palm that is currently underused presents opportunities for value addition and renewable energy. Ensuring these advancements are economically viable is essential.

Empowering Smallholders and Improving Working Conditions:

Support for smallholders through sustainable practices and improving working conditions are vital for a fair and inclusive industry.

Advocating for Global Food Security:

The palm oil sector should emphasize its role in global food systems and engage in transparent discussions to counter misconceptions.

Leveraging Versatility:

Investing in research and technological advancements will ensure palm oil's relevance and quality across various industries.

Driving Innovations:

Embracing new but best-fit technologies such as AI, big data, and blockchain will drive progress. Addressing ongoing negative perceptions requires substantiating sustainability claims with data-driven proof.

Fostering Transparency and Accountability:

High standards of reporting and traceability are crucial for building trust and ensuring ethical practices.

Balancing Regulation and Business Needs:

Regulatory frameworks should be tailored to the sector's specific needs, ensuring they are practical and aligned with business objectives.

Leadership and Engagement:

Sustaining momentum requires effective leadership and engaging younger generations to ensure the sector's future vitality.

CONCLUSION

Malaysia's palm oil sector, deeply intertwined with its rural landscapes and reliant on long-term reinvestments, stands at a pivotal crossroads filled with both remarkable challenges and exciting opportunities. Despite its labour-intensive nature and dependence on foreign workers, the sector is a linchpin for the nation's social, economic and political stability and can showcase its alignment with the UN Sustainable Development Goals. To thrive and secure global alignment, it is imperative to craft and implement enabling policies that not only recognise but embrace the sector's complexities and contributions.

Galvanising all relevant stakeholders across the supply chain and collaborating with the authorities, and under visionary leadership, will be key to unlocking the sector's full potential. By harnessing its resources responsibly and innovatively, Malaysia can solidify its role as a global steward of this invaluable asset. The decision facing Malaysia is crucial: it can either mismanage this national treasure, maintain the status quo, or boldly leverage its strengths to achieve enduring success and sustainability. The path chosen will define the sector's future and Malaysia's place on the global stage.

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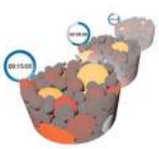

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40 x 3 cm concrete core. 7 mm volume of interest scanned at 5 µm voxel size.

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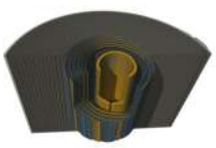
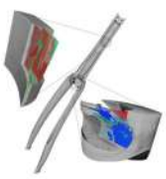


Lithium ion battery, showing section of overview scan and VOIS inset at higher resolution. Field of view: 18 mm



Defects identified in carbon fiber composite bicycle fork, illustrating VOIS feature.

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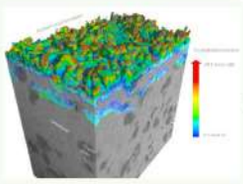

3D render of 138 scans of a crystallizing gypsum crust on a sandy limestone. Color corresponds to the time evolution of the gypsum formation and sub-surface microporous layers.

Germination of cress seeds observed in the DynaTOM

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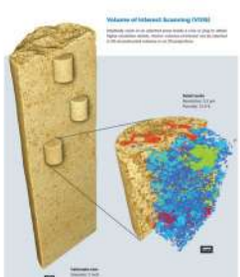
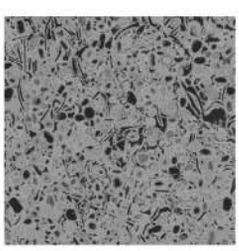


Selected volumes of interest inside a 2 inch carbonate core showing pore scale information.

Interior view of TESCAN CoreTOM, showing a mounted rock specimen.



Reconstructed slice through oolithic limestone (voxel size: 3.4 µm).

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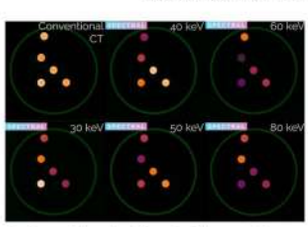
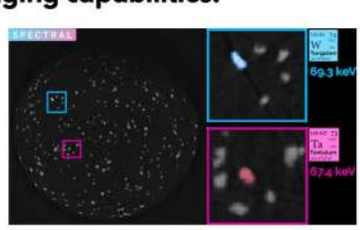


TrueContrast™ provides differentiation between phases that traditional micro-CT (top left) cannot differentiate. Full spectral analysis enables multienergy CT - in a single scan, identifying the five different chemical compositions in this sample.



Absolute identification of Ta and W in an ore mineral sample using K-edge localization. Even edges close together can be separated.

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10th IUPAC International Conference on Green Chemistry (10th IUPAC ICGC 2024)

The 10th IUPAC International Conference on Green Chemistry (10th IUPAC ICGC) took place on 18-22 October, 2024, at the Beijing International Convention Center (BICC), Beijing, China. The conference was co-organized by the Chinese Chemical Society, Institute of Chemistry, Chinese Academy of Sciences, and IUPAC Interdivisional Committee on Green Chemistry for Sustainable Development (ICGCSD). It was first held in Germany (2006), followed by Russia (2008), Canada (2010), Brazil (2012), South Africa (2014), Italy (2016), Russia (2017), Thailand (2018), and Greece (2022).

The organizer extended a prestigious invitation to IKM representatives for this special event. The IKM group was led by Datuk ChM Dr. Soon Ting Kueh, Academician ChM Dr. Ho Chee Cheong, Prof. ChM Dr. Juan Joon Ching, Assoc. Prof. ChM Dr. Lim Teck Hock, and Assoc. Prof. ChM Dr Lee Hwei Voon. These esteemed individuals have been designated to serve as chairpersons and deliver invited presentations in plenary and parallel scientific sessions.

The 10th IUPAC ICGC, focused on 'Green Chemistry for Carbon Neutrality and Sustainable Development', successfully assembles a various group of participants from academia, researchers, industry professionals, NGOs, policymakers, and member of society. This event aimed to promote green chemistry, carbon neutrality, and sustainable development through productive discussions, knowledge exchange, and the sharing of innovative concepts and research findings.

The event featured 9 plenary lectures alongside 9 parallel sessions, which included 74 keynote addresses and 107 invited talks. Additionally, there were 117 oral presentations and 182 poster sessions, showcasing research from participants at various career stages (ranging from students to established researchers). These attendees hailed from 56 countries and engaged in discussions on a diverse array of significant and relevant subjects.

The 10th IUPAC ICGC featured scientific sessions covering 9 primary topics, which encompassed:

- Green synthesis
- Green catalysis
- Green solvents
- Carbon dioxide utilization
- Transformation of biomass and plastic waste
- Green energy
- Green chemical engineering and technology
- Green chemistry education
- PhosAgro/UNESCO/IUPAC international symposium

OFFICIAL OPENING CEREMONY

The open ceremony of 10th IUPAC ICGC was welcomed by the Zhimin Liu, Chair of the Organizing Committee Institute of Chemistry, CAS; Buxing Han, Chair of the International Scientific Committee Institute of Chemistry, CAS; Ehud Keinan, President of International Union of Pure and Applied Chemistry; Li-Jun Wan, President of Chinese Chemical Society; and Shu Wang, Director of Institute of Chemistry, Chinese Academy of Sciences.

The ceremony continued with presentation of PhosAgro/ UNESCO/IUPAC awards, chaired by Christopher Brett, president of IUPAC 2020-21. During this session, the PhosAgro/ UNESCO/IUPAC green chemistry research grants were awarded to 7 world's top young scientists from around the world, representing Brazil, Russia, Tunisia, UAE, Portugal, and Pakistan. These researchers are dedicated to developing innovative technologies in environmental protection, healthcare, food security, energy efficiency and the sustainable use of natural resources.

PLENARY LECTURES

Chair of plenary session: Natalia Tarasova

The role of water in green carbon science
Mingyuan He, East China Normal University

Green chemistry in a changing world
Martyn Poliakoff, University of Nottingham

Chair of plenary session: Soon Ting Kueh
Molecular Approaches Toward Turning the World's Biggest Challenges into the World's Biggest Opportunities
Paul Anastas, Yale University

Artificial Photosynthesis for Chemical Transformation
Li-Zhu Wu, Technical Institute of Physics and Chemistry

Chair of plenary session: Christopher Brett
Catalyzing Green Chemistry: Unlocking Previously Inaccessible Chemical with Mesoporous Zeolites
Javier García Martínez, The University of Alicante

Humanity faces a bright future, and so Chemistry
Ehud Keinan, Technion-Israel Institute of Technology

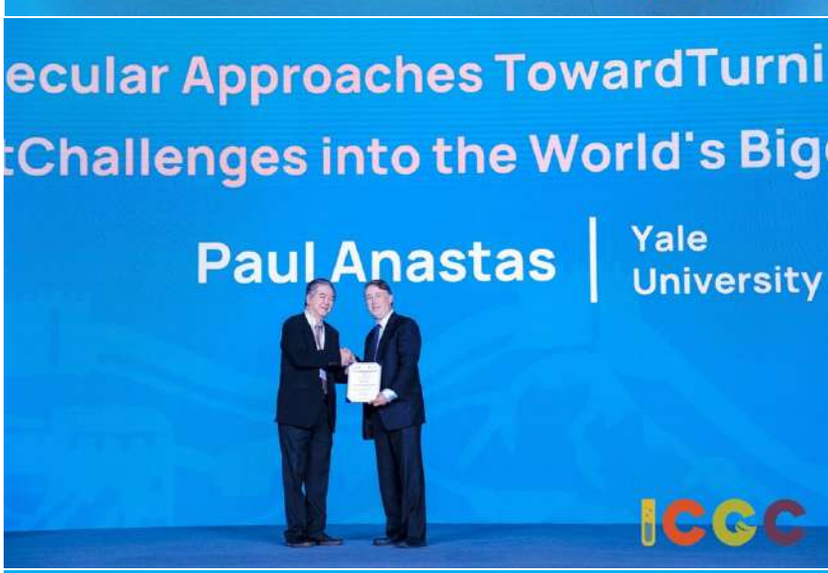
Green chemistry for the energy transition – Pathways to enhance catalytic rates for metal and acid-base catalysis in aqueous phase
Johannes A. Lercher, Technical University of Munich

Chair of plenary session: Buxing Han
Photocatalytic water splitting to produce green hydrogen as fuels
Kazunari Domen, Shinshu University/ The University of Tokyo

Our Future Green Challenges in Chemical Productions
Chao-Jun Li, McGill University

CLOSING CEREMONY
During the closing ceremony, the Best Poster Award was presented to the top posters with certificates. A Malaysian delegate, Han Yin Lim from Monash University Malaysia received this honor for her work titled "Polyethylene Glycol as a Green Medium for the Microwave-Assisted Synthesis of Guanamines". Subsequently, Prof. Ana Aguiar-Ricardo of NOVA University Lisbon announced that the 11th IUPAC International Conference on Green Chemistry (11th IUPAC ICGC) is provisionally scheduled for September/October 2026 in Lisbon, Portugal. Scientific topics include green synthetic methodologies, green catalysis, green solvents, green energy, green (bio)chemical engineering and technology, CO2 utilization, utilization of waste resources, green chemistry education, AI, and green chemistry. In addition, Datuk ChM Dr. Soon Ting Kueh, IKM President, extended the cordial invitation to all delegates for IUPAC 2025 in Kuala Lumpur, Malaysia. Finally, the event concluded with the Organizing Committee expressing gratitude to all delegates for their contributions to the success of the 10th IUPAC ICGC.

Report by
Assoc Prof ChM Dr Lee Hwei Voon

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12th - 15th July 2025
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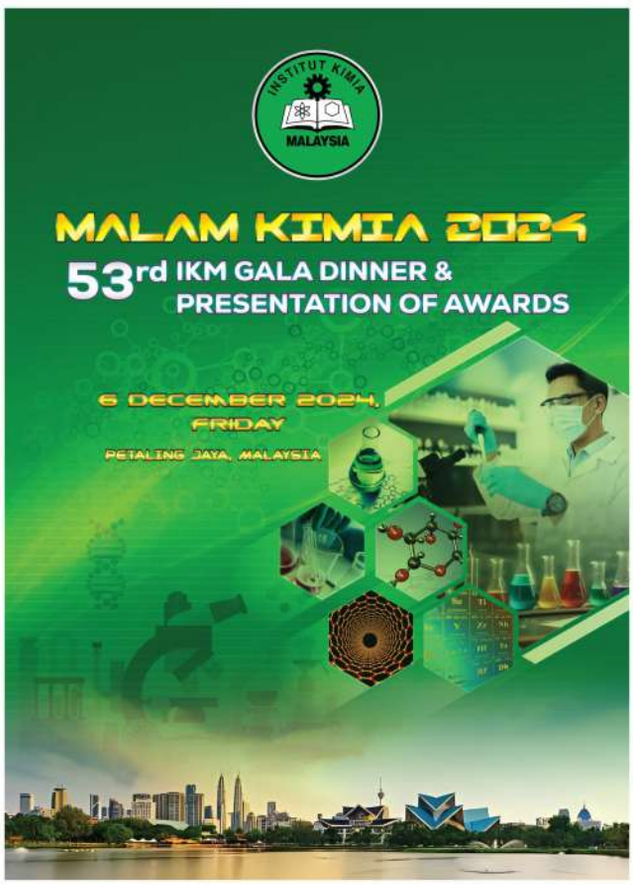
MALAM KIMIA 2024
53RD IKM GALA DINNER & PRESENTATION OF AWARDS
6 December 2024



Institut Kimia Malaysia (IKM) successfully organized the Malam Kimia 2024 - 53RD IKM Gala Dinner & Presentation of Awards on 6 December 2024 at One World Hotel, Petaling Jaya, Selangor. YBhg Dato' Ts. Dr. Hj. Aminuddin bin Hassim, *Secretary General, Ministry of Science, Technology & Innovation* was the Guest-of-Honour at this event. Malam Kimia is an annual gala event where we recognise excellence in chemistry and contributions to IKM and the development of chemistry in Malaysia. The awards presented were as follows: K_3M Top Scorer Awards, IKM Merit Awards, IKM Graduate Chemistry Medals, IKM Research Prize in Polymer & Materials Science, IKM/RSC-Synthomer Award in Polymer Science, Tan Sri Datuk Ong Kee Hui Postgraduate Chemistry Medal, Outstanding Young Chemist Awards, IKM Citation Awards, New Fellows of IKM, IKM Gold Medal and IKM Laboratory Excellence Awards.

This year we presented IKM Final Examination Certificates to those who passed the IKM Final Examinations in 2024. A total of 55 candidates passed the examination in 2024. Malam Kimia 2024 managed to attract a total of 690 guests comprising IKM members, S&T organizations, universities and industries as well as well-wishers. The event was a great success. On behalf of the Organizers, IKM would like to record our sincere appreciation to Ministry of Science, Technology and Innovation (MOSTI), OHAUS Corporation, Inno Lab Engineering Sdn Bhd, Novatiq Scientific Sdn Bhd,

Award	Recipient
IKM Gold Medal	Prof ChM Dr Juan Joon Ching
New Fellows of IKM	ChM Halimah Binti Abdul Rahim, Assoc. Prof. ChM Dr. Melati Binti Khairuddean, Assoc. Prof. ChM Dr. Mohd Sani bin Sarjadi, ChM Dr. Ngai Koh Sing, Assoc. Prof. ChM Dr. Nor Aziyah binti Bakhari, Prof. ChM Dr. Phang Sook Wai, ChM Suzanna J Rice Oxley, Assoc. Prof. ChM Dr. Moh Pak Yan, ChM Abd Rahim Bin Othman
IKM Citation Award	Prof. ChM Dr. Chong Kwok Feng, ChM Dr. Nurfaizah Binti Abu Tahrim
IKM Outstanding Young Chemist Award	Academic Category - Assoc. Prof. ChM Dr. See Hong Heng Industry Category - ChM Dr. Jeyanny Vijayanathan
Tan Sri Datuk Ong Kee Hui Postgraduate Chemistry Medal	Dr. Emma Izzati binti Zakariah
IKM/RSC – Synthomer Award in Polymer Science sponsored by Synthomer Sdn Bhd	Dr Muhammad Faiz bin Aizamddin
IKM Research Prize in Polymer and Materials Science sponsored by HARPS Global and Synthomer Sdn Bhd	Abdul Rehman, Chan Yu Bin, Kou Lijie, Nur Shamimie Nadzwin Binti Hasnan, Salma Izati Binti Sinar Mashuri, Yusuf Jameel
IKM Graduate Chemistry Medals	Chan Kai Qing, Chang Wei Jin, Izzhan Zafri Bin Haron, Lau Thorng En, Nuratiqah Ramadaniah Binti Mohammad, Tan Yi Ying, Tay Chia Pao

Malaysian Rubber Glove Manufacturers Association (MARGMA), Conference Partners Sdn Bhd, IKA Works (Asia) Sdn Bhd, Trienekens (Sarawak) Sdn Bhd, SugarBomb Worldwide Sdn Bhd, Mirror Gifts Resources, Orbiting Scientific & Technology Sdn Bhd, Scot Printers, all IKM Branches and all those who have contributed to the success of Malam Kimia 2024 - 53RD IKM Gala Dinner & Presentation of Awards.

IKM Final Examinations 2024 - Passed Candidates	
Afza Adlina Binti Ab Halim	Muhammad Dzul Ammar Bin Aslan
Alan Chua Yee Quan	Muhammad Heiqal bin Jemain
Alyaa Filza Binti Effendi	Muhammad Khairil Anuar
Basyirah Binti Muda	Muhammad Taqiuddin Bin Halin
Chan Xian Yang, Dr	Ng Khai Shin
Chang Mui Ting	Nik Mohamad Azren Bin Mohd Zubir
Chen Mei Yin, Dr	Nik Muhamad Syazwan Bin Nik Rosli
Deena Akmaliah Binti Yosree	Noor Hafizah Binti Abd Wahab
Farah Farena Binti Usari	Nor Azman Bin Kasan, Assoc Prof Dr
Faris Zakry Bin Ahmad Nazri	Nor Syazwan Bin Nor Salim
Fatimah Marwa Binti Jaapar	Noraidah binti Haini, Dr
Halimatun Sa'adiah Binti Abdul Halim	Norazlin Binti Amrun
Harissa Shazana Binti Mohd Nor Azmi	Norzulaiha Binti Sukeri
Haslinda Binti Husin	Nur Alia Adnin Binti Zainol Abidin
Hong Xiu Ping	Nur Iziani Binti Abdul Razak
Jack Sia Kee Thai	Nur Syafiqah Binti Sauta
Jauhariatul Aida Binti Johar	Nurhazwani Binti Mohd Hirmizi
Koh Chia En	Nurul Lyana Binti A Rahman
Kok Lye Shyan	Nurul Shahirah Binti Aziz, Dr
Lau Ching Ching, Dr	Omysyamimi Binti Markom
Lee Xin Xian	Saiyidah Atikah Binti Jalaludin
Liew Hui Ling	Siti Aisyah Binti Sanusi
Lim Suet Kim	Siti Aminah Binti Ibrahim
Loh Yueh Feng, Dr	Suwaibah Binti Rozali
Mazidah Binti Md Nor	Tan Jen Kit, Dr
Mohd Zulhairi Bin Jamaluddin	Tan Lai Kuan
Muhamad Gaddafi Bin Samsudin	Yee Siew Fung
Muhammad Danial Asyran Bin Mohamad Asrul	

IKM Merit Award 2024

Recipients	Parent	Examination
Anna Lim Jing Yee	ChM See Geok Heon	SPM 2023
Koh Lee Wern	ChM Lee Kooi Ping	SPM 2023
Ng Wei Yao	ChM Tan Bee Cheng	SPM 2023
Siti Sarah Binti Izan Izwan	ChM Dr Izan Izwan Bin Misnon	SPM 2023
Tang Jun Hu	ChM Ong Siew Lee	SPM 2023
Tang Yee Yang	ChM Dr Chua Lee Suan	SPM 2023
Tok Exin	ChM Dr Li Hui Ling	SPM 2023
Adila Fasiha Binti Pauzer	ChM Pauzer Bin Ahmad ChM Azlina Binti Shafawi	Matrikulasi 2023/ 2024
Eugene Lim Qi Wen	ChM See Geok Heon	STPM 2023
Hannah Tan Ruyi	ChM Tan Seng Loon	Foundation 2023
Nur Sarah Hanis Binti Mohd Lip	ChM Mohd Lip Bin Jabit	Matrikulasi 2023
Pung Ruo Xin	ChM Dr Liang Mei Keat	STPM 2023
Tay Zi Qing	Assoc. Prof. ChM Dr Tay Meng Guan	Matrikulasi 2023

Kuiz Kimia Kebangsaan Malaysia (K3M) 2024 Top Scorer Award Winners

O LEVEL

Ng Li Hang	SMK Bandar Baru Seri Petaling, Kuala Lumpur
Kenji Soh	SMK Bandar Baru Seri Petaling, Kuala Lumpur
Alan Nyon Kah Lun	SMK Bandar Baru Seri Petaling, Kuala Lumpur
Daniel Tan Sing Keat	SMK Kepong, Kuala Lumpur, Selangor
Jeff Chong Kai Sheng	SMK Tung Hua, Sibu, Sarawak
Jovianne Chan Yieng Chi	SMK Tung Hua, Sibu, Sarawak
Moh Hien Onn	SMK Tung Hua, Sibu, Sarawak
Vera Tang Sing Yee	SMK Tung Hua, Sibu, Sarawak
Wesley Wong Zheng Song	SMK Tung Hua, Sibu, Sarawak
Andy Lau Yii Fong	SMK Kwong Hua, Sibu, Sarawak
Henry Phang Zhen Cheng	SM Foon Yew, Johor Bahru, Johor
Ong Cheng Yu	SMJK Yu Hua Kajang, Kajang, Selangor
Yap Rae	SMJK Katholik, Petaling Jaya, Selangor
Goh Chun Kiang	Sekolah Methodist Wesley Klang, Klang, Selangor
Tan Chien Jong	SMK Tinggi St. David, Bukit Baru, Melaka
Sean Yeap Xuan Pin	SMJK Chung Ling, Pulau Pinang
Liong King Hung	SMK Tung Hua, Sibu, Sarawak
Ethan Chan Sing Hong	SMK Tung Hua, Sibu, Sarawak
Derek Kong Zong Ze	SMK Tung Hua, Sibu, Sarawak

A LEVEL

Khoo Jing Shan	MCKL College (Pykett Campus), Pulau Pinang
Lim Jia Xin	Kolej Tingkatan Enam Tun Fatimah, Melaka
Nur Anis Farhana Binti Ahmad Fathillah	Kolej Matrikulasi Perak, Gopeng, Perak
Kevin Wong Ken Nam	Kolej Matrikulasi Perak, Gopeng, Perak
Ng Ze Xian	Sunway College Kuala Lumpur, elangor
Lee Qian	SM Hin Hua, Klang, Selangor

2024 IKM LABORATORY EXCELLENCE AWARD

- A&A Scientific Resources Sdn Bhd, UiTM A&A Laboratory
- ALS Technichem (M) Sdn Bhd, Johor Bahru
- ALS Technichem (M) Sdn Bhd, Selangor
- ALS Technichem (PG) Sdn Bhd
- ASEAN Bintulu Fertilizer Sdn Bhd
- Asiatest Laboratory Service Sdn Bhd
- Bio Synergy Laboratories Sdn Bhd
- Borneo Samudera Sdn Bhd, Central Laboratory
- Chemsain Konsultant Sdn Bhd, Shah Alam
- Dewan Bandaraya Kuala Lumpur, Pusat Analisis dan Sekuriti Makanan
- ExcelVite Sdn Bhd
- Fedmas Assay Office Sdn Bhd
- FGV Agri Services Sdn Bhd, FGV Analytical Laboratory, Jengka, Pahang
- FGV Agri Services Sdn Bhd, FGV Analytical Laboratory, Sabah
- FGV Johor Bulkers Sdn Bhd, FJB Testing Laboratory
- Forest Research Institute Malaysia (FRIM), Natural Product Quality Control
- Forest Research Institute Malaysia (FRIM), Soil Chemistry Laboratory
- Forest Research Institute Malaysia (FRIM), Wood Composite Testing Laboratory
- Forest Research Institute Malaysia (FRIM), Wood Preservative Analytical Laboratory
- Indah Water Konsortium Sdn Bhd, Central Laboratory Services
- Indah Water Konsortium Sdn Bhd, Northern Laboratory Services
- Indah Water Konsortium Sdn Bhd, Penang Laboratory Services
- Indah Water Konsortium Sdn Bhd, Selangor Laboratory Services
- Indah Water Konsortium Sdn Bhd, Southern Laboratory Services
- Jabatan Kimia Malaysia Negeri Melaka
- Jabatan Kimia Malaysia, Cawangan Bintulu, Sarawak
- Jabatan Kimia Malaysia, Petaling Jaya, Selangor
- Johor Plantations Group Berhad, Central Analytical Laboratory
- Kossan Research & Development Sdn Bhd
- Kualiti Alam Sdn Bhd
- Lotus Laboratory Services (M) Sdn Bhd
- Malaysia LNG Sdn Bhd
- Malaysian Agricultural Research and Development Institute (MARDI), MARDILab Serdang
- Malaysian Refining Company Sdn Bhd
- National Institute of Occupational Safety and Health (NIOSH)
- National Poison Centre, Toxicology Laboratory
- Pengurusan Air Selangor Sdn Bhd, Northern Regional Laboratory, Sg. Selangor Phase 2 Water Treatment Plant
- Pengurusan Air Selangor Sdn Bhd, Southern Regional Laboratory, Langat 2 Water Treatment Plant
- Pengurusan Air Selangor Sdn Bhd, Southern Regional Laboratory, Sg. Labu Water Treatment Plant
- Pengurusan Air Selangor Sdn Bhd, Southern Regional Laboratory, Sg. Semenyih Water Treatment Plant
- Perbadanan Bekalan Air Pulau Pinang (PBAPP), PBA Central Laboratory
- PETRONAS Chemicals Ammonia Sdn Bhd
- PETRONAS Chemicals Derivatives Sdn Bhd
- PETRONAS Chemicals Ethylene Sdn Bhd, Central Laboratory
- PETRONAS Chemicals Fertiliser Kedah Sdn Bhd, PCFKSB Laboratory
- PETRONAS Chemicals Fertiliser Sabah Sdn Bhd, PCFSSB Laboratory
- PETRONAS Chemicals LDPE Sdn Bhd
- PETRONAS Chemicals Methanol Sdn Bhd
- PETRONAS Chemicals MTBE (M) Sdn Bhd, PC MTBE Laboratory
- PETRONAS Gas Berhad, Analytical Technology Export Terminal
- PETRONAS Gas Berhad, Analytical Technology Kertih
- PETRONAS Gas Berhad, Analytical Technology Kertih, Utilities Kertih
- PETRONAS Gas Berhad, Analytical Technology Santong, Gas Processing and Utilities
- PETRONAS Gas Berhad, Analytical Technology Utilities Gebeng
- PETRONAS Refinery and Petrochemical Corporation Utilities & Facilities Sdn Bhd, PRPC UF Centralised Laboratory Services
- Petrotechnical Inspection (M) Sdn Bhd, Miri, Sarawak
- Petrotechnical Inspection (M) Sdn Bhd, Port Klang
- Prisma Laboratory (M) Sdn Bhd, Johor Bahru
- Ranhill SAJ Sdn Bhd, Central Laboratory
- SaniChem Resources Sdn Bhd
- SD Guthrie Research Sdn Bhd, LS Laboratories Carey Island
- SD Guthrie Research Sdn Bhd, LS Laboratories Sabah
- SD Guthrie Research Sdn Bhd, LS Laboratories Sarawak
- SGS (Malaysia) Sdn Bhd, Kuching
- SGS (Malaysia) Sdn Bhd, Natural Resources Onsite Sakura Laboratory

- SGS (Malaysia) Sdn Bhd, Port Klang
- SGS (Malaysia) Sdn Bhd, Shah Alam
- Shell MDS (M) Sdn Bhd, Shell MDS (M) Laboratory
- Sungai Harmoni Sdn Bhd, Main Laboratory SSP1
- Trienekens (Sarawak) Sdn Bhd
- UMW Lubetech Sdn Bhd
- Universiti Kebangsaan Malaysia, Makmal i-CRIM
- Universiti Teknologi PETRONAS, Environmental Laboratory

IKM Laboratory Excellence Silver Award: 10 years

- Asiatest Laboratory Service Sdn Bhd, Kota Kinabalu, Sabah
- Trienekens (Sarawak) Sdn Bhd, Kuching, Sarawak

IKM Laboratory Excellence Gold Award: 15 years

- ASEAN Bintulu Fertilizer Sdn Bhd, Bintulu, Sarawak
- PETRONAS Gas Berhad, Analytical Technology Santong, Paka, Dungun, Terengganu
- PETRONAS Penapisan (Terengganu) Sdn Bhd, Analytical Technology Services, Kertih, Kemaman, Terengganu

IKM Laboratory Excellence Platinum Award: 20 years

- Forest Research Institute Malaysia (FRIM), Soil Chemistry Laboratory, Kepong, Selangor

IKM Laboratory Excellence Diamond Award: 25 years

- Borneo Samudera Sdn Bhd, BSSB Central Laboratory, Tawau, Sabah
- FGV Johor Bulkers Sdn Bhd, FJB Testing Laboratory, Pasir Gudang, Johor

Anugerah Graduan Cemerlang Kimia 2024 by IKM Terengganu Branch

The Anugerah Graduan Cemerlang Kimia, presented by IKM Terengganu Branch recognizes excellence in chemistry. Established on 17th September 2024 through collaboration with Universiti Malaysia Terengganu (UMT), the award celebrates outstanding graduate achievements and encourages future students to pursue academic and professional excellence in the field of chemistry.

Hii Chiong Hwee, a standout graduate from, has been awarded the Anugerah Graduan Cemerlang Kimia 2024 by IKM Terengganu Branch. This prestigious award recognizes his outstanding academic performance and significant contributions to the field of chemical sciences. Coming from Sarikei, Sarawak, Hii earned his Bachelor of Science (Chemical Sciences) with Honors in October 2024, graduating with an impressive CGPA of 3.95. His consistent academic excellence placed him on the Dean's List every semester throughout his studies.

Hii's academic journey began with a strong STEM foundation, where he achieved a perfect CGPA of 4.0 during his foundation year at UMT. His commitment to chemical sciences extended beyond the classroom through participation in research and international competitions. He notably secured 2nd Runner Up in the International Essay Competition on "Natural Product Challenging in Malaria" at Universitas Negeri Malang, Indonesia, which broadened his global perspective and collaboration with international peers.

In addition to his academic achievements, Hii showcased leadership and community service by earning the President Award for The Boys' Brigade Malaysia in 2020. This distinction reflects his dedication to both his field and his community, serving as an inspiration to his peers.

Hii was an intern at PETRONAS Chemicals LDPE Sdn. Bhd., gaining valuable hands-on experience in the Secure Quality Product (SQP) and Technical Service Department (TSD). His role involved assisting in laboratory tests and supporting chemists in ensuring product quality.

Hii's final year research, supported by the Royal Society of Chemistry (RSC), focused on synthesizing phenylphosphonate/HDPE/graphene oxide composites as flame retardants. He presented his findings at the 9th International Conference for Young Chemists (ICYC) 2024 in Penang. This award highlights his potential to make significant contributions to chemical sciences.

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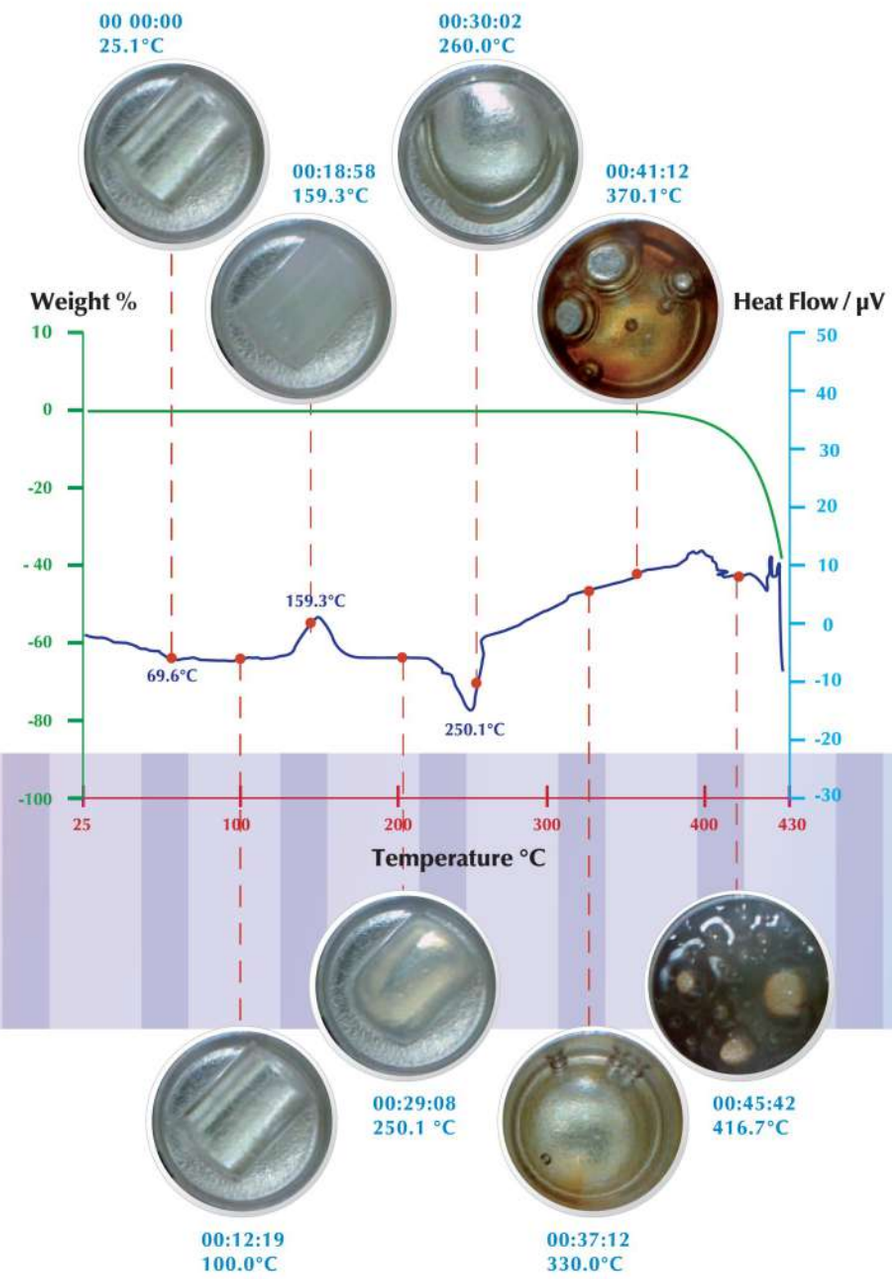

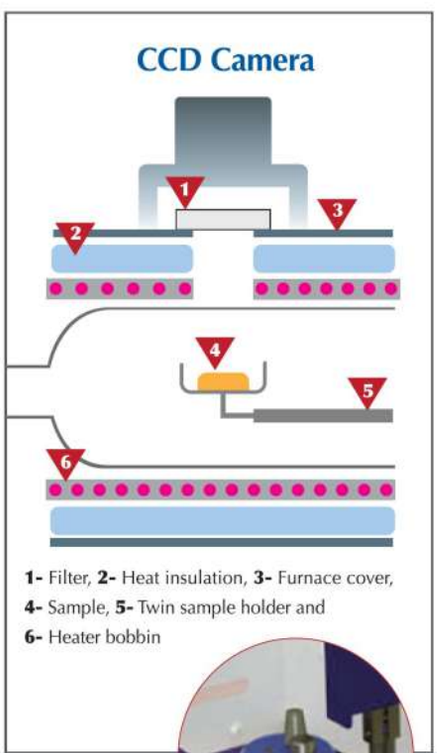

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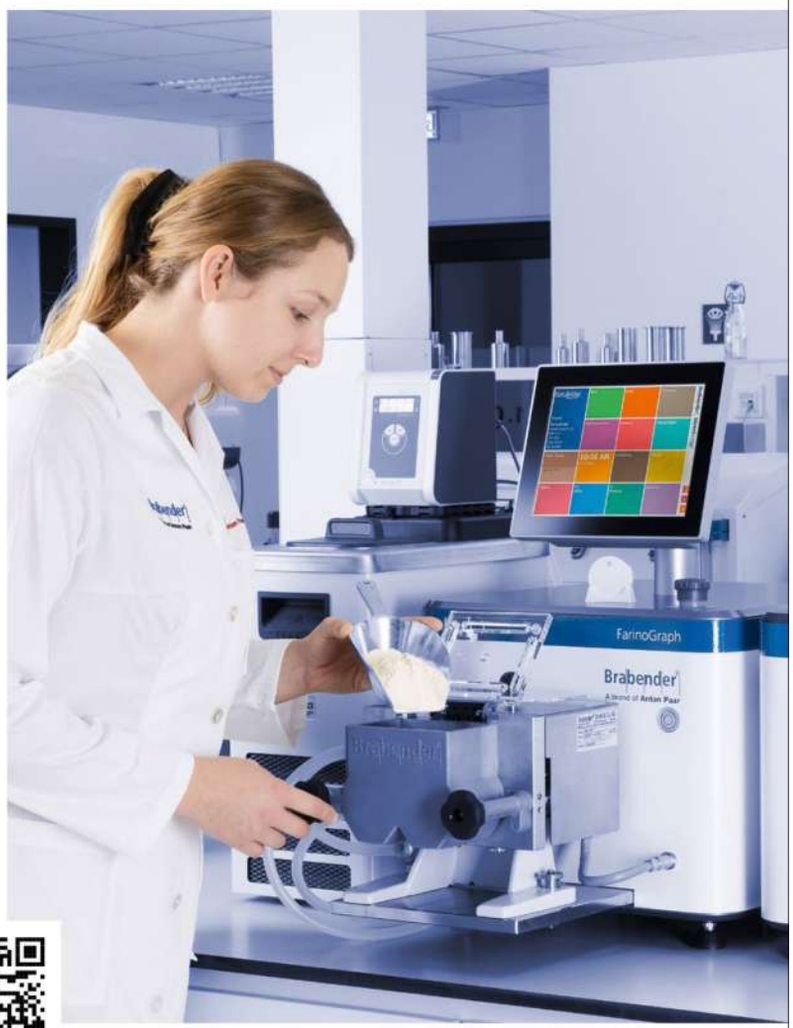

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Karnival Kimia Malaysia (K2M) 2024 by IKM Terengganu Branch

The Institut Kimia Malaysia Terengganu Branch (IKMTB) had successfully organized Karnival Kimia Malaysia (K2M) for the year 2024 at Sekolah Menengah Kebangsaan (A) Dato' Haji Abbas, Kuala Nerus on 14th November 2024 in conjunction Minggu Sains Negara (MSN). The objective of this K2M is to raise public awareness about the importance of chemistry practices and career opportunities in this field and provide exposure to students and the public regarding the applications of science in their daily life.

The event was officiated by En Mohd Nordin Bin Zakaria, Deputy Director of the Learning Sector at the Kuala Nerus District Education Office, and witnessed by the Principal of Sekolah Menengah Kebangsaan (A) Dato' Haji Abbas, Mr. Amir Husin Bin Ali @ Mat Ali. K2M Terengganu 2024 was attended by 400 participants inclusive of students from Sekolah Menengah Kebangsaan Padang Kemunting, Sekolah Menengah Kebangsaan Kompleks Mengabang Telipot and Sekolah Menengah Kebangsaan Kompleks Gong Badak, exhibitors, facilitators, teachers, and IKMTB committee members.

The theme for K2M Terengganu was "Chemist Paints the Canvas of Tomorrow", is a metaphor that portrays chemists as creators shaping the future. Just as an artist uses colours on a canvas to create a vision, a chemist uses molecules, reactions, and materials to build innovations that transform the world. This refers to breakthroughs in medicine, technology, sustainability, or any field where chemistry plays a role. The "canvas of tomorrow" suggests that their work will have a lasting impact on the future, potentially improving lives, solving global challenges, or creating entirely new possibilities. The main highlights of the carnival were talks, poster exhibitions, and interactive activities. Talks with Q&A sessions, Quiz and lucky draws were held for the participants. Three insightful talks were presented by the following invited speakers:

Prof. Madya ChM Dr. Wan Mohd Afiq bin Wan Mohd Khalik from Universiti Malaysia Terengganu.
Title: Kesedaran terhadap Mikroplastik.

ChM Shamsilawati binti Mustafar from the Jabatan Bomba dan Penyelamat Malaysia Negeri Terengganu.
Title: Peranan Kimia dalam Forensik Kebakaran.

ChM Wan Muhammad Rahmat Syazuli bin Wan Harun from SGS-Petrotechnical Inspection Sdn Bhd.
Title: Peranan Kimia dalam Industri Minyak dan Gas.

We were honoured to receive support from Jabatan Kimia Malaysia (JKM), Universiti Malaysia Terengganu (UMT), Universiti Sultan Zainal Abidin (UniSZA), Syarikat Air Terengganu (SATU) and Pusat Sains dan Kreativiti Terengganu (PSKT), who participated in the exhibitions and interactive activities. A total of five poster booths were displayed, and four interactive activities were conducted,






including pH indicator testing, plaster casting, hand sanitizer production and key-chain making. Additionally, PSKT organized a series of science challenge activities such as the Peg Game, T Puzzle, Ring Toss, Tetra Puzzle, Crazy Maze, 3D Puzzle and a space exhibition in the portable dome. The program received enthusiastic participation from all the schools. The K2M event was well-organized and successfully provided valuable experiences and learning opportunities for everyone involved.

Prepared by
ChM Nurzuhrah binti Hassan
Honorary Secretary, IKM Terengganu Branch

Igniting Passion for Chemistry: IKM Southern Branch and UTM's Inspiring Outreach Events

Fostering curiosity and a love for science is vital to shaping future innovators and leaders. The Malaysia Institute of Chemistry (IKM) Southern Branch and Universiti Teknologi Malaysia (UTM) have long embraced this mission through their vibrant outreach initiatives. In 2024, these organizations made waves with two remarkable events that brought Chemistry to life for diverse audiences across Johor: the annual Karnival Kimia Malaysia Johor (K_2M Johor) and the Fun Fiesta@SIGS. These programs reflect a shared vision to make Chemistry more accessible, engaging, and impactful, uniting students, teachers, and communities in their journey of discovery.

Chemistry Beyond the Classroom: Nurturing Curiosity Through K_2M Johor and Fun Fiesta

The Karnival Kimia Malaysia Johor (K_2M Johor), held on the 26th of October, 2024, at UTM, has been a cornerstone of science education outreach since 2010. This year's event welcomed 568 students and 55 teachers from 31 schools across Johor. It featured a variety of activities, including hands-on experiments, lectures, and engaging competitions like Chemistry in the Farm, Periodic Table Game, 3 Minutes Chemistry, and more.

Just a month later, on the 23rd of November, 2024, the excitement of science spread to Fun Fiesta@SIGS, hosted at Sekolah Menengah Kebangsaan (P) Sultan Ibrahim Johor Bahru. This event extended the impact of IKM and UTM's outreach, with an interactive booth showcasing Chemistry to approximately 500 visitors of all ages. Activities such as Lava Lamp, Oobleck, and Make Your Own pH Paper captivated audiences, demonstrating the magic of Chemistry in everyday life. Both events emphasized the importance of experiential learning, where students and participants actively engaged with science in ways that made it fun, relatable, and impactful. These programs broke the mold of traditional classroom instruction, replacing it with interactive experiences designed to ignite curiosity and foster a deeper appreciation for Chemistry.

Empowering Educators and Strengthening Communities

A hallmark of these outreach initiatives is their focus on empowering educators alongside students. During K2M Johor, the Johor Innovative Chemistry Teacher Award recognized teachers who used creative techniques to make Chemistry engaging for their students. This award served as a reminder of the vital role educators play in inspiring young minds and




encouraged them to continuously refine their teaching methods. At the same time, K2M Johor hosted a laboratory safety seminar to equip science teachers and laboratory assistants with essential skills for conducting safe and effective science practicals. Similarly, the interactive booth at Fun Fiesta@SIGS engaged families, creating a multi-generational dialogue about the wonders of Chemistry. These efforts extended the reach of science education beyond schools, making it a community-wide initiative.

A Shared Vision for the Future

The synergy between K2M Johor and Fun Fiesta@SIGS demonstrates IKM Southern Branch and UTM's unwavering commitment to bringing Chemistry into the lives of as many people as possible. These events are not standalone successes but integral parts of a larger mission to cultivate scientific curiosity, promote innovation, and make science education inclusive and inspiring. Feedback from both programs highlights their success in achieving these goals. Students left with a renewed passion for science, while educators felt equipped and motivated to implement new ideas in their classrooms. Parents, too, gained a deeper appreciation for the role of Chemistry in everyday life. As IKM and UTM look to the future, their dedication to outreach will undoubtedly continue to flourish. By uniting communities through engaging and meaningful science initiatives, they ensure that Chemistry becomes a vibrant and accessible part of everyone's journey of learning and discovery.

Prepared by ChM Dr. Sheela Chandren & Ts. ChM Dr. Mohamad Shazwan Shah Jamil

Kuala Lumpur Engineering Science Fair (KLESF) 2024

The annual Kuala Lumpur Engineering Science Fair (KLESF) 2024 officially kicked off at the MINES International Exhibition and Convention Centre (MIECC) from 8th to 10th November 2024. This exciting event is part of an ongoing initiative featuring a variety of programs and activities designed to spark interest in Science, Technology, Engineering, and Mathematics (STEM) among primary and secondary school students. IKM represented by members from the Division of Green and Sustainable Chemistry (DGSC) and Malaysian Young Chemist Network (MYCN) participated in KLESF 2024. The team led by Prof. ChM Dr. Phang Sook Wai included ChM Lee Ching Yik, ChM Lee Shoek Yin, ChM Dr. Mazlin Binti Mohideen, ChM Dr. Kumuthini A/P Chandrasekaram, Assoc. Prof. ChM Dr. Tan Kar Ban, and Assoc. Prof. ChM Dr. Pushpamalar Janarthanan.

Several undergraduate and post-graduate students from Tunku Abdul Rahman University of Management & Technology, Universiti Putra Malaysia and Monash University Malaysia assisted the team. The IKM team stood out for its remarkable efforts in promoting the Sustainable Development Goals (SDGs). Visitors to the IKM booth were immersed in themes of sustainability and green innovation. One of the highlight was SDG-inspired unique door gift: A pencil crafted from recycled paper, seeds, and a biodegradable capsule made from rice starch. When the pencil runs out of lead, participants can plant it in a small pot, allowing the seeds to grow. Accompanying this thoughtful gift was the slogan: "**IKM is planting the seed of science & chemistry in your heart**." This creative initiative ensured that every participant left the booth with a lasting memory and a renewed passion for science, chemistry, and sustainability.

The IKM booth at KLESF 2024 featured a range of showcases, including Symmetry and Chemical Bonding of Solids, Oil Bubble in Water science experiment, Volcano, Fruit Battery and Symmetry & Floating Drawing. For the Symmetry and Chemical Bonding of Solids showcase, participants were provided with modules and symmetry toolkits to create various solid models using “ball” and “stick” assemblies. They explored crystal structures, chemical bonding, and symmetry operations in models of solids such as salt (NaCl), ammonia (NH_3), proteins and etc. The hands-on activity allowed participants, particularly primary and secondary school students to visualize and understand symmetry operations like reflection, rotation, and inversion, making it a highly effective way to experience the wonders of chemistry. The Volcano Experiment was a crowd favorite, especially among young participants. This classic demonstration showcased a chemical reaction between acid (acetic acid in vinegar) and a carbonate (sodium hydrogen carbonate in baking soda). When mixed, the reaction produced carbon dioxide gas through the decomposition of hydrogen carbonate. To enhance the visual appeal, red coloring was added to mimic the fiery appearance of molten lava erupting from a volcano. The experiment not only captivated the young audience but also provided an engaging way to learn about chemical reactions in an exciting, hands-on manner. The Floating Drawing experiment was another favorite among participants, especially young children, as it effortlessly sparked their interest in science and chemistry. Using a dry-erase marker, which contains an oily silicone polymer that makes it less sticky, participants drew pictures on ceramic spoons. The science behind the magic lies in the fact that the marker ink, made from this polymer, does not dissolve in water. Instead, it floats to the surface because the dry-erase marker ink is less dense than water. Participants enjoyed drawing a variety of creative and funny designs, including heart shape, cat, dog, cartoon characters, and even the IKM logo, and were thrilled to see their creations float on water. This hands-on activity made learning science both fun and memorable!

The Oil Bubble in Water experiment was a simple yet fascinating activity that allowed kids to explore concepts of density and chemistry using common household items. As demonstrated, oil and water do not mix due to differences in their densities and molecular structures. Oil, being less dense, floats on water. Moreover, oil molecules are non-polar, while water molecules are polar, making them immiscible liquids, they cannot interact or mix. When salt is added to the mixture, it sinks due to its greater density, dragging some oil along with it. As the salt dissolves in water, it releases the oil, which then floats back to the surface. Adding more salt repeats this process, creating more oil bubbles. To make the experiment even more engaging, fluorescent salt and a UV lamp were used, adding a glowing effect that captivated participants and made the activity even more exciting for young scientists. The Fruit Battery setup at the IKM booth demonstrated the principles of electrochemistry in a simple and interactive way. In this setup, copper metal served as the positive terminal, zinc metal as the negative terminal, and the lemon juice acted as the electrolyte. The ions in the lemon juice reacted with the zinc, forming zinc ions that moved through the juice towards the copper, creating an electric current. Additionally, the booth featured a fun and challenging activity, the "Marshmallow and Spaghetti Competition". This activity aimed to cultivate patience and problem-solving skills among young participants as they

worked to build increasingly complex solid structures using only marshmallows and spaghetti. It was an excellent opportunity for participants to apply creativity, teamwork, and engineering concepts in a hands-on and engaging way. Aligned with the SDGs that aim to transform our world, the IKM team successfully embodied these goals through their participation in KLESF 2024 at MIECC. The event not only promoted sustainability but also inspired participants, helpers, and the organizing committee alike. Visitors to the IKM booth left with newfound enthusiasm and carried home the "IKM chemistry seeds", a symbolic reminder to nurture their curiosity and passion for science and sustainability.

Report by
Prof ChM Dr Phang Sook Wai & Prof ChM Dr Juan Joon Ching

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- A Corporate Good Governance
- Sustainable Initiative Risk Management for Chemical Industry
- Concepts of Circular Economy & Extended Producer Responsibility (EPR)
- EPR and its Impact on Chemical Manufacturers
- Understanding Carbon Market Ecosystem in Malaysia
- Carbon Market Trading
- Bursa Carbon Exchange & Products

HIGHLIGHTS

- Navigating & embedding sustainability into your organization.
- Explore how innovation plays a crucial role in sustainability.
- Communicating sustainability efforts to stakeholders.
- National Sustainability Governance Landscape & Risk Management
- Understanding Circular Economy & Extended Producer Responsibility
- Carbon Market Ecosystem

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SPEAKERS

Ms. Komathi Mariyappan, *Founder & Director - Climatera Consulting Sdn Bhd*
AREAS OF EXPERTISE: GHG Inventory (UNFCCC/IPCC), Carbon Footprint for Cities, Corporates, Events (GHG Protocol/other standards), GHG Management System (ISO System), Life Cycle Assessment (GHG Emissions), Carbon Trading/Offsets (Compliance & Voluntary), Domestic Carbon Project Development (Tech based, NBS & REC) Sustainable Reporting (GRI Guideline), Capacity Building & Training: GHG Inventory

Dr. Gary Theseira, *Adjunct Associate Professor at the Asia School of Business (ASB), a Director and Council member at Climate Governance Malaysia (CGM)*

AREAS OF EXPERTISE: Corporate Sustainability, ESG compliance and the SDGs, Climate Risk Management, Forest Carbon Quantification. Currently assists the Joint Committee on Climate Change (JC3) on the development of National Climate Data Catalogue and serves on the National Climate Change Advisory Panel and the Selangor State Action Council on Climate Change (IKLIM) as a subject matter expert.

Registration FEE

- IKM Member - RM1500.00
- IKM Member (HRDC claimable fee) - RM1560.00
- Non Member - RM1900.00
- Non Member (HRDC claimable fee) - 1976.00
- Seminar fee is inclusive of seminar materials, refreshments and lunch.

Mr. Hiro Chai Yihn Chan, *Director - Mitsusho Sdn. Bhd.*

AREAS OF EXPERTISE: Global Investment Banking and Carbon Market, Readiness Assessment in Accordance with Securities Commission, Bursa Carbon Exchange (BCX), Sustainability Reporting, Corporate Carbon Offsetting, Carbon Credit Project Development, Validation on GHG Inventory and Product Life Cycle against ISO:14064 and ISO:14067.

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(Inaugurated on 8 April 1967, incorporated under Chemists Act 1975 on 1 November 1977)

1st NOTICE

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President: Datuk ChM Dr Soon Ting Kueh

8 December 2024

To: All IKM members,

NOTICE OF 58th AGM 2025

Notice is hereby given that the 58th Annual General Meeting of the Institute will be held as follows:

Date	:	**Saturday, 22 March 2025**
Time	:	**4.00 p.m.**
Venue	:	**Jasper Junior Ballroom, M World Hotel** **No. 1, Persiaran Bandar Utama, Bandar Utama, 47800 Petaling Jaya, Selangor** **(next to MRT Bandar Utama)**

Agenda:

1. Presidential Address.
2. To adopt the minutes of the 57th AGM held on Saturday, 30 March 2024.
3. Matters Arising.
4. To receive and consider the Annual Report of the Institute for 2024/2025.
5. To receive and consider the Annual Statement of Accounts of the Institute and the Auditor's Report for 2024.
6. To consider Chemists (Signatories of Test Reports) By-Laws 2025.
7. To elect 5 Council members and to fill vacancies in the Council created by the retirement of the following Council members by rotation:
   - ChM Ts Damien Khoo Yiyuan
   - ChM Dr Lee Yook Heng
   - ChM Dr Li Hui Ling
   - Dato' ChM Dr Hj Mas Rosemal Hakim Mas Haris
   - ChM Dr Yang Farina Abdul Aziz
8. To appoint qualified auditor(s) and determine his/her or their remuneration.
9. To consider any other matters of which notice in writing has been given to the Honorary Secretary by a member at least 14 days before the Meeting.

Yours Sincerely,
ChM Chang Hon Fong
Honorary Secretary

Note:

a) The Annual Report and Statement of Accounts 2024/2025 will be uploaded at IKM Website for members' access. Please refer to IKM Website (http://www.ikm.org.my/) in early March 2025 for updates. Hardcopy documents will be made available to members during the AGM.

b) Members attending the AGM are invited for Iftar Buffet after the AGM at Indulge (Coffee House), M World Hotel.

c) **Registration is required for the AGM & Iftar Buffet via Google Form by 14 March 2025.**

Registration link - https://forms.gle/yS2oYaLT4PbDcuxm6
or Email: azizi@ikm.org.my

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IKM Professional Centre
Training Calendar

Date	Courses	Trainers	Code
6 January 2025 (Monday)	Decision Rules and Conformity Assessment Meeting The MS ISO/IEC 17025:2017 Requirements	ChM CHANG HON FONG	DRSC8
13 - 14 January 2025 (Monday - Tuesday)	Chemical Safety and Security *eligible for 10 CEP Points by DOSH	DATIN ChM DR ZURIATI ZAKARIA	CSS7
16 January 2025 (Thursday)	Organizing Small Interlaboratory Comparisons	ChM CHANG HON FONG	ILC2
18 - 19 January 2025 (Saturday - Sunday)	Understanding the Elements of MS ISO/IEC 17025:2017	ChM CHANG HON FONG	ISO52
20 - 21 January 2025 (Monday - Tuesday)	Method Validation & Quantification of Measurement Uncertainty in Microbiological Testing	DR NEW CHIA YEUNG	MVUM9
22 - 23 January 2025 (Wednesday - Thursday)	Regulatory Requirements & Analysis for Halal Products Certification	ChM DR MUHAMAD SHIRWAN ABDULLAH SANI	HPC1
12 - 13 February 2025 (Wednesday - Thursday)	MS ISO/IEC 17025:2017 Management Systems Internal Auditing	ChM PUA HIANG	IAT40
17 - 18 February 2025 (Monday - Tuesday)	Measurement Uncertainty in Chemical Analysis	ChM CHANG HON FONG	MU48
19 - 20 February 2025 (Wednesday - Thursday)	Mass Spectrometry	ASSOC PROF ChM DR FATIMAH SALIM	MS3
22 - 23 February 2025 (Saturday - Sunday)	Management of Chemicals & Chemical/Lab Wastes *eligible for 10 CEP Points by DOSH & 12 CPD Hours by EiMAS	ChM DR MALARVILI RAMALINGAM	MCCW34
24 - 25 February 2025 (Monday - Tuesday)	General QA/QC Procedures for Testing Laboratories	ChM PUA HIANG	QAQC48
27 February 2025 (Thursday)	Root Cause Analysis and Corrective Actions on Unsatisfactory PT Performance	ChM DR LI HUI LING	RCA7
11 - 12 March 2025 (Tuesday - Wednesday)	Understanding the Elements of MS ISO/IEC 17025:2017	ChM CHANG HON FONG	ISO53
24 - 25 March 2025 (Monday - Tuesday)	Measurement Uncertainty in Chemical Analysis	ChM CHANG HON FONG	MU49
12 - 13 April 2025 (Saturday - Sunday)	Basic Laboratory Skills & Techniques	PROF ChM DR SHARON TEH GEOK BEE	BSLT16
14 - 15 April 2025 (Monday - Tuesday)	Procedures of Method Validation & Verification	ChM CHANG HON FONG	MVV48
17 April 2025 (Thursday)	Organizing Small Interlaboratory Comparisons	ChM CHANG HON FONG	ILC3
19 - 20 April 2025 (Saturday - Sunday)	Statistical Methods for Chemists	PROF ChM DR SHARON TEH GEOK BEE	BSM30
21 - 22 April 2025 (Monday - Tuesday)	Calibration of Test and Measuring Instruments and Metrological Traceability	MR CHEN SOO FATT	CAL8
23 - 24 April 2025 (Wednesday - Thursday)	MS 1042:2023 Safety in Laboratory *eligible for 10 CEP Points by DOSH & 12 CPD Hours by EiMAS	ChM Ts Dr AIDIL FAHMI BIN SHADAN	SIL2
28 - 29 April 2025 (Monday - Tuesday)	Understanding the Elements of MS ISO/IEC 17025:2017	ChM CHANG HON FONG	ISO53
5 - 6 May 2025 (Monday - Tuesday)	MS ISO/IEC 17025:2017 Management Systems Internal Auditing	ChM PUA HIANG	IAT41
7 - 8 May 2025 (Wednesday - Thursday)	Navigating Sustainability and Carbon Management in Chemical Industries	MS. KOMATHI MARIYAPPAN	SCM1

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: marketing@hannamalaysia.com

IKM NEW MEMBERS & MEMBERSHIP UPGRADING

New Members (MMIC)	Noormaliana Binti Ismail, ChM *M/6780/10868/24*
Adryana Izzati Binti M Adnan, ChM *M/6811/10936/24*	Norsazlina Binti Ahmad Jan, ChM *M/6767/10846/24*
Ahmad Shafik Bin Othman, ChM *M/6788/10880/24*	Nur Athirah Binti Nor Hamizat, ChM *M/6799/10909/24*
Ainaatul Asmaa' Binti Ishak, ChM Dr. *M/6812/10937/24*	Nur Intan Liyana Binti Yahya, ChM *M/6774/10858/24*
'Aizat Azhari Bin Mohd Yatim, ChM *M/6818/10945/24*	Nur Syafiqah binti Ayum, ChM *M/6771/10854/24*
Alia Binti Abdul Ghani, ChM *M/6792/10889/24*	Nur Syafiqah Binti Azmi, ChM *M/6766/10842/24*
Ayuni Shahira Binti Zulkifli, ChM *M/6786/10875/24*	Nur Syahira Binti Mohd Nawawi, ChM *M/6801/10913/24*
Chiu Hock Ing, ChM Dr. *M/6810/10935/24*	Nurhaswani Binti Alias, ChM Dr. *M/6790/10885/24*
Esther Anak Phillip, ChM Dr. *M/6804/10924/24*	Nurrulhidayah Binti Salamun, ChM Dr. *M/6787/10877/24*
Farah Izzati binti Musthaffa, ChM *M/6808/10932/24*	Nurul Aqilah Pohan Binti Tarmizi Pohan, ChM *M/6769/10848/24*
Fatin Azieyati Binti Baharom, ChM *M/6805/10925/24*	Nurul Haidah Binti Rizal, ChM *M/6803/10921/24*
Fazira Ilyana Binti Abdul Razak, ChM Dr. *M/6785/10874/24*	Nurul Husna As Saedah Bt Bain, ChM *M/6783/10871/24*
Gunalan A/L Paramasevam, Dato' ChM Ts. Dr. *M/6782/10870/24*	Rabuyah Binti Ni, ChM *M/6807/10930/24*
Intan Syafinah Binti Mahamad, ChM *M/6772/10856/24*	Shamini A/P Anbalagan, ChM *M/6773/10857/24*
Kalaivaani A/P K. Balachandran, ChM *M/6765/10839/24*	Siti Aminah binti Mohd Johari, ChM Dr. *M/6791/10887/24*
Kamran Bin Kambang, ChM *M/6795/10895/24*	Siti Nur Akmar Binti Mohd Yazid, ChM Dr. *M/6784/10872/24*
Lam Ki Yan, ChM *M/6781/10869/24*	Siti Nur Jannah Binti Zainon, ChM *M/6794/10893/24*
Lau Guan Yau, ChM *M/6768/10847/24*	Siti Rabiyah Binti Othman, ChM *M/6775/10860/24*
Looi Shueh Teng, ChM *M/6800/10910/24*	Syaura Azmi Binti Amraa, ChM *M/6816/10943/24*
Mohammad Arif Budiman Bin Pauzan, ChM Dr. *M/6777/10863/24*	Syaza Nabihah Binti Jamaludin, ChM *M/6817/10944/24*
Mohammad Firdaus Bin Jamaludin, ChM *M/6798/10908/24*	Ummi Kalthum Binti Abdullah, ChM *M/6802/10915/24*
Mohd Khairani Bin Md Rusly, ChM *M/6806/10927/24*	Ummi Salwa Binti Ab Hamid, ChM *M/6809/10933/24*
Mohd Yusof Bin Hamzah, ChM Dr. *M/6779/10866/24*	Wan Mohd Tarmizi Bin Wan Mohd Yusuf, ChM *M/6796/10899/24*
Monica Limau Anak Jadam, ChM Dr. *M/6776/10862/24*	Yeoh Shin Yong, ChM Dr. *M/6770/10849/24*
Muhammad Faris Bin Mohamad Saroni, ChM *M/6797/10900/24*	Zunaidi Bin Asidi, ChM *M/6789/10881/24*
Muhammad Hanizan Bin Zailan, ChM *M/6813/10939/24*	**New Members (LMIC)**
Nabilah Binti Abd Haris Hilmi, ChM *M/6778/10864/24*	'Aisyatul Auni binti Abdul Razak, ChM *L/3694/10876/24*
Nadhiratunnur Binti Sukril Jamel, ChM *M/6793/10892/24*	Aqilah Binti Abdul Latiff, ChM *L/3683/10841/24*
Nadia Athira Binti Yunus, ChM *M/6815/10941/24*	Felilee Anak Nibu, ChM *L/3702/10903/24*
Nik Muhammad Asyraf Bin Mohd Azmi, ChM *M/6814/10940/24*	Hanis Hashimi Bin Shamsul Bahri, ChM *L/3719/10946/24*

Intan Nurhazirah Binti Muzamir, ChM *L/3684/10843/24*	Siti Nursyafiqah Binti Ahmad Basarudin, ChM *L/3693/10873/24*
Juita Binti Zulkefli, ChM *L/3690/10861/24*	Syazana Amira binti Md Shahar, ChM *L/3685/10844/24*
Krithikasshini A/P Ponnabalam, ChM *L/3681/10838/24*	Tan Eng Wah, ChM *L/3721/10948/24*
Liyana Zaffirah Binti Abdul Wahab, ChM *L/3717/10934/24*	Thareena Iman Binti Che Mat Nasir, ChM *L/3696/10879/24*
Low Kin Seng, ChM *L/3699/10890/24*	Thomas Liang Anak Jelani, ChM *L/3692/10867/24*
Mohamad Hafis Maulad Sedi, ChM *L/3704/10905/24*	Uthaya Vaani A/P Krishnan, ChM *L/3687/10852/24*
Mohamad Norsyahmi bin Mohd Azmi, ChM *L/3709/10918/24*	Vizhalee A/P Sanker, ChM *L/3680/10820/24*
Mohamad Sufi Adha Bin Mohd Noor, ChM *L/3720/10947/24*	Wan Mohamad Iezzat Ezham Bin Wan Rosly, ChM *L/3679/10677/24*
Moke Jia Luo, ChM *L/3707/10914/24*	Yong Gong Yu, ChM *L/3708/10917/24*
Muhammad Adib Bin Ayob, ChM *L/3714/10926/24*	
Muhammad 'Aiman Bin Nor Azmey, ChM *L/3703/10904/24*	**Upgrade to Member (MMIC)**
Muhammad Ghurran Bin Hashim, ChM *L/3698/10883/24*	Dayang Nur Shafiqah binti Abang Mudin, ChM *M/6822/9966/23/24*
Muhammad Hafizan Bin Hechanova, ChM *L/3695/10878/24*	Loke Pei Yu, ChM *M/6820/8699/20/24*
Muhammad Hanis Bin Zumydy, ChM *L/3715/10929/24*	Muhammad Amirul Hisham bin Muhamad Aini @ Ahmad, ChM *M/6824/9762/22/24*
Muhammad Nazrin Bin Md Nizam, ChM *L/3712/10922/24*	Mujibuddin bin Morshidi, ChM *M/6825/9584/22/24*
Muhammad Nur Ikhmal Bin Amdan, ChM *L/3701/10901/24*	Ng Yee Teng, ChM *M/6821/8843/20/24*
Muhammad Shukeri bin Razman, ChM *L/3691/10865/24*	Nur Nadhirah binti Zulkarnain, ChM *M/6819/9489/22/24*
Nur Afrina Binti Noorazmi, ChM *L/3706/10912/24*	Wong Yoke Lan, ChM *M/6823/10140/23/24*
Nur Alissa Binti Abd Aziz, ChM *L/3705/10907/24*	
Nur Ashikin Binti Ab Rahman, ChM *L/3688/10855/24*	**Upgrade to Fellow (FMIC)**
Nur Athirah Regina Binti Shahrul Amin, ChM *L/3713/10923/24*	Abd Rahim Bin Othman, ChM *F/0151/2723/96/24*
Nur Auni Farzana Binti Mohamad, ChM *L/3689/10859/24*	Moh Pak Yan, Assoc. Prof. ChM Dr. *F/0150/4281/02/24*
Nur Farzana Syafiqah Binti Mohd Faisal, ChM *L/3710/10919/24*	
Nur Izzati Binti Arsad, ChM *L/3711/10920/24*	
Nur Nadhirah Liyana Binti Mohd Zuki, ChM *L/3686/10851/24*	
Nur Najmiena Binti Azlly, ChM *L/3700/10891/24*	
Nur Shuhaidah Binti Shamsul Kamal, ChM *L/3716/10931/24*	
Nurhazwa binti Nazaruddin, ChM *L/3697/10882/24*	
Shalini A/P Sandan Segeran, ChM *L/3718/10942/24*	
Siti Fatin Binti Rosli, ChM *L/3682/10840/24*	

IKM PERAK BRANCH SOCIAL HIGH TEA GATHERING 2024/2025

IKM Perak Branch held the annual Social Gathering on Sunday, 06th October 2024 at The Coffee House, Impiana Hotel, Ipoh. The High Tea was attended by 30 Perak Branch members with family and friends. It was an enjoyable session with old friends and making new ones while enjoying good food. The relaxed atmosphere was very conducive for networking informally. We look forward to next year's gathering.

IKM Chemical & Occupational Safety & Health Committee

OCCUPATIONAL SAFETY AND HEALTH RELATED ARTICLES SUBMISSION

Dear IKM Members,

You are invited to submit article(s) related to chemical safety and/or occupational safety and health (OSH) to be published in Berita IKM.
Article(s) submission or inquiries can be e-mailed to ChM Muhammad Haniff bin M Zahari (haniff@kimia.gov.my).

Best Regards,
COSH Committee

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