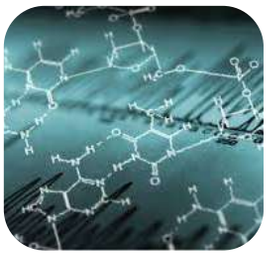


Berita IKM - Chemistry in Malaysia

March 2025

Institut Kimia Malaysia

www.ikm.org.my

Scan me

Berita IKM - Chemistry in Malaysia is a Quarterly Magazine of Institut Kimia Malaysia Issue No. 158 ISSN No. 0216-9631

KINETEX
Core-Shell Technology

The POWER of ULTRA-Performance on Any LC System

- Higher throughput without sacrificing resolution
- Reduce solvent usage with faster analysis
- Lower levels of detection and quantitation

LT RESOURCES

Available in Malaysia, exclusively from LT Resources (M) Sdn Bhd
T: 603 – 80638298 | F: 603 – 80638292 | E: info@ltresources.com.my

Contact us today for a copy of The Kinetex 2.6 & 5um Application Notebook

www.Phenomenex.com/Kinetex

phenomenex

Advertise in Berita IKM

An invitation to a partnership with IKM in promoting chemistry in Malaysia in "Berita IKM - Chemistry in Malaysia".

We accept requests to publish advertisements, advertorials and congratulatory messages for special events such as the launching of your new line of products or services or celebrating the success of your company and your people. You will have a captivated audience in our readership.

Note: IKM reserves the right to refuse advertisements in its magazine if it deems inappropriate.

ADVERTISEMENT PAGE	QUARTERLY Single Issue	GRANDSLAM* 4 Consecutive Issue
Outside Back Cover (Colour)	RM2,400	RM9,600
Inside Back Cover (Colour)	RM1,800	RM7,200
Inside Front Cover (Colour)	RM2,100	RM8,400
Inside Pages (Colour)	RM1,200	RM4,800

Call us if you need further inquiries or for that special event that you want to advertise and share with your clients. Thank you for your support.

BERITA IKM - CHEMISTRY IN MALAYSIA EDITORIAL BOARD

Chairperson

Datin ChM Dr Zuriati Zakaria

Members

Datuk ChM Dr Soon Ting Kueh, ChM Dr Yang Farina Abdul Aziz,
Prof ChM Dr Juan Joon Ching, ChM Yap Fei Ching,
Dato' GM(H) ChM Dr Hj Mas Rosemal Hakim bin Mas Haris,
ChM Dr Mohd Sufri bin Mastuli, ChM Dr Aqeel Saravanan

Please address all communications to:
Berita IKM Editorial Board Chairperson
Institut Kimia Malaysia
Wisma IKM, 127B, Jalan Aminuddin Baki, Taman Tun Dr Ismail,
60000 Kuala Lumpur
Tel: 03-7728 3272 Fax: 03-7728 9909
Website: http://www.ikm.org.my
Email: zuriatiz@gmail.com / ikmhq@ikm.org.my

CONTENTS

MESSAGE FROM THE PRESIDENT

IKM welcoming 2925 with great expectation and anticipation.

The year 2025 is finally here and we welcome it with enthusiasm, great expectation and also anticipation. Let me explain why.

We have just completed our 58th Annual General Meeting on 22nd March. For the year 2024, it has been a good year with the following:

- **IKM Membership** reached an all-time high of **6,208** with an increase of **389** over the previous year
- **Kuiz Kimia Kebangsaan Malaysia,** or **K_3M 2024,** also received the largest number of participants with **40,301** students from **957** schools taking part.
- **The International Congress on Pure & Applied Chemistry Mongolia (ICPAC Mongolia) 2024** was held in Ulaanbaatar, Mongolia from 28th August – 1st September 2024 with 143 participants
- **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 with 780 guests
- **CHEMISTS RULES 2024** was 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 IKM under the auspices of MQA.

All in all, 2024 is a good year. We started 2025 with the **58th Annual General Meeting** (**58AGM**) on 22nd March with 223 delegates. This is the largest attendees for IKM AGMs over the years. At the **58AGM**, 5 new Council members were elected upon the retirement of 5 Council members by rotation. The Chemists (Signatories to Test Reports) By-Laws resolution was postponed to allow for some minor amendments. After the AGM, the 340th Council Meeting was called to elect the principal office-bearers and appoint chairpersons of various divisions, committees & boards. The "new" Council and Officials of IKM for 2025/2026 are shown in the Report of the **58AGM**.

IUPAC 2025

The biggest challenge and also anticipation in 2025 is the **IUPAC 2025** which comprises the **53rd IUPAC General Assembly (53GA), 50th World Chemistry Congress (50WCC**) and **LabAsia 2025**. **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 are in an advanced stage in getting IUPAC 2025 ready. The **53rd IUPAC General Assembly** or, **53GA,** programme has been finalised and it will appear on the website before 31st March. For **50WCC**, we are still receiving abstracts and registrations. The deadline for abstracts submission is 31st March and at this moment that I am penning this message, we have about 800 abstracts and we are expecting to receive more than 1,000 abstracts. So far, this number is below expectation. We may consider to extend the deadline to receive more abstracts. As for registration, the number is far below expectation and we are expecting it to pick up soon as the deadline for early-bird registration is 30th April 2025. We have revised the expected numbers downwards to 2,500 delegates, 1,000 Malaysians and another 1,500 from overseas. As far as finance, we may be able to break-even with sponsorship totalling close to RM2 million. That is why I said that **IUPAC 2025** poses the greatest challenge with high expectation but also anticipation. But I think we gain valuable lessons and experience from here. It also gives Malaysians a good chance to experience the highest level of chemical sciences and knowledge.

We sincerely hope that **IUPAC 2025** will be a great success. If you have not signed up yet, please do so immediately. I would like to meet you at **IUPAC 2025**.

Datuk ChM Dr Soon Ting Kueh
President, Institut Kimia Malaysia
Date: 25th March 2025

58TH IKM AGM &

4TH IKM LAW HIENG DING FOUNDATION AGM

The 58th IKM Annual General Meeting (AGM) was held on 22 March 2025 at M World Hotel, Bandar Utama, Petaling Jaya, Selangor. IKM President, Datuk ChM Dr Soon Ting Kueh welcomed members to the 58th AGM of IKM. A total of 223 members attended the AGM.

The President presented PowerPoint slides describing IKM activities for the term 2024/2025. The year 2024 was described as a good year. IKM Hon. Secretary, ChM Chang Hon Fong, presented PowerPoint slides of the Annual Report. IKM 57th AGM & IKM Law Hieng Ding Foundation 3rd AGM was held on 30 March 2024 at Eastin Hotel, Kuala Lumpur. International Congress on Pure & Applied Chemistry (ICPAC) Mongolai 2024 was held at the Holiday Inn Ulaanbatar, Mongolia from 28th August - 1st September 2024. A total of 40 courses were conducted at IKM Professional Centre. Kuiz Kimia Kebangsaan Malaysia 2024 (K3M 2024) was held on 17 October 2024 at participating schools nationwide. A total of 40,301 students registered for the K3M 2024. A total of 59 participants registered for IKM Refresher Course 2024.

The IKM Final Examinations were held from 21-23 September 2024 at Universiti Malaya (KL). A total of 85 candidates registered for the examinations. IKM Laboratory Excellence Awards 2024 was awarded to 73 laboratories. Malam Kimia & Presentation of IKM Awards was held on 6 December 2024 at One World Hotel, PJ. The application for Provisional Accreditation of Chemistry degree programme based on the new IKM Chemistry Programme Standards will be announced by MQA. IKM Hon. Treasurer, ChM Dr Malarvili Ramalingam presented the Annual Statement of Accounts and Auditor's Report for 2024.

The highlight of the AGM was the election of 5 Council members to fill vacancies created by retired Council members.

Elected Council Members for 2025 - 2028 are:

- ChM Dr. Li Hui Ling
- ChM Dr. Yang Farina Abdul Aziz
- Dato' GM(H) ChM Dr. Hj. Mas Rosemal Hakim Bin Mas Haris
- Prof. ChM Dr. Phang Sook Wai
- Assoc. Prof. ChM Dr. Fatimah Salim

The AGM ended at 7.40PM and followed by the fourth IKM Law Hieng Ding Foundation AGM. During the AGM, the following Directors were re-elected to the Board:

- Dato' ChM Hj Mohamed Zaini Bin Abdul Rahman
- Datin ChM Dr Zuriati Zakaria

The 340th IKM Council meeting was held after Iftar to elect principal office bearers for 2025/2026 term. This was followed by appointments of Committee / Division Chairpersons.









EMERALD

The Council Members for 2025/2026	
President	Datuk ChM Dr Soon Ting Kueh
Vice President	ChM Dr Yang Farina binti Abdul Aziz
Registrar	ChM Marhayani binti Md. Saad
Hon. Secretary	ChM Chang Hon Fong
Hon. Treasurer	ChM Dr Malarvili Ramalingam
Hon. Asst. Secretary	Prof ChM Dr Juan Joon Ching
Hon. Asst. Treasurer	DCP(R) Dato' ChM Dr Yew Chong Hooi
Council Members	Datin ChM Dr Zuriati Zakaria Dato' GM(H) ChM Dr Hj Mas Rosemal Hakim bin Mas Haris Academician ChM Dr Ho Chee Cheong ChM Dr Li Hui Ling Asst. Prof ChM Dr Yvonne Choo Shuen Lann Prof ChM Dr Rusli Daik ChM Dr Nurul Huda binti Abd Karim Prof ChM Dr Phang Sook Wai Assoc Prof ChM Dr Fatimah Salim
Council Members (Co-opted)	ChM Haji Khairul Anuar Bin Abdul Aziz Assoc Prof ChM Dr Awis Sukarni Bin Mohmad Sabere
Council Members (Co-opted) - Chairman of IKM Branches	Northern branch – Dato' GM(H) ChM Dr Hj Mas Rosemal Hakim bin Mas Haris Southern branch – ChM Yap Fei Ching Sarawak branch – Prof ChM Dr Sim Siong Fong Sabah & FT Labuan branch – ChM Dr Jenny Lee Nyuk Len Perak branch – Assoc Prof ChM Dr Wong Lai Peng Terengganu branch – ChM Teo Chook Kiong Pahang branch – Prof ChM Dr Chong Kwok Feng

Precision in Plastics Testing

Ensuring ACCURACY, compliance, and RELIABILITY in every test!

With decades of expertise and participation in international standards committees, ZwickRoell provides customized, high-precision testing solutions for quality control and R&D.

- **Tensile, Flexure & Compression Testing**
  Accurate evaluation of mechanical properties (ISO 527, ASTM D638, ISO 178, ASTM D790, ASTM D695)
- **Effortless Impact Testing**
  Simulating real-world stress conditions (ISO 179, ASTM D256)
- **HDT & Vicat High-Precision Heat Testing**
  For superior material performance (ISO 75, ASTM D648)
- **Premier Melt Flow Testing**

30% Performance Gain with the Flexible Design of the New Mflow Extrusion Plastometer

- **Flexible Weight Preselection**
  Simple plug-in, 325 g to 21.6 kg
- **Precise & Reliable In-Depth Testing**
  Results with comprehensive analysis, incl. low to high MFR and live MVR
- **Scalable Testing for All Industry Needs**
  Seamless transition from manual to automatic
- **Broad Material Compatibility**
  Suitable for all thermoplastic polymers
- **Enhanced Efficiency & Seamless Workflow**
  Motorized extrudate cutting & fast blade adjustments ensure optimized performance
- **Minimized Downtime & Ergonomic Design**
  Future-proof your lab with modular design, quick cleaning, and optimal comfort

Inno Lab Engineering Sdn Bhd, official partner

iLab
the partner that you can trust

www.ilab.com.my
sales@ilab.com.my
+603 8023 1108

Zwick / Roell

Plastics

YOUNG CHEMISTS EVENT 2024: A PLATFORM TO STRENGTHEN ACADEMIC-INDUSTRY LINKAGES

The Malaysian Young Chemists Network (MYCN) successfully hosted its 3rd Young Chemists Event 2024 (YCE2024) on November 30, 2024, at Eastin Hotel, Petaling Jaya. This event aimed to strengthen the critical linkages between academia and industry, bringing together chemists from diverse professional backgrounds to discuss sustainability challenges, exchange ideas, and establish impactful collaborations.

Promoting Academic-Industry Synergy – YCE2024 attracted 90 participants, with 47.8% from industry and 41.1% from academia, reflecting its role as a vibrant platform for bridging the gap between theoretical research and practical applications. Participants included researchers, educators, students, industry professionals, and council members from the Malaysian Institute of Chemistry (IKM). The event provided a valuable opportunity to enhance understanding, build partnerships, and address pressing challenges in the chemical sciences.

A Collaborative and Inclusive Team – The success of YCE2024 was made possible by a dynamic and diverse organising committee, which brought together individuals from different races, genders, and professional sectors. Co-chaired by Dr Ally Yeo Chien Ing from Sunway University and Dr Mah Wee Li from KLK OLEO, the committee comprised members from both academia and industry. Academia was represented by prominent individuals such as Prof. Phang Sook Wai from Tunku Abdul Rahman University of Management and Technology, Assoc. Prof. New Siu Yee from the University of Nottingham Malaysia, Dr Siti Syaida Sirat from Universiti Teknologi MARA, Dr Mohd *Azlan* Kassim and Dr Tan Yee Seng from Sunway University. From the industry side, members included Ms. Liyana Salwa Mohd Nazir, Ms. Shazleen Saadon, and Ms. Emily S Majanun from Petronas Research Sdn Bhd, along with Mr. Muhammad Ashraf Bin Mohd Kahar and Mr. Jeremy Tia Seai Way from Rovksi Industries Sdn Bhd. The committee also Ms. Teh Say Lee of George Fischer Sdn Bhd and freelance trainer Ms. Enjoe Tong Lee Li. This rich mix of academic and industry representatives highlighted the event's emphasis on inclusivity and collaboration.

Event Highlights – The event began with registration, followed by inspiring opening speeches delivered by Datuk ChM Dr Soon Ting Kueh (IKM President) and Prof. ChM Dr. Juan Joon Ching (MYCN Chairman). Dr Ally Yeo welcomed participants, emphasising the importance of academic-industry connections in driving innovation and addressing global sustainability challenges. An engaging ice-breaking session encouraged participants to interact and network, followed by a buffet tea session that provided opportunities for informal discussions and exchanges of ideas.

The forum on "Critical Perspectives on Global Commitments to Achieving Carbon Net Zero by 2050" served as the program's highlight. Moderated by Mr. Damien Khoo, the forum featured distinguished speakers, including Prof. Adarsh Kumar from Sunway University and Madam Chandramalar Muthiah, Petronas' Principal in Fuel Technology. Prof. Adarsh, an expert in Sustainable Energy Technologies and Advanced Energy Materials, shared

insights from his extensive research in renewable energy solutions and cutting-edge materials designed to improve energy efficiency. Madam Chandramalar brought a practical perspective from the industry, discussing insights into strategies to meet global sustainability goals. Together, they engaged the audience in a stimulating discussion on bridging academic research and industrial practices to address the challenges of achieving carbon net zero. The discussion also addressed critical gaps between academic research and industrial practices, offering actionable solutions to align efforts toward achieving global sustainability goals.

Industry Collaboration in Focus – The success of the Young Chemists Event 2024 (YCE2024) would not have been possible without the generous support from our esteemed sponsors. Their contributions played a pivotal role in ensuring the event's smooth execution and overall impact. Platinum sponsors such as KLK Oleo, RGS Corporation, Bruker, and Rovksi Industries demonstrated their commitment to advancing the chemical sciences by providing invaluable resources and support. Gold sponsors, including QS Instruments, Synthomer, Innolab, and Lab Alliance, along with Silver sponsors Agilent and Pantherlab, further emphasised the importance of collaboration between academia and industry. Additionally, the backing of Bronze sponsors such as AGS, Saquosen Engineering, AcKU, and Anton Paar, as well as individual contributors, highlighted the widespread commitment to empowering young chemists and promoting meaningful connections within the chemical community. We extend our heartfelt gratitude to all sponsors for their unwavering support, which made YCE2024 a resounding success and an inspiring platform for collaboration and innovation.

Building Connections and Advancing Chemistry – Feedback from participants was overwhelmingly positive, with many praising the event's seamless blend of formal discussions and interactive sessions. Attendees appreciated the opportunity to engage with individuals from diverse backgrounds, strengthening both professional and personal connections. YCE2024 successfully demonstrated the power of collaboration in addressing challenges in the chemical sciences. The event reinforced MYCN's commitment to empowering young chemists, enhancing academic-industry linkages, and advancing innovation and sustainability in Malaysia's chemical landscape.

Report by
ChM Dr Ally Yeo Chien Ing
Sunway University Malaysia
E-mail address: allyy@sunway.edu.my

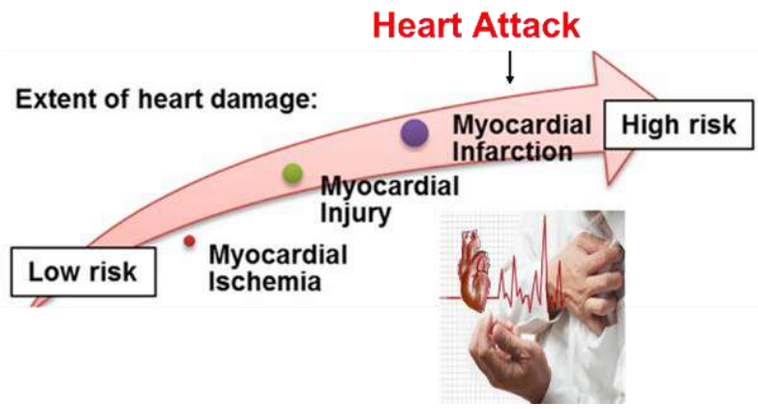
MALAYSIAN YOUNG CHEMISTS NETWORK

AI-ASSISTED COLOR STRIP FOR EARLY DETECTION AND PREDICTION RECURRENCE OF HEART ATTACKS

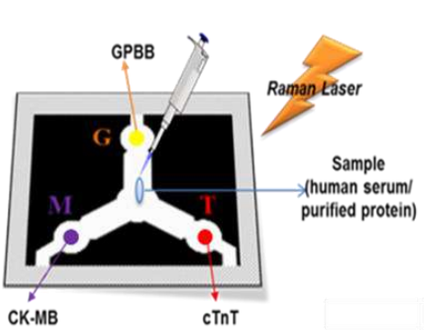
Assoc. Prof. ChM Dr. Khor Sook Mei
Department of Chemistry, Faculty of Science, Universiti Malaya
E-mail: naomikhor@um.edu.my

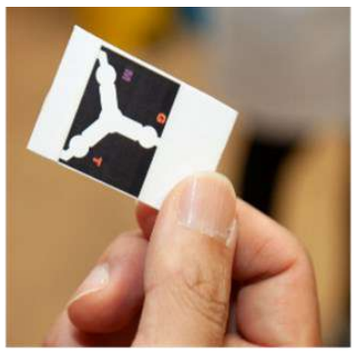
The Problem We're Trying to Solve – Heart attacks are a major cause of morbidity and mortality worldwide. The highest risk of death occurs within the first hours of the onset of a heart attack. Therefore, early diagnosis and prognosis of cardiac ischemia using an accurate and reliable point-of-care testing (POCT) device is critical for the effective management of patients with heart attacks. Improper diagnosis of patients with chest pain often leads to the inappropriate admission of patients without heart attacks, and vice versa. Our research team has successfully developed new diagnostic and predictive techniques, demonstrating their current or potential role in clinical practice.

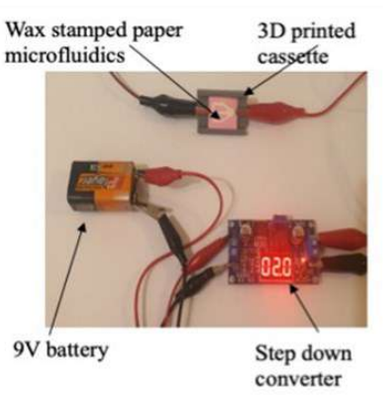
For What Reason Hasn't This Issue Been Resolved Yet? – Patient survival depends on the prompt diagnosis of heart attacks at the first sign of chest pain. However, this is difficult to identify, especially if there isn't a continuous elevation of the ST segment, as shown by an ECG or blood test. Heart attack diagnosis is accurate and quick with most POCT devices on the market. Unfortunately, based on the expression of cardiac biomarkers such as troponin I or T (cTnI or cTnT), creatine kinase-MB (CKMB), and myoglobin, the diagnosis of a heart attack is only reliable at intermediate and later stages of myocardial injury (> 6 h). Diagnosis is not possible when myocardial ischemia is still in its early stages.



Point-of-Care Devices Assisted by Artificial Intelligence (AI) for Timely Identification, Mitigation, and Accurate Prediction of Potential Heart Attacks – Our team demonstrated that using microfluidic paper-based biosensors with optical colorimetric and surface-enhanced Raman scattering (SERS) detection can help with quick and accurate diagnosis and prognosis of heart attacks. The new POCT devices could measure multiple biomarkers on-site, including cardiac troponin (cTnI), high-density lipoprotein (HDL), and low-density lipoprotein (LDL). Combining these critical biomarkers provided a quick, early heart attack diagnosis and prognosis. Prior research studies have also encountered obstacles or limitations, such as measuring only one biomarker or only total cholesterol levels, which do not distinguish between LDL and HDL. Colorimetric detection methods were affordable and convenient, omitting the need for complex central laboratory equipment. Meanwhile, SERS is a sensitive detection method suitable for measuring ultra-trace biomarkers like cardiac troponin, which are present at low concentrations in serum samples. Electrophoretic techniques were also introduced to remove multiple washing steps that could slow down the operation of the POCT devices. Non-specifically adsorbed biomolecules from the sample matrix, colorimetric markers, and SERS tags can be moved away along the electric field. We incorporated machine learning analysis into the process to improve the predictive forecasting of a recurrent heart attack. Adding a new machine learning framework and algorithms like CatBoost to the framework enhanced the diagnosis and prognosis. The framework had already been shown to be better at diagnosing and predicting heart attacks than traditional statistical methods. In short, the POCT devices enabled rapid diagnosis and prognosis of heart attacks without the need for bulky equipment or laborious imaging procedures that would require more resources and turn-around time. Hence, the developed POCT devices will speed up clinician decision-making based on the biomarker measurements provided and improve patient outcomes as quick medical interventions can be implemented.







Research Impact – Our newly developed handy POCT diagnostic device-assisted AI is crucial for allowing rapid, accurate, and reliable screening to rule in and rule out heart attacks, so that appropriate and immediate treatment can be provided. Advanced AI-assisted diagnostic and predictive tools in hospitals enable effective management of heart attacks. Our POCT device-assisted AI has the potential to be an alternative analytical laboratory tool that can be used to rapidly diagnose and accurately predict the possibility of heart attack reoccurrence in patients presenting in an emergency department, or perhaps in a primary care setting, once it has been further evaluated and validated. This can lower morbidity and death rates, benefiting the healthcare delivery system.

References

1. Sensors and Actuators B: Chemical, 2023, 394, 134403.
2. Critical Reviews in Biotechnology, 2020, 40(8), 1191-1209
3. Biosensors and Bioelectronics, 2024, https://doi.org/10.1016/j.bios.2024.116949

MALAYSIAN YOUNG CHEMISTS NETWORK

THE POTENTIALS OF TiO_2 HOMOJUNCTION PHOTOCATALYST FOR CONVERSION OF CO_2 UNDER VISIBLE-LIGHT IRRIDIATION

ChM Dr. Mohd Sufri Mastuli
School of Chemistry and Environment, Faculty of Applied Sciences, Universiti Teknologi MARA
E-mail: mohdsufri@uitm.edu.my

The global CO_2 emissions from fossil fuel combustion across various sectors have been growing over the years and contribute to the greenhouse effect and global warming. The photocatalytic reduction of CO_2 into value-added chemicals and renewable fuels could be an effective strategy to overcome its adverse effects.

Photoreduction of CO_2 - the choice of light source and semiconductor materials are two crucial factors that affect the overall photocatalytic performance. A typical photocatalytic reaction of CO_2 is carried out in the presence of semiconductor materials under solar radiation, which consists of ultraviolet (UV), visible light, and infrared (IR) spectrums. The semiconductor materials used as photocatalysts should have suitable valence band (VB) and conduction band (CB) positions. The potential difference between the VB and CB is called the band gap energy (E_g), and the energy levels of atoms have different populations of electrons (holes). When the semiconductors are exposed to light radiation (photon energy, *hv*), it leads to a sequence of steps in the order of:

- Photoexcitation and formation of electrons and holes.
- Segregation and migration of photoinduced electrons-holes to the exterior of the photocatalyst.
- The charge carriers will undergo photo-oxidation and photo-reduction, depending on the reactants involved.

Mechanism of photoreaction – As shown in Figure 1 (a), the incoming photon energy must be equal to or greater than the band gap energy of a semiconductor. Thus, the photoinduced electrons (e^-) are promoted from the filled VB to the empty CB, leaving behind the holes (h^+) in the VB, generating electron-hole pairs. The photoinduced charge carriers in both CB and VB will then respectively move to surface of the photocatalyst while a fraction of them experience recombination. At the exterior of the photocatalyst, e− and h+ initiate the photo-reduction and photo-oxidation respectively by forming reactive species e.g. superoxide anions (O_2•−) and hydroxyl (OH•) radicals. These electrons and holes perform numerous chemical redox (reduction-oxidation) reactions with donor species to create final products. Importantly, the CB potential should be more negative than the reduction potential of CO_2, and the VB potential should be more positive than the oxidation potential of H_2O. Both the reduction potential and oxidation potential of the chemical reactions must be within the CB and VB regime of the semiconductors, as depicted in Figure 1(b), to ensure the photogenerated electrons and holes can be utilized to the maximum extent.

TiO_2 photocatalyst - Titanium dioxide (TiO_2) is the most used photocatalyst for various applications due to its photoactivity, availability, stability, low toxicity, and safety. A pristine TiO_2, which is a white solid in its pure crystalline form, is well-known as a UV light-active photocatalyst. However, the practical applications of TiO_2 are significantly limited by its wide band gap (E_g = 3.2 eV for anatase and E_g = 3.0 eV for rutile), inefficient photoinduced electron-hole separation, rapid charge carrier recombination rate, and limited light absorption to the UV range (only 5% of the solar spectrum). Therefore, it is essential to enhance the ability of TiO_2 to absorb visible light (which constitutes about 43% of the solar spectrum) and improve the efficiency of photo-induced electron-hole separation as well as the recombination rate.

Modification of TiO_2 photocatalyst - Through morphological and surface modifications, the properties of TiO_2 can be significantly altered, providing the potential to enhance photocatalytic activity and boost the photoreduction of CO_2, and even induce new photocatalytic reaction paths. Various modification techniques have been reported in the literature, such as metal deposition, metal doping, non-metal

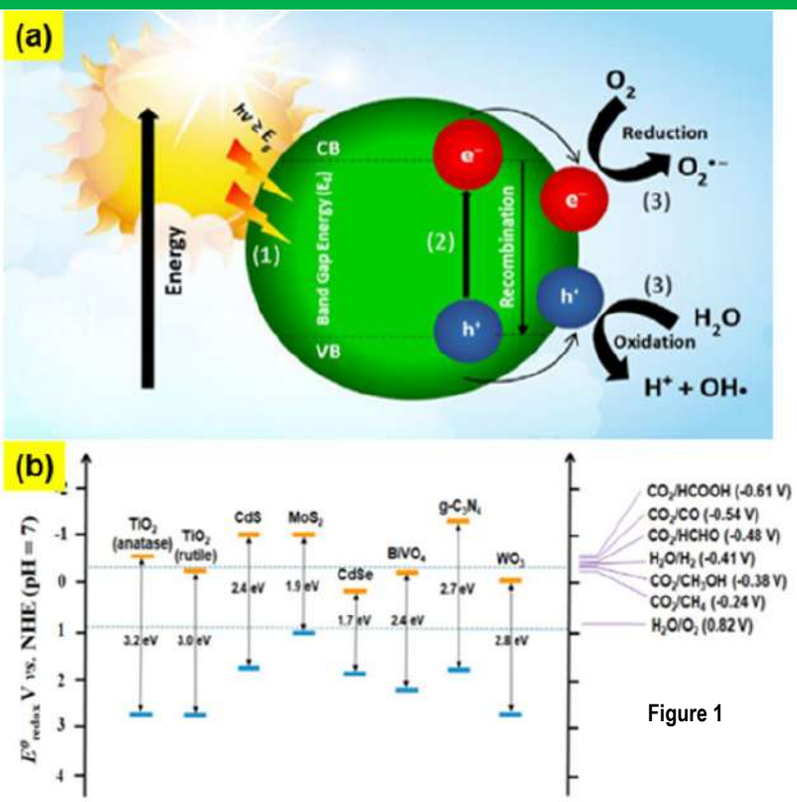


Figure 1

doping, incorporation of noble metals, morphology modulation, surface sensitization, and composite fabrication (mostly heterojunction approach) [2].

TiO_2 heterojunction photocatalyst - The fabrication of heterojunction photocatalysts, defined as the coupling of one semiconductor with another, is acknowledged as an efficient method to enhance the separation of photoinduced electron-hole pairs within TiO_2 photocatalysts, leading to their subsequent migration across the interface. However, these heterojunction photocatalysts encounter several challenges, such as differences in atomic thermal expansivity and lattice structure constants, which can result in interfacial lattice distortion [3]. This implies that the catalysts are confronted with mismatched interfaces and discontinuity in the band gap alignments. The lattice distortion can also trigger adverse effects, including the tendency in recombination of charge carriers and phase separation when the photocatalysts are reused.

TiO_2 homojunction photocatalysts – It becomes a focal point in advanced photocatalytic technology. The synthesis process is simple as a homojunction involves the formation of an interface between two identical semiconductors (in this instance, solely TiO_2). These semiconductors have comparable band gap energy and identical chemical composition, but may vary in terms of dimensions, morphologies, crystal facets, and whether they are single or mixed phases, as depicted in Figure 2. The semiconductors at the interface display diverse physical, electrical, and optical properties. It is crucial to highlight that homojunction photocatalysts possess congruent interfaces with well-aligned and continuous band bonding [4]. This results in virtually no mismatches or distortions in the lattice, which significantly enhances photoinduced charge transfer and impedes the recombination of charge carriers. This is primarily attributed to the structural, design, and intrinsic advantages of homojunction-based photocatalysts. Various research groups have combined different phases (anatase, rutile, brookite) of TiO_2 as illustrated in Figure 3, to create homojunction photocatalysts for various photocatalytic reactions such as photoelectrochemical water splitting, photodegradation of pollutants / dyes / pesticides and photogeneration of hydrogen. It should be noted that no TiO_2 homojunction photocatalysts have been used for the photoreduction of CO_2 under visible light irradiation due to the limitation of light absorption attributed to a wide band gap energy. Additionally, the mechanical mixing between different phases and morphologies results in unstable homojunction photocatalysts due to weak interactions and low chemical intimacy. It has been reported that the visible light-driven CO_2 reduction using homojunction photocatalysts is possible using a modified graphitic carbon nitride (g-C_3N_4) due to a narrow band gap energy of 2.7 eV and below. In 2023, Li et al. reported understanding the unique S-scheme charge migration in triazine/heptazine crystalline graphitic carbon nitride homojunction for the photoreduction of CO_2 [6].

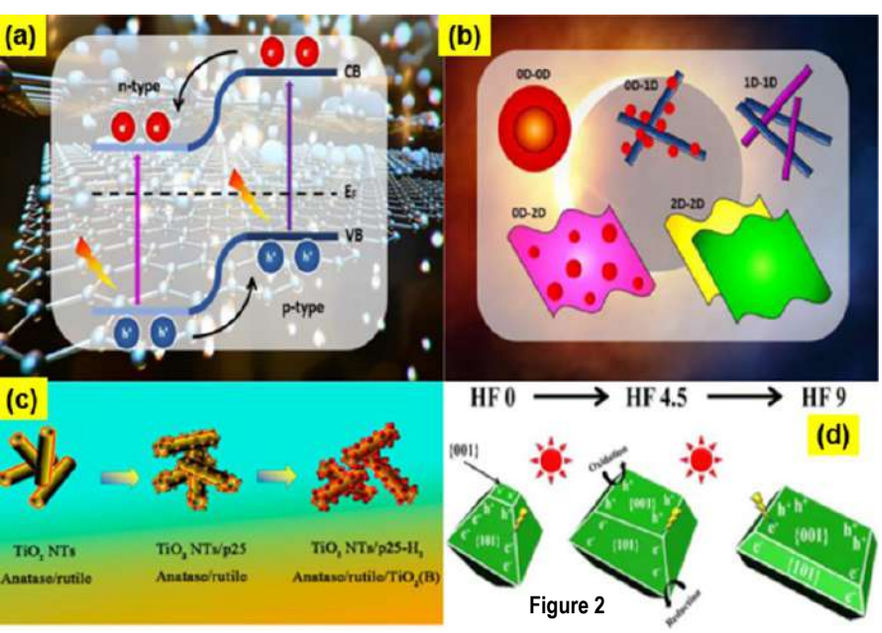


Figure 2

Black TiO_2 as a homojunction photocatalyst – It has a band gap narrow to 1.5 eV that enables to absorb not only the visible light region but also the infrared region, thereby utilizing most of the solar spectrum. The first black TiO_2 was discovered by Chen et al. in 2011, and it was found to significantly absorb energy from the infrared region of the solar spectrum due to its black colour [13]. There are several review papers available in the literature that discuss the synthesis, properties, and applications of black TiO_2 [14]. During the synthesis process, self-doping with Ti^{3+} results in a narrower band gap of black TiO_2. Various methods have been reported for synthesizing black TiO_2, which involve the transition from Ti^{4+} to Ti^{3+} states. These methods include the use of highly active hydrogen species such as $NaBH_4$, reduction by active metals such as Al, Mg, Zn, organic molecules such as imidazole, ascorbic acid, electrochemical reduction, hydrogen plasma treatment, and hydroxylation pulsed laser ablation [15]. A cost-

effective and straightforward processing method for synthesizing black TiO_2 is essential for its industrial application. To date, black TiO_2 homojunction photocatalyst has demonstrated remarkable capabilities in photocatalytic applications such as hydrogen production and pollutant remediation [16,17]. Its potential for CO_2 photoreduction has been highlighted in a few pioneering studies. Qingli et al. (2015) developed black TiO_2 films with unique porous structures on Ti plates via hydrothermal treatment, achieving significantly higher CO_2 photoreduction rates compared to conventional TiO_2. This enhancement is attributed to substantial Ti^{3+} and oxygen vacancies, expanding absorbance into the visible light region [18]. Zhao et al. (2016) further enhanced photoreduction activity by coating black TiO_2 with Cu nanoparticles, which increased visible-light absorption and CO_2 adsorption, and improved charge separation [19]. Another study by Ullattil et al. introduced a one-pot gel combustion method to create self-doped black anatase TiO_2-x, aiming to produce homojunction photocatalysts from a single precursor [20]. The possibility of synthesizing homojunction photocatalysts from a single precursor, resulting in two components with different properties will be the goal for the TiO_2 homojunction photocatalysts.

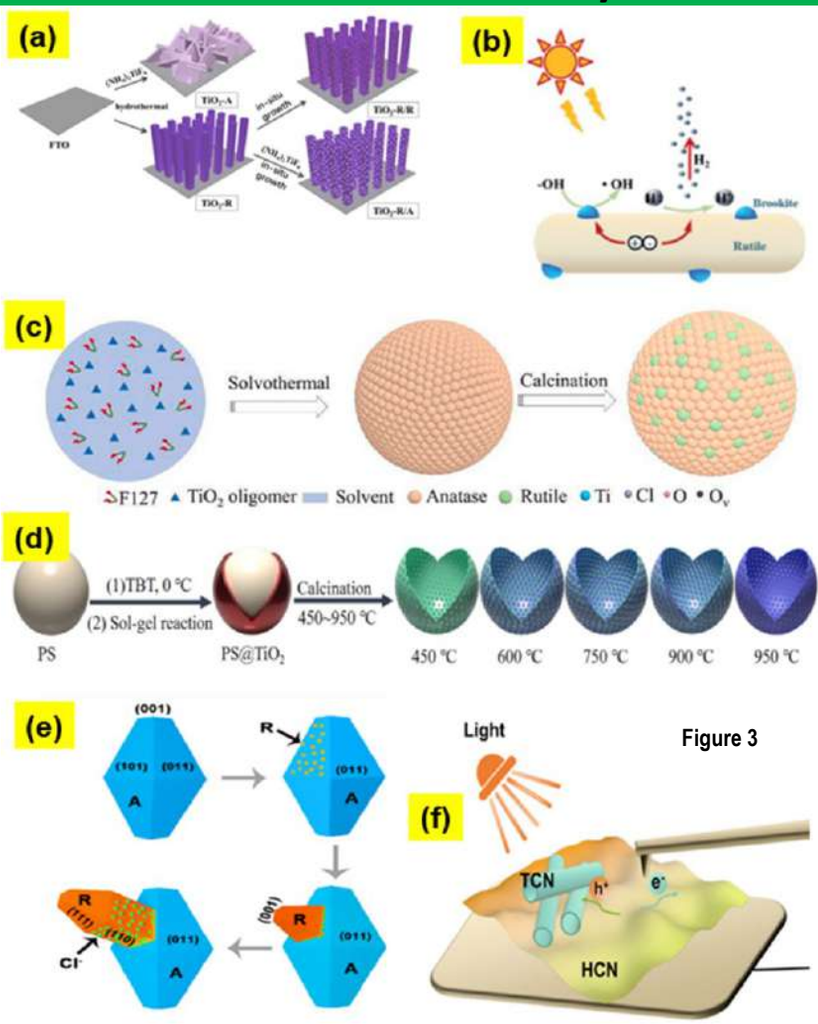


Figure 3

References

[1] Domínguez-Espíndola RB, Arias DM, Rodríguez-González C, Sebastian PJ. A critical review on advances in TiO2-based photocatalytic systems for CO2 reduction. Appl Therm Eng 2022;216:119009. https://doi.org/10.1016/j.applthermaleng.2022.119009.

[2] Li Y, Wei Y, He W, Tang Z, Xiong J, Zhao Z. Ordered macroporous structured TiO2-based photocatalysts for CO2 reduction: A review. Chinese Chem Lett 2023;34:108417. https://doi.org/10.1016/j.cclet.2023.108417.

[3] Li M, Liu H, Song Y, Gao J. Design and constructing of mutually independent crystal facet exposed TiO2 homojunction and improving synergistic effects for photoelectrochemical hydrogen generation and pollutant degradation. Int J Energy Res 2018;42:4625–41. https://doi.org/10.1002/er.4204.

[4] Li P, Zhou Y, Zhao Z, Xu Q, Wang X, Xiao M, et al. Hexahedron prism-anchored octahedronal CeO2: Crystal facet-based homojunction promoting efficient solar fuel synthesis. J Am Chem Soc 2015;137:9547–50. https://doi.org/10.1021/jacs.5b05926.

[5] Phang SJ, Wong VL, Tan LL, Chai SP. Recent advances in homojunction-based photocatalysis for sustainable environmental remediation and clean energy generation. Appl Mater Today 2020;20:100741. https://doi.org/10.1016/j.apmt.2020.100741.

[6] Li F, Yue X, Liao Y, Qiao L, Lv K, Xiang Q. Understanding the unique S-scheme charge migration in triazine/heptazine crystalline carbon nitride homojunction. Nat Commun 2023;14:1–10. https://doi.org/10.1038/s41467-023-39578-z.

[7] Ren L, Li Y, Mao M, Lan L, Lao X, Zhao X. Significant improvement in photocatalytic activity by forming homojunction between anatase TiO2 nanosheets and anatase TiO2 nanoparticles. Appl Surf Sci 2019;490:283–92. https://doi.org/10.1016/j.apsusc.2019.05.351

[8] Xiao Y, Wu J, Li H, Liu X, Li Q, Zhang Y, et al. In-situ regulation of hollow TiO2 with tunable anatase/rutile heterophase homojunction for promoting excellent photocatalytic degradation of pesticides. Ceram Int 2023;49:38070–80. https://doi.org/10.1016/j.ceramint.2023.09.137.

[9] Huang X, Zhang R, Gao X, Yu B, Gao Y, Han Z gang. TiO2-rutile/anatase homojunction with enhanced charge separation for photoelectrochemical water splitting. Int J Hydrogen Energy 2021;46:26358–66. https://doi.org/10.1016/j.ijhydene.2021.05.118.

[10] Gao X, Zhang Y, Wang X, Zhou Y, Wu WD, Chen XD, et al. Unraveling the photocatalytic activation of peroxymonosulfate on anatase/rutile homojunctions: Efficacy and mechanism study. Chem Eng J 2023;476:146804. https://doi.org/10.1016/j.cej.2023.146804.

[11] Chen J, Guan M, Zhang X, Gong X. Insights into a rutile/brookite homojunction of titanium dioxide: Separated reactive sites and boosted photocatalytic activity. RSC Adv 2019;9:36615–20. https://doi.org/10.1039/c9ra07483j.

[12] Li F, Yue X, Liao Y, Qiao L, Lv K, Xiang Q. Understanding the unique S-scheme charge migration in triazine/heptazine crystalline carbon nitride homojunction. Nat Commun 2023;14:1–10. https://doi.org/10.1038/s41467-023-39578-z.

[13] Chen X, Liu L, Yu PY, Mao SS. Increasing solar absorption for photocatalysis with black hydrogenated titanium dioxide nonocrystals. Science (80-) 2011;331:746–51.

[14] Soleimani M, Ghasemi JB, Badiei A. Black titania; novel researches in synthesis and applications. Inorg Chem Commun 2022;135:109092. https://doi.org/10.1016/j.inoche.2021.109092.

[15]Rajaraman TS, Parikh SP, Gandhi VG. Black TiO2: A review of its properties and conflicting trends. Chem Eng J 2020;389:123918. https://doi.org/10.1016/j.cej.2019.123918.

[16] Miao Z, Wang G, Li L, Wang C, Zhang X. Fabrication of black TiO2/TiO2 homojunction for enhanced photocatalytic degradation. J Mater Sci 2019;54:14320–9. https://doi.org/10.1007/s10853-019-03900-2.

[17] Bi X, Du G, Kalam A, Sun D, Yu Y, Su Q, et al. Tuning oxygen vacancy content in TiO2 nanoparticles to enhance the photocatalytic performance. Chem Eng Sci 2021;234:116440. https://doi.org/10.1016/j.ces.2021.116440.

[18] Qingli W, Zhaoguo Z, Xudong C, Zhengfeng H, Peimei D, Yi C, et al. Photoreduction of CO2 using black TiO2 films under solar light. J CO2 Util 2015;12:7–11. https://doi.org/10.1016/j.jcou.2015.09.001.

[19] Zhao J, Li Y, Zhu Y, Wang Y, Wang C. Enhanced CO2 photoreduction activity of black TiO2-coated Cu nanoparticles under visible light irradiation: Role of metallic Cu. Appl Catal A Gen 2016;510:34–41. https://doi.org/10.1016/j.apcata.2015.11.001.

[20] Ullattil SG, Periyat P. A “one pot” gel combustion strategy towards Ti3+ self-doped “black” anatase TiO2-x solar photocatalyst. J Mater Chem A 2016;4:5854–8. https://doi.org/10.1039/c6ta01993e.

Technical Visit to Synthomer Sdn Bhd: A Step Towards Innovation and Sustainability

On 4th November 2024, a group of IKM delegates had a golden opportunity to visit Synthomer Asia Innovation Centre at Kulai, Johor a leading manufacturer of high-performance latex and emulsions. This visit, aimed at fostering collaboration, enhancing knowledge, and exploring the latest innovations in the chemical manufacturing industry, provided valuable insights into the advanced technologies employed by Synthomer, as well as their commitment to sustainability. This technical visit was initiated by the Division of Green & Sustainable Chemistry (DGSC) under the leadership of Prof Juan Joon Ching. The organiser for this scientific tour was Prof Phang Sook Wai and assisted by Mr Lee Ching Yik.

Synthomer, a global leader in the production of polymers, is renowned for its wide array of products used in industries ranging from nitrile gloves, paints and coatings to adhesives and construction. Synthomer Asia Innovation Centre strategically located in Kulai, Johor serves as a significant part of the company's global manufacturing network. It specializes in the production of latex emulsions, which are key components in a variety of applications such as nitrile gloves, adhesives, paints and textiles.

IKM delegates were warmly welcomed by the Synthomer's management team, who provided an insightful introduction to the facility's operations. The visit began with a comprehensive presentation by Dr Goh Yi Fan, outlining the company's core values, operational excellence and future growth strategies. The focus on R&D, innovation, and sustainability stood out as key themes during this session. Prof Juan represented DGSC and IKM to present an appreciation plaque to the Vice President of Innovation and Sustainability from the Health and Protection and Performance Materials (HPPM), Dr Gareth Simpson.

The delegates toured the laboratory areas, where they had the opportunity to observe the state-of-the-art processes in action. Synthomer's use of advanced latex production technologies was particularly impressive. We were also grateful to have the opportunity to visit the coating and construction department, headed by Ms Goh Ching Lee. The Kulai site integrates various automated control systems, ensuring precision and consistency in manufacturing of products.

The delegates were able to view the different stages of emulsion polymerization whereby raw materials were transformed into high-quality latex emulsions. The use of green chemistry principles was evident throughout the process, from careful selection of raw materials to energy-efficient methods employed to minimize environmental impact.

One of the key takeaways from the visit was Synthomer's strong commitment to sustainability. The company has invested heavily in environmentally friendly technologies that align with global efforts to reduce carbon footprints. At the Kulai facility, this is reflected in their water treatment systems, which ensure that the facility's operations have minimal environmental impact. Additionally, the site incorporates energy-efficient processes that reduce overall energy consumption. During the lunch break, the delegates engaged in a fruitful discussion with Synthomer's technical experts. Lunch served was Malay style buffet with Nasi Bohari, Kambing Kuzi, Dalcha Sayur and some tropical fruits. We had a bridging hour to enhance the networking between academicians and industry experts.

The lunch session covered a range of topics, including the challenges faced by the chemical manufacturing industry, particularly in the areas of

environmental regulation and product innovation. The discussion also focused on the future of the latex and emulsion market, with a strong emphasis on how the industry is evolving to meet changing consumer demands for more sustainable and high-performance products. IKM delegates took the opportunity to raise questions about Synthomer's approach to R&D, particularly in the context of developing new, eco-friendly materials. Synthomer shared insights into its research strategy, highlighting the role of collaborations with universities and industry partners in driving forward innovations in polymer technology.

At the end of the technical visit, Dr Gareth Simpson presented souvenirs to IKM delegates. This visit was not only an opportunity to witness advanced manufacturing in person but also a chance to strengthen networking with industry experts. The visit to Synthomer Kulai provided valuable lessons in integration of sustainability with industrial processes and showcased the importance of continuous innovation in ensuring the chemical industry's long-term success. The visit concluded with a round of thanks to Synthomer for their warm hospitality and for sharing their expertise. IKM delegates left the facility with a deeper understanding of the challenges and opportunities in the chemical industry, as well as a renewed commitment to advancing sustainable practices within their own professional spheres.

In conclusion, the technical visit to Synthomer Sdn Bhd was an enriching experience for all involved. It served as a reminder of the critical role that innovation, sustainability and collaboration play in shaping the future of the chemical industry. The knowledge gained from this visit will undoubtedly inspire IKM community to continue striving for excellence while embracing the principles of sustainability and environmental responsibility.

Report by
Phang Sook Wai, Juan Joon Ching &
Lee Ching Yik

KARNIVAL KIMIA MALAYSIA by IKM PAHANG BRANCH, DEPARTMENT OF CHEMISTRY (IIUM), AND DEPARTMENT OF CHEMISTRY MALAYSIA (PAHANG BRANCH)

The Karnival Kimia Malaysia (K2M) 2024 is a prestigious annual program organised by the Malaysian Institute of Chemistry (IKM) since 2008. Recently, the carnival was also hosted by International Islamic University Malaysia (IIUM), Kuantan Campus, on the 13th and 14th of December 2024 at the Kulliyyah of Science in conjunction with its 25th year celebration other than the National Science Week. This event was conducted in collaboration with Malaysian Department of Chemistry (JKM) Pahang Branch. K2M aimed to inspire a deeper understanding and appreciation of science, with a particular focus on chemistry. The program was specially tailored to benefit school students and the general public by exposing them to the wonders of science through interactive and engaging activities.

OPENING CEREMONY

The event commenced with an official opening ceremony officiated by Associate Professor ChM Dr. Awis Sukarni Bin Mohmad Sabere, Chairman of IKM Pahang Branch and a representative of IKM. The ceremony was graced by the presence of esteemed guests, including ChM Zarida Binti Zahari, representing the JKM Pahang Branch; Associate Professor Dr. Zarina Zainuddin, Dean of the Kulliyyah of Science, IIUM Kuantan; and ChM Dr. Mohamad Wafiuddin Ismail, the Chairman of K2M. Their presence underscored the significance of the carnival in promoting chemistry as a pivotal discipline in both education and industry. The program was open to the general public and the entire IIUM community, offering a platform for participants to explore the fascinating world of chemistry in an engaging and interactive manner. The event witnessed an exceptional turnout, with nearly 1,000 school students, mainly from secondary schools across the state of Pahang.

ENGAGING ACTIVITIES

To ensure the carnival was both informative and enjoyable, a diverse array of activities was meticulously designed to cater to participants of all ages and backgrounds:

Laboratory Demonstrations

Participants had the unique opportunity to engage in hands-on activities showcasing the application of chemistry in everyday life. These sessions included demonstrations on creating products such as perfumes, hand soaps, lip balms, bath bombs, candles, and resin bookmarks. By engaging directly with these processes, participants not only gained practical insights into chemistry but also developed a greater appreciation for its role in creating everyday items.

Escape Room Challenge

One of the most popular attractions, the chemistry-themed escape room challenge, was specifically designed to test participants' creativity, critical thinking, and teamwork. This activity required them to solve puzzles and problems based on chemistry concepts, fostering analytical thinking and collaborative problem-solving skills. Two teams from Sekolah Menengah Kebangsaan (SMK) Air Putih won the first place and third place for this challenge. Meanwhile, SMK Sultan Abu Bakar 2 received the second place.

Cheminnovator Competition

The Cheminnovator Competition provided a platform for students to demonstrate their creativity and innovation by developing solutions to real-world issues using chemistry principles. This competition encouraged participants to think outside the box and explore the vast potential of chemistry in addressing modern challenges. At the end of the competition, the students had to present their solutions in front of two judges: Assistant Professor ChM Dr Wan Hazman Danial and Assistant Professor ChM Ts Dr Saiful

'Arifin Shafiee. Two teams from SMK Mat Kilau won the first place and second place for the competition. However, the third place went to SMK Sultan Abu Bakar 1.

Jabir Hayyan Chemistry Quiz

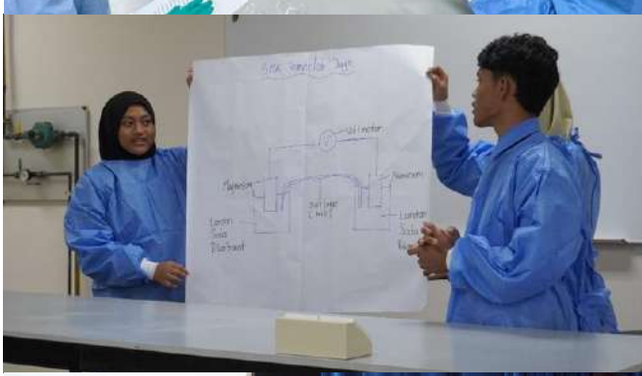
The Jabir Hayyan Chemistry Quiz tested students' knowledge of various chemistry topics in a dynamic and engaging format. This quiz allowed participants to demonstrate their mastery of chemical theory, quick thinking, and ability to apply their knowledge under time constraints. The first and second spots were taken by SMK Air Putih. SMK Mat Kilau secured the third place for this competitive quiz.

CAREER TALKS

An integral component of K2M was its focus on career development and industry exposure. Renowned companies such as PETRONAS Chemicals Ammonia, SugarBomb, and Lynas Malaysia conducted insightful career talks. These sessions offered participants a glimpse into the vast career opportunities available in the chemical industry, highlighting the practical applications of chemistry in various sectors. Industry professionals shared their experiences, challenges, and valuable advice, inspiring attendees to consider careers in science and technology.

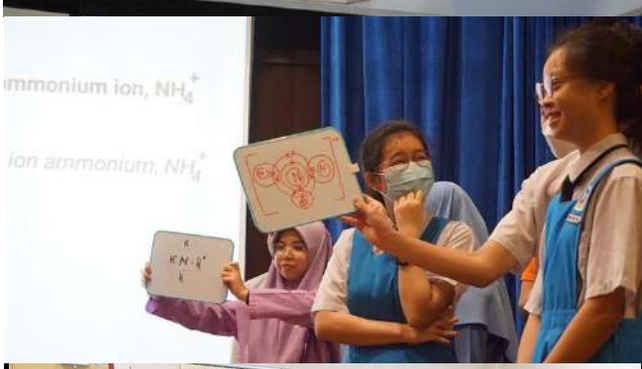
INTERACTIVE EXHIBITIONS

The carnival also featured interactive exhibitions hosted by a variety of government and private organizations, including JKM, IKM, SugarBomb, PChem Supply and Services, and others. These exhibitions showcased cutting-edge technological advancements, innovative applications of chemistry, and potential future developments in science and technology. Participants were given a unique opportunity to engage in meaningful dialogues with professionals, broadening their understanding of chemistry's role in society. The exhibitions not only captured the interest of attendees but also facilitated networking opportunities between students, educators, and industry experts.



OTHER ACTIVITIES

Apart from all the aforementioned activities, the visitors were also given a chance to immerse themselves in an archery activity. There were also a lot of merchandise related to chemistry that were sold at the exhibition which include tote bags, keychains, Phurplem kit (pH test kit), and Volta kit (electrochemical learning kit). They also can buy foods and drinks from the local vendors at the bazaar.



CONCLUSION

K2M 2024 successfully bridged the gap between academia, industry, and the community. By fostering collaboration between educational institutions, industries, and government agencies, the carnival played a vital role in promoting a culture of innovation and scientific curiosity. Through its diverse and engaging activities, Karnival Kimia Malaysia 2024 left a lasting impact on its participants, particularly the younger generation. The program inspired students to view chemistry as a dynamic and exciting field with the potential to address global challenges and improve lives. The event was also featured in a segment on BERITA RTM.

Report by
Asst. Prof. ChM Dr Mohamad Wafiuddin Bin Ismail &
Asst. Prof. ChM Ts. Dr Saiful 'Arifin Shafiee

CAREER QUEST: A MILESTONE IN IKM TERENGGANU'S CSR PROGRAMME TO PREPARE FUTURE CHEMISTS

IKM Terengganu Branch, together with Universiti Malaysia Terengganu's Chemistry Science Club (KESMIA), successfully organized Chemistry Bonding 3.0 with the theme "Career Quest: Towards Employment." Held on 7 December 2024 at Auditorium 1-01, Kompleks Kuliah Berpusat, Universiti Malaysia Terengganu, this event is part of a collaboration under a Memorandum of Understanding (MoU) between IKM and UMT. The main goal of the event was to connect students with the chemical sciences industry in Malaysia and provide valuable career information.

The event was officially opened by Assoc. Prof. ChM Dr. Hanis binti Mohd Yusof, Head of the Chemical Sciences Program, UMT. The program attracted students from the Bachelor of Science (Chemistry) with Honors programme at UMT, along with participants from Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA). A total of 180 participants attended the event, making it a highly engaging and impactful session.

The event allowed attendees to learn about career opportunities in the chemical sciences industry and to interact directly with experienced professionals. Three main speakers shared their knowledge and experiences during the program. Ts. ChM Al-Malek Fahd Abdul Hamid, the Water Quality Manager at Syarikat Air Terengganu Sdn. Bhd., explained the roles in water quality management. ChM Haji Mohammad Sabri Bin Yaacob, Senior Chemist at Kemaman Bitumen Company Sdn. Bhd., talked about opportunities in the chemical sciences sector. Prof. ChM Dr. Wan Mohd Khairul Wan Mohamed Zin, a lecturer at UMT, discussed the skills and preparations needed for students to transition successfully from university to industry.

The program aimed to provide basic knowledge about career paths in chemical sciences, help students understand the skills needed for the industry, and promote Sustainable Development Goals (SDG) related to Quality Education. By the end of the event, these aims were successfully achieved, and students gained clearer ideas about their future careers.

"Career Quest: Towards an Employment" received strong participation and was seen as a great success. The program showed how partnerships between universities and industry organizations can help prepare students for their careers. It is an excellent example of how collaboration can improve education and career opportunities in Malaysia's chemical sciences industry.

OHAUS®

Guardian Hotplate Stirrer

Guardian™5000

Guardian™3000

Guardian™2000

www.ohaus.com

OHAUS Corporation, Southeast Asia

Level 11, Tower 1, PJ33, Jalan Professor Khoo Kay Kim,
Seksyen 13, 46200 Petaling Jaya, Selangor

Tel: +60 3-7844 5935

E-mail: Gabriel.Hiew@ohaus.com
SEASales@Ohaus.com

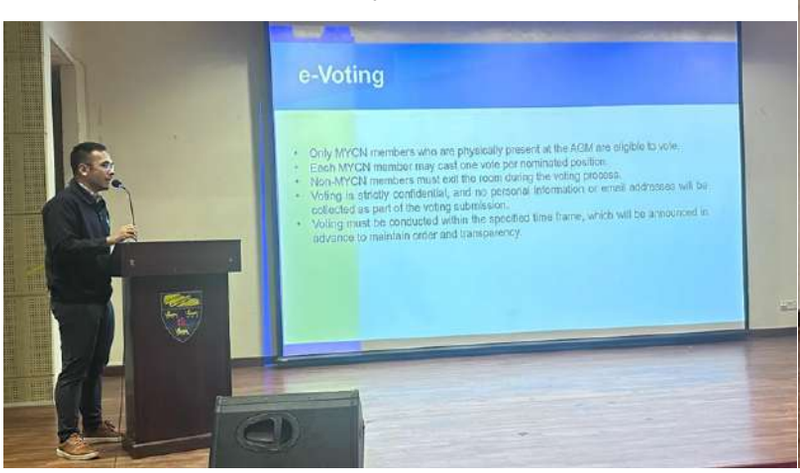
PIONEERING THE FUTURE: HIGHLIGHTS FROM THE INAUGURAL ANNUAL GENERAL MEETING (AGM) OF THE MALAYSIAN YOUNG CHEMISTS NETWORK (MYCN)

The Malaysian Young Chemists Network (MYCN), a visionary platform aimed at fostering collaboration, innovation, and excellence among emerging researchers and professionals in the field of chemistry, recently held its first-ever Annual General Meeting (AGM) on the 30th November 2024 at the Institut Pengurusan & Perkhidmatan Penyelidikan (IPPP), University Malaya, Kuala Lumpur. This landmark event brought together a dynamic group of young chemists from the academia and industry along with esteemed representatives from the Malaysian Institute of Chemistry (IKM), including the IKM President, Datuk ChM Dr. Soon Ting Kueh, and Council Member Datin Dr. Zuriati Zakaria. The session was skilfully moderated by Ts. ChM Dr. Mohamad Shazeli Che Zain, who ensured the event proceeded seamlessly.

The AGM marked a historic moment in the development of MYCN where it was designed to establish a robust framework and formalize the leadership structure essential to advancing MYCN's mission since its establishment in 2018. The atmosphere was a vibrant mix of anticipation and camaraderie, as attendees representing different professional backgrounds fathered to reflect MYCN's journey so far and shape its future. The meeting commenced with a welcome address by Prof. ChM Dr. Juan Joon Ching, the outgoing and founding Chairman of MYCN, followed by an officiating address by Datuk ChM Dr. Soon Ting Kueh, the President of IKM. The opening remarks highlighted the importance of empowering young chemists to tackle critical challenges in the field of chemistry. This was followed by a comprehensive presentation on MYCN's activities and achievements over the past six years. The report showcased the MYCN's role in fostering collaborative programs, organizing workshops, and promoting public engagement in chemistry. Key achievements highlighted included the Karnival Kemahiran dan Kerjaya Kimia Malaysia (K_4M) and the Young Chemist Evening (YCE). The report also provided an overview of MYCN's financial status and strategic plans, fostering transparency and inclusivity among its members.

The centrepiece of the AGM was the election of the new EXCO members who continue on the legacy of its founding members. The election process for the 2024-2026 EXCO members was meticulously planned to ensure transparency, inclusivity, and fairness where the nomination and electoral processes were conducted through e-voting system facilitated by Google Forms. Nominees were invited to deliver brief presentations outlining their vision for MYCN and their plans for driving its mission forward. The newly elected committee includes Assoc. Prof. ChM Dr. Fatimah Salim as Chairperson, Ts. ChM Dr. Damien Khoo Yiyuan as Vice Chairperson, ChM Mr. Chua Yao Jun (Jordan) as Secretary, ChM Dr. Kuah Yong Cheun as Assistant Secretary and ChM Dr. Nurul Huda Abd Karim as Treasurer. Meanwhile, five EXCO members were elected to focus on key areas such as strategic partnerships, communication, event planning, professional development, and knowledge transfer. They are Ts. ChM Dr. Mohamad Shazeli Che Zain, Ts. ChM Dr Kumuthini Chandrasekaram, Assoc. Prof. ChM Dr. Awis Sukarni, ChM Dr Mazlin Mohideen and Assoc. Prof. ChM Dr Lim Teck Hock (Eric), respectively.

A key highlight of the AGM was the open discussion session, where members shared their insights, challenges, and aspirations for MYCN, reflecting MYCN's commitment to inclusivity and collaboration. The AGM concluded with closing remarks from the newly elected Chairperson of MYCN, Assoc. Prof. ChM Dr. Fatimah Salim, who expressed gratitude for the trust placed in the new leadership team. She reiterated the importance of collective effort in achieving the network's vision and encouraged all members to actively contribute to its initiatives. Participants left the AGM with a



renewed sense of purpose and optimism. The AGM not only marked the beginning of a new chapter of MYCN but also underscored the potential of young chemists driving meaningful change. The inaugural AGM of MYCN was more than just a meeting; it was a celebration of ideas, aspirations, and possibilities. As the MYCN continues to grow and evolve, it remains steadfast in its commitment to empowering young chemists and fostering a culture of innovation, collaboration, and excellence. The first AGM will be remembered as a milestone event that is poised to make significant contributions to chemistry and Malaysia in the years to come.

Post election, the newly elected EXCO members participated in a discussion session cantered on key priorities for the coming years, including expanding membership, strengthening inter-disciplinary collaborations, and enhancing the network's visibility at state and national levels. The new leadership team pledged to prioritize inclusivity, collaboration, and impactful scientific contributions during their term. Their vision encompasses empowering flagship programs, advocating for increased research funding, and promoting science communication to bridge the gap between chemists and the public. The day concluded with the Young Chemists Evening (YCE), strategically held alongside the AGM to enhance member engagement.

Report by
Ts. ChM Dr. Damien Khoo Yiyuan, *Bruker Nano Inc.*
Assoc. Prof. ChM Dr. Fatimah Salim, *Universiti Teknologi MARA*

Organised by

IUPAC
INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

INSTITUT KIMIA MALAYSIA

AKADEMI SAINS MALAYSIA

Supported by

Malaysia Convention & Exhibition Bureau

Meet in Malaysia
BE Greater, Together.

Malaysia Truly Asia

IUPAC2025

53rd IUPAC General Assembly (53GA)
12th - 16th July 2025

50th World Chemistry Congress (50WCC)
14th - 19th July 2025

Venue: **Kuala Lumpur Convention Centre, Malaysia**

Website: **iupac2025.org**

Incorporating LabAsia2025

https://www.lab-asia.com/

HRDCORP CLAIMABLE • HRDCORP CLAIMABLE • HRDCORP CLAIMABLE • HRDCORP CLAIMABLE

2025 IUPAC

Kuala Lumpur, Malaysia

Chemistry for Sustainable Future

Meet Our Plenary Speakers

Prof Chi-Huey Wong
Scripps Research Institute, USA
Green Chemistry toward Low-sugar Universal Vaccines and Glycoengineered Antibodies

Prof Christine K Luscombe
Okinawa Institute of Science and Technology, Japan
Advancing the Frontiers of Semiconducting Polymers Through Precision Synthesis

Prof David Alan Winkler
La Trobe University, Australia
The Exciting Potential of AI for Drug and Therapeutic Discovery

Prof Eiichi Nakamura
University of Tokyo, Japan
Cinematic Chemistry: The Journey of Electron Microscopy from Organic Synthesis to Molecular Statistics

Prof Gregory Scholes
Princeton University, USA
From Coherence in Photosynthesis to Chemical Quantum Information Science

Prof Jackie Yi-Ru Ying
King Faisal Specialist Hospital & Research Centre, Saudi Arabia
Design and Synthesis of Nanomaterials for Biomedical and Energy Applications

Prof Lisa Hall
Department of Chemical Engineering & Biotechnology, University of Cambridge, UK
Biosensors Without Frontiers: Nucleic Acid Testing in Low Resource Areas

Prof Peter Mahaffy
King's University, Canada
Realising Chemistry's Pivotal Role in our Sustainable Future

Prof Tamotsu Takahashi
Hokkaido University, Japan
Continuous Movement of Carbon Atoms in Organic Molecules: Merry-Go-Round Reaction

Prof Veronique Gouverneur
University of Oxford, UK
Rethinking Fluorine Chemistry with Global Challenges in Mind

Prof Zhang Tao
Chinese Academy of Sciences, China
Single-Atom Catalysis

Prof Zhaomin Hou
RIKEN Center for Sustainable Resource Science, Japan
Pushing Boundaries: Innovations in Organometallic Complexes and Catalysts for Advanced Chemical Transformations

PPB Trace Elemen

Rigaku
UltraCarry®

Analyze wide range of elements

- ^{5}B to ^{92}U (High Power WDXRF)
- ^{11}Na to ^{92}U (EDXRF)

Simple 3-Step Process

Step 1

- Pipette

Step 2

- Dry

Step 3

- Analyze

NEX CG

Supermini200

ts Water Analysis

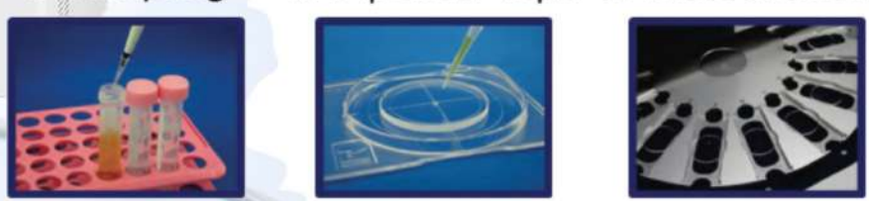
Rigaku

NANOHUNTER II

Benchtop TXRF for Ultra-trace element analysis

- **Ppb level of detection**
- **Easy non-technical operation required.**

1: Sampling 2: Pipetted 10µL 3: Measurement



Sample preparation for TXRF

GBC
SCIENTIFIC EQUIPMENT

AAS / ICP-OES /ICP-oTOFMS

PPB level of analysis made easy with GBC Spectrometer

RGS Corporation Sdn. Bhd.
(Company No: 864802-V)
WWW.RGSCNET.COM info@rgscnet.com

EMPOWER YOUR SPECTROSCOPY WITH AGILENT FEATURED PRODUCTS

The Agilent Spectroscopy Supplies Portfolio encompasses a wide range of high-quality consumables and accessories designed to optimize the performance and reliability of Agilent spectroscopy instruments. Agilent spectroscopy product range includes:

- Atomic Absorption supplies
- ICP-OES supplies
- ICP-MS supplies
- MP-AES supplies
- Molecular supplies

Inert ICP-OES spray chamber

Easy-fit x-lens

V-groove nebulizer

Easy-fit fully demountable inert torch

Hollow cathode lamps

ICP-MS interface cones

Waste Containers

Alumina Injectors

Nickel-Plated Cones

Easy-Fit Tubing

Sample Tubes and Racks

Single and Multiple Standards

ORBITING SCIENTIFIC & TECHNOLOGY SDN BHD
SCIENTISTS SERVING SCIENTISTS

Agilent | Authorized Distributor

WhatsApp

LinkedIn

www.orbitingscientific.com enquiry@orbitingscientific.com 012 2486581

High Throughput Sample Extraction & Concentration Solutions

AUWII

AZO

DETERMINATION OF PROHIBITED AZO DYES IN TEXTILES

Comprehensive Process Flow: The system covers the entire sample processing process, including:

- Aromatic Amine Separation
- Eluent Concentration
- Constant Volume Adjustment
- Sample Extraction
- Extraction Solution Concentration

FEATURES

- **High Throughput & Space Efficiency:** Processes up to 25 samples simultaneously, saving space and boosting efficiency.
- **Streamlined Workflow:** Automated extraction and evaporation systems reduce manual intervention, increasing throughput.
- **ISO 14362-1:2017 Compliance:** Meets the required standards for sample processing.
- **Integrated System:** Combines the AZO 25 automatic extraction system and APE25T vacuum evaporator for efficient operation.
- **User-Friendly:** Special extractor loads samples without suspension.
- **Automatic Lifting:** Automatically lowers for heating and extraction, then lifts for cooling.
- **Safety Features:** Stops heating and rises to prevent xylene vapor overflow if flow or temperature abnormalities occur.
- **No Sample Transfer:** Extraction, concentration, and reduction are performed in the same container.

ORBITING SCIENTIFIC & TECHNOLOGY SDN BHD
SCIENTISTS SERVING SCIENTISTS

AUWII

WhatsApp

LinkedIn

www.orbitingscientific.com enquiry@orbitingscientific.com 012 2486581

IKM Northern Branch Committee 2025-2026

Chairman	Dato' GM(H) ChM Dr. Hj. Mas Rosemal Hakim bin Mas Haris
Vice Chairman	ChM Haji Khairuzzaman bin Mustafa
Hon. Secretary	ChM Dr. Mohamad Shazeli bin Che Zain
Hon. Treasurer	ChM Lee Zheng Nam
Hon. Assistant Secretary	ChM Marina binti Mokhtar
Hon. Assistant Treasurer	ChM Dr. Lee Hooi Ling
Committee Members	ChM Dr. Nor Aziyah binti Bakhari
	ChM Dr. Melati binti Khairuddean
	ChM Dr. Mohd Ridhwan bin Adam
	ChM Dr. Thiruventhan a/l Karunakaran
	ChM Nur Farhana binti Md. Yusoff
Co-opted Members	ChM Dr. Siti Nor Fazila binti Ramly
	ChM Dr. Ng Si Ling
	ChM Prof. Dr. Kathiresan a/l Sathasivam
	ChM Airul Azmel bin Ismail
	ChM Muhammad Humaidi bin Mansor
	ChM Siti Aishah binti Che Ani
	ChM Dr. Mohd Akhir bin Ahmad
Internal Auditors	ChM Dr. Lee Chai Guan & ChM Dr. Goh Teik Beng

Food Analysis Solutions to Streamline Your Lab

Quickly and easily analyze your most challenging food samples with our newest total protein and moisture determination solutions, which offer industry-leading analysis times and automation features to increase your lab's productivity.

TGM800
Thermogravimetric
Moisture

FP828
Nitrogen/Protein

Moisture Determination

- Automated loss-on-drying moisture analysis of up to 16 samples
- Precise oven temperature ramping and set point control up to 150° C
- Sample mass measurement throughout the analysis cycle using an integrated balance with 0.0001 g resolution

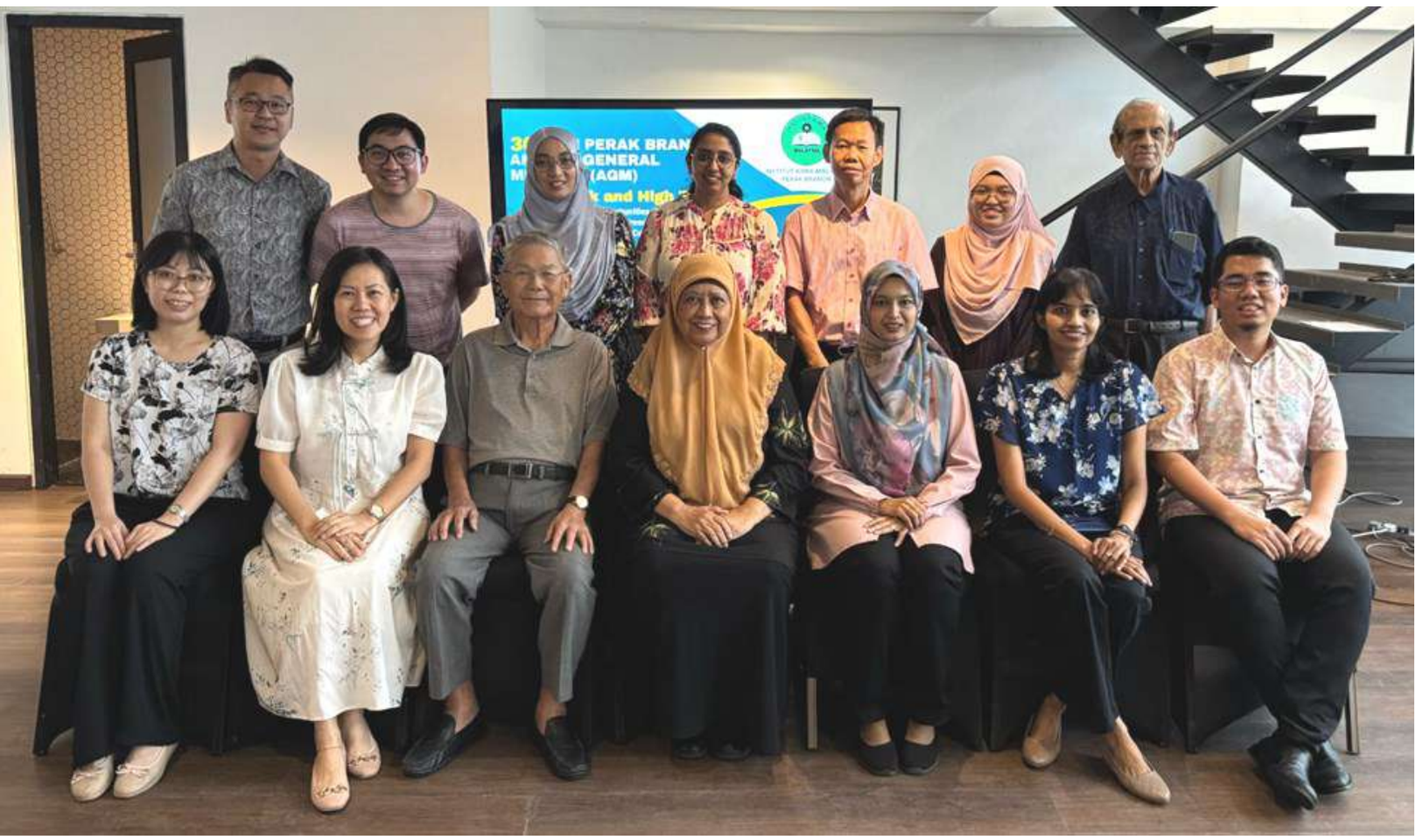
Total Protein

- Rapid cycle time of 2.8 minutes with macro sample mass capabilities
- A reduction reagent tube lifetime of 4,000 samples extends instrument uptime
- Performance model offers an extended lower nitrogen range and the flexibility of a dual loop aliquot doser (10 cm^3 and 3 cm^3)

For more information, kindly contact:
LECO Instruments (Malaysia) Sdn. Bhd
No. 2, Lorong Tandang B
Section 51, 46050, Petaling Jaya, Selangor
Tel: 603-7770 2100
Email: leco@leco.com.my | www.leco.com

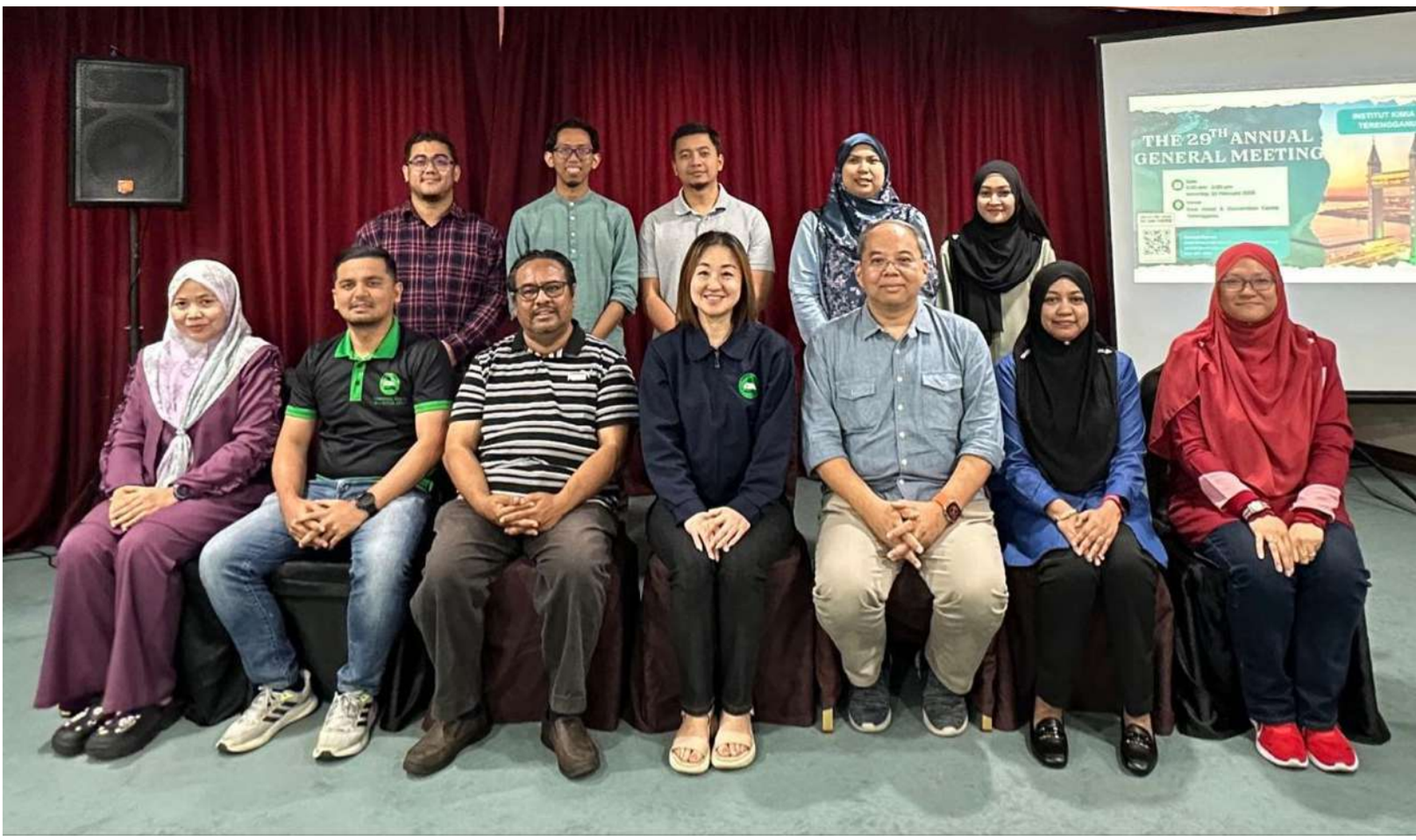
LECO
EMPOWERING RESULTS

IKM Perak Branch Committee 2025-2026



Lifetime Advisor	:	ChM Mr Hwang Chin Hor
Chairperson	:	Assoc Prof ChM Dr Wong Lai Peng
Vice Chairperson	:	ChM Dr Mazlin Binti Mohideen
Hon. Secretary	:	ChM Ms Chon Huey Chian
Hon. Treasurer	:	ChM Dr Sharon a/p Fatinathan
Hon. Assistant Secretary	:	ChM Dr Muhammad Nur' Hafiz Bin Rozaini
Hon. Assistant Treasurer	:	ChM Dr Khor Poh Yen
Committee members:		ChM Dr Komathy a/p Veerasinghan
		ChM Mr Ng Choon Heng
		ChM Dr Tan Kok Weng
		ChM Ms Jamilahtul Hayati Binti Ahmad Nadzeri
		ChM Mr Tai Wen Xi
Internal Auditors:		ChM Ms Noor Ashikin Idayu binti Md Asri
		ChM Mr Amar Singh s/o Banta Singh

IKM Terengganu Branch Committee 2025-2026



Chairman:	ChM Teo Chook Kiong
Vice Chairman:	Assoc. Prof. ChM Dr. Mohd Aidil Adhha Abdullah
Hon. Secretary:	ChM Nurzuhrah binti Hassan
Hon. Treasurer:	ChM Mohd Shafizi Ab Aziz
Hon. Assistant Secretary:	ChM Dr. Salmiah Jamal Mat Rosid
Hon. Assistant Treasurer:	ChM Shamsilawati Mustafar
Committee Members:	ChM Wan Nur Amalina Wan Mamat
	ChM M A Rauf A Wahid
	ChM Nabil Asyraf M Rosli
	ChM Kamalia Assira Bt Zakaria
	ChM Mohd Faizuddin B Abu Hasan
Co-opted Member:	ChM Mohd Fajariatudin Mustaffa
	ChM Nordiana binti Salleh
	ChM Wan Rohaslima binti Wan Abdullah
	ChM Noor Dina Ali
	Ts ChM Al-Malek Fahd bin Abdul Hamid
Internal Auditors:	ChM Dr. Mazidah bt Mamat & ChM Dr. Azlin Shafrina Hasim

IKM Pahang Branch Committee 2025-2026

Chairman : Prof ChM Dr Chong Kwok Feng

Vice Chairman : ChM Zarida binti Zahari

Honorary Secretary : Asst. Prof. ChM Ts Dr Saiful 'Arifin bin Shafiee

Honorary Treasurer : ChM Ng Boon Hong

Hon. Assistant Secretary : ChM Dr Faridah binti Mohd Marsin

Hon. Assistant Treasurer : ChM Dr Noor Saadiah Mohd Ali

Committee Members : Assoc. Prof. ChM Dr Awis Sukarni bin Mohmad Sabere

: Assoc. Prof. ChM Dr. Fiona How Ni Foong

: ChM Aznor bin Yahya

: ChM Fera Shima binti Abdul Aziz

: ChM Syed Syazwan Sadly bin Syed Salleh

Co-opted members : ChM Halime bin Azhari @ Adnan

: ChM Mardhiah binti Ismail

: ChM Wan Ahmad Ashadi bin Wan Mohd Kamil

: Ts ChM Dr Yuen Mei Lian

Internal Auditors : ChM Aw Wai Boon & ChM Maryam Aisyah binti Abdullah

IKM Southern Branch Committee 2025-2026

Advisors : ChM Qua Sai Chuan & ChM Haji Khairul Hadi bin Haji Abd Raof

Chairman : ChM Rachel Yap Fei Ching

Vice Chairman : ChM Dr. Sheela Chandren

Honorary Secretary : ChM Poo Sher Lin

Honorary Treasurer : ChM Dr. Cassy Chong Mun Hwa

Hon. Assistant Secretary : ChM Dr. Mohd Akmali Bin Mokhter

Hon. Assistant Treasurer : ChM Dr. Mohamad Shazwan Shah Jamil

Committee Members : ChM Amelia Cheng Guay Neo

: Assoc. Prof. ChM Dr. See Hong Heng

: ChM Soh Ee Shan

: ChM Muhammad 'Azim Bin Jamaluddin

: ChM Siti Zubaidah Bt. Hanapi

Co-opted members : Assoc. Prof. ChM Dr. Mohd Bakri Bakar

: ChM Mohamad Fiteri Azhar bin A. Rahim

: ChM Tan Tai Ann

Internal Auditors ChM Chong Kuek Phin & ChM Chin Lee Ping

IKM Sabah & FT Labuan Branch Committee 2025-2026

Chairman	ChM Dr Jenny Lee Nyuk Len
Vice Chairman	ChM Dr Morius bin Bantas
Honorary Secretary	ChM Debbie Annabell Peter
Honorary Treasurer	ChM Robinetta Joyce Malangkig
Hon. Assistant Secretary	ChM Suzanna J. Rice Oxley
Hon. Assistant Treasurer	ChM Siti Fatimah Dek
Committee Members	ChM Dr Stella Ho Yen Ling
	Assoc. Prof ChM Dr Moh Pak Yan
	Assoc. Prof Ts ChM Dr Mohd Sani Sarjadi
	ChM Mohamad Khir Syafiq bin Moktar
	ChM Tay Kian Fui
Internal Auditors	ChM Doreen Benjamin & ChM Emillia Kimlon

IKM Sarawak Branch Committee 2025-2026

Advisor	:	ChM Dr. John Chan Sung Tong
Chairman	:	Prof. ChM Dr. Sim Siong Fong
Vice Chairman	:	Prof. ChM Dr. Zainab binti Ngaini
Hon. Secretary	:	ChM Hazalinawati binti Zailani
Hon. Treasurer	:	ChM Dr. Cindy Tan Soo Yun
Hon. Assistant Secretary	:	ChM Aishah binti Abdul Aziz
Hon. Assistant Treasurer	:	ChM Ling Sheau Jing
Committee Members	:	ChM Eswaran A/L Madiahlagan
		ChM Michelle Crystal Henry
		Assoc. Prof. ChM Dr. Tay Meng Guan
		ChM Nigel Lim Poon Teck
		ChM Dr. Lau Seng
Co-opted Members	:	ChM Jocephine anak Jonip
		ChM Dr. Margaret Abat
		ChM Chai Tchan Wei
		ChM Fakhrul Iman bin Mohammad
Internal Auditors	:	ChM Jong Poh Chan & ChM Biling Peter Raig
Chairs of Sub-Committee	:	Sibu - ChM Mozzarie Shahrayzam bin Masidi
		Bintulu - ChM Rohana bte Anis
		Miri - ChM Helda Puyang Jau

LSS
Lab Science Solution

Celebrating 20 YEARS of serving science

2005 - 2025

analytikjena
An Endress+Hauser Company

The multi EA 5100 with ABD and flame sensor technology provides a fast, safe and reliable solution for the analysis of Cl traces in palm oil, petrochemical, and related matrices.

NEW

BINDER
Best conditions for your success

BINDER KBF & KBF PRO Series

It's bigger, it's better! Now 1600L is available!

Skalar

San++ Continuous Flow Analyzer

Wet chemistry automation by segmented flow analysis for water, soil, food, etc. Flexible systems for reliable 24/7 analysis of numerous complex parameters.

PROMOCHROM TECHNOLOGIES

Automated SPE Systems

- For food, environmental, biological and fuel samples.
- Fully automated system.
- Compact and efficient extractor.
- Also capable of handling tough matrices.

RESTEK
Pure Chromatography

Faster GC-MS Analysis of 3-MCPD and Glycidyl Esters in Edible Oils

A less time-consuming method for the analysis of 3-MCPD and glycidyl esters is available!

Find out more from us!

Various 3-MCPD Standard & Glycidyl Stearate Standard are also available!

TOSOH BIOSCIENCE
TOSOH

HLC-8420GPC Chromatography System

The "HLC-8420GPC" is an integrated high-speed GPC system equipped with all the functions required for accurate molecular weight distribution measurement.

LSS
Lab Science Solution

is an ISO / IEC 17025 Accredited Service Calibration Services for every brand of UV-Visible spectrophotometers.

CONTACT US AT : 27, Jalan Anggerik Aranda C31/C, Kota Kemuning, 40460 Shah Alam, Selangor D.E.
Tel : + 603 5124 8299 ; Email: customer_care@labsciencesolution.com

analytikjena · BINDER · BERGHOF · Hellma Analytics · KNAUER · interscience · LabTech · NEXOPART · RESTEK · Miele · RUDOLPH RESEARCH ANALYTICAL · PROMOCHROM TECHNOLOGIES · psl rheotek · Skalar · SYMPATEC · SPECTRA ANALYSIS · stakpure · SNOL · Thomas Edison · TOSOH · VICI DBS · VILBER

Arachem
SINCE 1990
35TH ANNIVERSARY
Service Our Passion. Technology Our Trademark.

Explore the World of Titration

Our titrators

TitroLine® 5000, 7000, 7750, 7500 KF, 7500 KF trace, 7800 and the TITRONIC® 300 and 500 piston burettes with innovative features for simple and easy operation.

TITRONIC® 500
TitroLine® 7000 / 7750 / 7800

TitroLine® 5000
TITRONIC®300

TitroLine® 7500 KF
TitroLine® 7500 KF trace

Advantages of TitroLine® / TITRONIC®

- High visibility, full color display that can be easily viewed from a distance and at extreme angles.
- Reagent data is securely stored in the intelligent and interchangeable modules (not: TITRONIC 300 and TitroLine 5000).
- Automatic wireless recognition of SI Analytics ID electrodes and IDS interface (TitroLine 7800) guarantee accurate calibration and measurements.
- Includes up to three USB, one LAN and two RS232 ports for expansion and connection of devices such as USB storage of methods and data, stirrer, laboratory balance, PC and more peripheral devices.
- Export the results as PDF or CSV, also networks.
- Transfer of methods via USB device.

Bandar Sri Damansara www.arachem.com.my marketing@arachem.com.my

LabAsia®

9th Edition of Malaysia International Scientific Instruments and Laboratory Equipment Exhibition and Conference

14-16 JULY 2025 | **KUALA LUMPUR CONVENTION CENTRE (KLCC), MALAYSIA**

Southeast Asia's Leading Laboratory Exhibition

Scan Here To Book a Space

For exhibiting and sponsorship enquiries, please contact:

Ms. Geonice Chong
E: geonice.chong@informa.com

Ms. Idayu Zakaria
E: idayu.zakaria@informa.com

Visitor & Media Partnership

Mr. James Yap
E: boonwye.yap@informa.com

Organised by:

informa markets

INSTITUT KIMIA MALAYSIA

This event is powered by Renewable Electricity

LabAsia
LabAsia Exhibitions
labasia_official
www.lab-asia.com

Anton Paar APAC Technical Center in Malaysia

Expanding Regional Access to Advanced Measurement Solutions

370 m² showroom where industry professionals and researchers can experience Anton Paar's instruments
Anton Paar, a global leader in high-precision measurement technology, is expanding regional access to advanced measurement solutions with its APAC Technical Center in Malaysia. The Center highlights Anton Paar's dedication to advancing scientific and industrial innovation, as well as investment in R&D, in the Asia-Pacific region, through direct access to state-of-the-art measurement instruments and expert application support. The APAC Technical Center is designed as an interactive platform where industry professionals and researchers can experience Anton Paar's instruments in a 370 m² showroom.

For over 100 years, Anton Paar has combined high-precision technology with scientific curiosity and a thirst for research. Today, it is the global market leader in the fields of density and concentration measurement, rheometry, and CO_2 measurement. Anton Paar has subsidiaries around the world and operates in more than 110 countries – including Malaysia.

LEMBAGA GETAH MALAYSIA
MALAYSIAN RUBBER BOARD

100 TAHUN
SEABAD PENYELIDIKAN GETAH

ACHIEVING EXCELLENCE
WITH MRB TECHNICAL SERVICES

The Malaysian Rubber Board (MRB) provides a wide range of technical services to support the rubber industry across upstream, midstream, and downstream sectors. These services enhance industry capabilities by ensuring compliance with standards/regulations and promoting sustainability.

PROFICIENCY TESTING

ABOUT US (MYPTP 002)

Malaysian Rubber Board Proficiency Testing Provider (MRB PTP) has been granted an accreditation of MS ISO/ IEC 17043 by Department of Standard Malaysia since May 2020

WHAT WE OFFER?

We provide various PT schemes for rubber and rubber products namely for;

- **SMR Testing**
- **TSR Testing**
- **Latex Testing**
- **Tensile Test for Glove**
- **Ad-Hoc Crosscheck**

HOW IT WORKS?

1) Laboratories receive sample materials
2) Results are evaluated against established criteria
3) MRB PT Provider offers feedback and PT Report for continuous improvement

WHY NEED TO JOIN US?

1) Evaluate laboratory competence
2) Identifies potential issues in testing processes
3) Improves confidence in laboratory results

Contact:
Nur Salwanie Mohamed Resali
salwanie@lgm.gov.my

RUBBER REFERENCE MATERIALS

Rubber reference materials (RMs) are meticulously developed to uphold the accuracy of test methods and ensure precise equipment calibration. Produced in accordance with ISO 17034 standard, these materials offer exceptional stability, consistent composition, and reliable property values with well-defined uncertainties.

With the use of MRB's RRIM Pack™ technology, the materials are securely packaged, improving quality and extending their shelf life.

BENEFITS

- The composition that closely resembles routine samples for raw rubber users
- Enhanced product control with exceptional stability and homogeneity
- Guaranteed product quality with an extended shelf life

V_R standard sample

TYPES OF REFERENCE MATERIALS

Standard Sample	Plasticity Retention Index (PRI)	**Control Sample**	Nitrogen
	Mooney Viscosity (V_R)		Ash
	Two Roll Mill		Volatile Matter

Contact:
Nur Shuhada Azman
nurshuhada@lgm.gov.my

STANDARD MALAYSIAN RUBBER (SMR) CONTROL LABORATORY

01

SMR Control Laboratory (SCL) has been appointed by the International Rubber Association (IRA) as the reference laboratory for:

i. SMR/TSR testing
ii. Arbitration cases in the rubber trade

02

SCL is accredited to MS ISO/IEC 17025:2017.

03

SCL also provides training related to SMR/TSR testing.

04

The accreditation scope of SCL cover three standard methods:

i. RRIM Test Method - SMR Bulletin No.7:2018
ii. ISO test methods
iii. ASTM test methods

05

Testing services offered by SCL:

i. Dirt
ii. Ash
iii. Nitrogen
iv. Volatile Matter
v. Mooney Viscosity
vi. Colour (Lovibond)
vii. Plasticity and Plasticity Retention Index (PRI)
viii. Wallace Accelerated Storage Hardening Test (WASHT)
ix. Mooney Accelerated Storage Hardening Test (MASHT)
x. Rheometric Cure (Oscillating Disc)
xi. Melting Temperature (Plastics)

Contact:
Muhammad Zuhid Yunus
m.zuhid@lgm.gov.my

ThermoFisher
SCIENTIFIC

Ignite your research

Thermo Scientific iCAP MTX triple quadrupole ICP-MS

Scan to Learn more

The Thermo Scientific™ iCAP™ MTX ICP-MS will ignite your research, transforming complex analysis for the ultimate ICP-MS experience. Achieve accurate elemental characterization with interference-free and right first-time results, with minimal instrument downtime, even with the most challenging samples. The iCAP MTX ICP-MS balances powerful detection capabilities and matrix robustness, simplifying analysis and unlocking your analytical potential.

its®
INTERSCIENCE

thermo scientific
Authorized Distributor

Learn more at **thermofisher.com/icp-ms**

Thermo Fisher Scientific Introduces Mass Spectrometers to Simplify Trace Elemental Analysis and Enhance Productivity

Thermo Fisher Scientific Inc. launched the Thermo Scientific™ iCAP™ MX Series ICP-MS to simplify trace element analysis with inductively coupled plasma mass spectrometry (ICP-MS).

The launch includes a new single quadrupole Thermo Scientific iCAP MSX ICP-MS and triple quadrupole Thermo Scientific iCAP MTX ICP-MS designed for environmental, food, industrial and research labs to analyze routine and challenging trace elements to detect and mitigate harmful substances.

Laboratories that face challenges in analyzing trace elements in complex and diverse matrix samples require sensitive and flexible instruments to deliver consistent results that support analytical research and quality testing. The single quadrupole iCAP MSX ICP-MS delivers a high level of analytical performance without the usual compromise between matrix load and sensitivity, enabling users in applied analytical labs to consistently analyze various elemental samples. Building on this performance, the triple quadrupole iCAP MTX ICP-MS offers interference-free analysis for heightened confidence when analyzing more complex samples.

From environmental testing to food safety, the MSX ICP-MS analyzes a range of samples to meet regulatory and turnaround requirements.

Environmental testing labs gain the ability to detect contaminants like lead or mercury to prevent harmful human exposure in drinking water or other environmental samples.

Food safety labs achieve fast and accurate analysis of toxic and nutritional elements to ensure food products are safe for consumption and that food labeling requirements are met throughout production.

Additionally, labs supporting the high-tech industry can use either instrument in the iCAP MX Series ICP-MS to support production sites and accelerate research discoveries.

Thermo Scientific™ iCAP™ MSX ICP-MS

Thermo Scientific™ iCAP™ MTX ICP-MS

Thermo Fisher Scientific Innovation Achieves R&D 100 Awards, including Special Recognition Market Disruptor

At the R&D 100 Awards, the Thermo Scientific™ Orbitrap™ Astral™ Mass Spectrometer (MS) won gold in the Market Disruptor special recognition category as one of the most significant advancements in mass spectrometry in 15 years.

This first-of-its-kind instrument, also recognized in the Analytical/Test Category for the R&D 100 Awards, combines fast throughput, high sensitivity, and deep proteome coverage, enabling researchers to uncover proteins that previously evaded detection and make breakthrough discoveries more efficiently than ever.

The Orbitrap Astral MS delivers up to two times deeper proteome coverage and four times the throughput of current mass spectrometers. Further demonstrating the instrument's impact, over 40 peer-reviewed and preprint publications have been published on the Orbitrap Astral MS since its launch in 2023. The instrument is accelerating precision medicine by helping researchers reveal disease signatures earlier and develop new interventions for everything from cardiovascular disease to cancer.

Thermo Scientific™ Orbitrap™ Astral™ Mass Spectrometer (MS)

ThermoFisher SCIENTIFIC

Knowledge Exchange

Thermo Fisher Scientific invites scientists, researchers, chemists, and other laboratory professionals in Malaysia to connect, learn and exchange knowledge with experts worldwide in our virtual learning sessions on topics within the field of liquid chromatography (LC).

Live Webinar: Mastering LC Method Development: Essential Tips for Increased Productivity

Modern pharmaceutical business drivers are continually pushing companies to reduce the time it takes to get a product or service to market, reduce risk and cost, and improve product quality. Throughout the drug development process, analytical methods are developed at various stages, and typically the samples vary in complexity throughout those stages. Due to the inherent nature of this process, redundant efforts may take place across an organization, resulting in a very costly and time-consuming process.

If we can streamline the process of developing methods, products can conceivably be brought to market faster. Additionally, if we develop chromatographic methods that are both faster and information-rich, it will be more cost-effective and, in turn, improve the bottom line.

In this presentation, you will discover tips and tricks for HPLC method development. Learn how automated scouting of columns and solvents, method development software, and more can be used to develop methods for your HPLC analyses efficiently.

Register for the webinar at https://bit.ly/4hxFzGl

On-demand webinar: LC Columns Tips & Tricks

To Malaysia's laboratory professionals, are you tired of dealing with inconsistent LC results? Are you looking to extend the life of your LC columns and improve lab efficiency? This webinar, LC Columns Tips & Tricks, is designed to help you get the most out of your LC columns.

Our expert will share invaluable insights on:

- Understanding LC column chemistry to optimize separations
- Proper handling of new LC columns for maximum lifespan
- Proven techniques to extend column life and reduce downtime
- Effective column maintenance and troubleshooting strategies

This webinar is an excellent opportunity to deepen your knowledge, improve your lab efficiency, and reduce operational costs. Whether you're a seasoned pro or just getting started, you'll walk away with practical knowledge to elevate your column performance and lifetime.

Register for the webinar at https://bit.ly/4aUTSCe

Application Spotlight

We put the spotlight on sustainability using the Thermo Scientific™ iCAP™ MTX ICP-MS in the analysis of photovoltaic samples.

Application Note: Analysis of photovoltaic grade silicon using triple quadrupole inductively coupled plasma mass spectrometry (ICP-MS)

This application note will demonstrate a robust and accurate analytical method for the determination of bulk and trace elements in photovoltaic samples using triple quadrupole ICP-MS.

Development of renewable and low-carbon energy sources has become critical in addressing global concerns related to carbon emissions and climate change. One key technology in achieving the reduction of CO_2 emissions while ensuring a stable and reliable energy supply is the use of photovoltaic (PV) technology. PV technology harnesses the natural energy from the sun and converts it into electrical power, emits zero CO_2, and enhances energy security. Additionally, PV solar cells are predominantly composed of silicon, an abundant resource on Earth, making the transition to PV energy a viable option as a primary source of electricity, aligning with the move towards climate-friendly energy resources.

However, it is important to acknowledge that PV also has certain drawbacks, including susceptibility to damage, dependence on sunlight, and associated costs. To address these concerns, it is crucial to focus on developing innovative solutions that result in durable products, increased energy efficiency, and degradation prevention.

Photovoltaic cells are typically composed of n-type and p-type solar materials. The n-type solar cell is doped with phosphorus, which introduces an additional electron compared to silicon, while the p-type solar cell is doped with boron, which has one less electron than silicon. The performance and production cost of PV cells are influenced by the characteristics of these two types of materials. Consequently, it is crucial to carefully determine the concentration of phosphorus (among other impurities) during the development of PV technology to optimize its efficiency and cost-effectiveness. Inductively coupled plasma mass spectrometry (ICP-MS) is a highly sensitive technique that can work with low sample volumes while enabling high sample throughput and robust analysis even in the most demanding sample types. However, the analysis of samples containing higher levels of silicon is a known challenge in ICP-MS. The high amount of silicon matrix can significantly affect the sensitivity of the instrument, cause intensity fluctuation of the internal standard (suppression and drift), and lead to increased system maintenance with unwanted downtime due to obstruction of the interface cones, torch, and injector, or the nebulizer. In addition, samples need to be digested or dissolved using hydrofluoric acid (HF), which can damage glassware such as the nebulizer, spray chamber, and injector unless HF-resistant materials are used.

Some elements may be more difficult to detect in a matrix containing elevated levels of silicon. Phosphorus, for example, is not only affected by abundant polyatomic interferences, but also from an isobaric interference caused by the matrix (^{31}Si interfering with the only natural isotope of phosphorus). Even powerful interference removal technology typically used with single quadrupole ICP-MS systems, such as kinetic energy discrimination (KED) mode, is not able to resolve the isobaric interference. However, reactive gases can be used for interference removal, enabling detection of phosphorus when using triple quadrupole ICP-MS technology.

This application note focuses on the development of a fast, robust, and accurate method for the analysis of bulk and trace elements in photovoltaic grade silicon using the Thermo Scientific™ iCAP™ MTX ICP-MS with argon gas dilution (AGD). Use of triple quadrupole technology offers superior interference removal and facilitates the analysis of phosphorus, including ultra-trace levels in the silicon matrix samples.

Thermo Scientific™ iCAP™ MTX ICP-MS

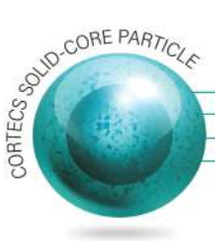
Download the full application note at:

Solid-Core Columns You Can Trust

CORTECS™ COLUMNS

MAXPEAK PREMIER

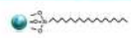
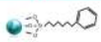
1.6 µm, 2.7 µm, and 5 µm Particle Sizes for Seamless Scalability and Simple Method Transfer



- 25% Higher Efficiency*
- Increased Throughput
- 40% Lower Backpressure*
- Fully Scalable

*Compared to fully-porous particles

Select CORTECS™ Chemistries are available in the MaxPeak Premier Column format.

	C_{18}+	C_{18}	T3	C_8	Phenyl	Shield RP18	HILIC
Ligand							
Description	General purpose, high-efficiency column with a positively charged surface modification.	Traditional C_{18} bonded phase for balanced retention.	Balanced retention for both polar and non-polar molecules under reversed-phase conditions.	Excellent choice for separating hydrophobic analytes that are very well retained on a C_{18} column.	Excellent method development column with unique selectivity for highly aromatic compounds.	Excellent method development column with an embedded polar functional group for alternative selectivity.	Hydrophilic-interaction chromatography can be used to improve retention of extremely polar analytes.
Benefits	• Unique column selectivity provides exceptional peak shape and loading capacity for basic compounds at low pH. • Improved signal-to-noise performance in LC and LC-MS applications.	• Superb resolution and retention for complex mixtures. • Balanced retention of acids, bases and neutrals at low- and mid-range pH.	• Larger 120Å pore diameter and lower C_{18} ligand density for increased polar analyte retention. • Compatible with 100% aqueous mobile phases.	• Less hydrophobic than traditional C_{18} columns. • Highly reproducible ligand bonding.	• Phenyl ring provides pi-pi bond interactions that can be enhanced by using methanol instead of acetonitrile as the organic modifier.	• Unique selectivity for phenolic compounds. • Aqueous shield over acidic silanol groups on the particle surface inhibits secondary interactions with basic analytes for better peak shape.	• Mobile phases with high concentration of organic solvent enable effective desolvation of analytes in the MS source for improved MS response and sensitivity.

	C_{18}+	C_{18}	T3	C_8	Phenyl	Shield RP18	HILIC
Ligand Density*	2.4 µmol/m²	2.7 µmol/m²	1.6 µmol/m²	3.4 µmol/m²	3.2 µmol/m²	3.2 µmol/m²	N/A
Carbon Load*	5.7 %	6.6 %	4.7 %	4.5 %	5.9 %	6.4 %	Unbonded
Endcapped	Yes	Yes	Yes	Yes	Yes	Yes	N/A
USP Class No.	L1	L1	L1	L7	L11	L1	L3
pH Range	2–8	2–8	2–8	2–8	2–8	2–8	1–5
Temperature Limits	60 °C	60 °C	60 °C	60 °C	60 °C	60 °C	60 °C
Surface Area*	100 m²/g	100 m²/g	100 m²/g	100 m²/g	100 m²/g	100 m²/g	100 m²/g
Pore Size	90 Å	90 Å	120 Å	90 Å	90 Å	90 Å	90 Å

*Expected or approximate value

Available CORTECS Premier Columns and VanGuard™ FIT Columns

MaxPeak™ Premier Columns Provide:
- Reduced column conditioning and passivation times
- Improved sensitivity and peak shapes for metal sensitive analytes
- Simpler mobile phases without complex additives
- Reduced risk and greater confidence in data and decision making
- Available VanGuard FIT Integrated Guard Column

Ligands:	Particle Sizes and Column Dimensions:		
C_{18}+ C_{18} T3	1.6 µm • 2.1 mm 50 mm 100 mm 150 mm	2.7 µm • 2.1 mm • 4.6 mm 50 mm 100 mm 150 mm	5 µm • 2.1 mm • 4.6 mm 50 mm 100 mm 150 mm 250 mm (4.6 mm only)

Available Standard CORTECS Columns

Ligands:		Particle Sizes and Column Dimensions:	
C_{18}+ C_{18} T3	C_8 Phenyl Shield RP18 HILIC	1.6 µm • 2.1 mm • 3.0 mm 30 mm 50 mm 75 mm 100 mm 150 mm	2.7 µm • 2.1 mm • 3.0 mm • 4.6 mm 30 mm 50 mm 75 mm 100 mm 150 mm

Visit waters.com/cortecs for more information

Waters™

IKM NEW MEMBERS & MEMBERSHIP UPGRADING

New Members (MMIC)	Mohammad Sayuti Bin Taib, ChM *M/6922/11138/25*	Nur Khairunnisa Binti Nazri, ChM *M/6858/11008/25*
Abdul Muhaimin Bin Abd. Rabbi, ChM *M/6916/11132/25*	Mohd Jamil Bin Anong Adini, ChM *M/6933/11160/25*	Nur Liyana Binti Ali, ChM *M/6918/11134/25*
Afiq Aiman Bin Hamdan, ChM *M/6885/11048/25*	Muhamad Salleh Bin Johar, ChM *M/6898/11090/25*	Nur Syafika Amani Binti Abd Mutalib, ChM *M/6845/10982/25*
Ainaa Syakirin Binti Khalid, ChM *M/6894/11080/25*	Muhammad 'Amir Bin Yahaya, ChM *M/6881/11039/25*	Nuranessa Binti Madahal, ChM *M/6893/11079/25*
Akhmal Hafiz Bin Zambri, ChM *M/6882/11040/25*	Muhammad Amirul Bin Rosli, ChM *M/6924/11142/25*	Nurfatin Farhanah binti Misni, ChM *M/6880/11037/25*
Almila Binti Hassan, ChM *M/6862/11020/25*	Muhammad Amirulnazmi Bin Zainul Abidin, ChM *M/6883/11045/25*	Nurhamizah Binti Rahmat, ChM *M/6890/11063/25*
Badrul Syafiq Bin Abdul Hakim, ChM *M/6849/10990/25*	Muhammad Hafizuddin bin Abdul Rahman, ChM *M/6833/10958/25*	Nurhazwani Binti Rozadin, ChM *M/6927/11146/25*
Cheong Kok Whye, ChM Dr. *M/6879/11031/25*	Muhammad Khawarizmi Bin Mat Anis, ChM *M/6938/11173/25*	Nuriffa Filzah binti Mohamad Zulkipli, ChM *M/6906/11110/25*
Chong Siew Mee, ChM *M/6853/10996/25*	Muhammad Najib Bin Razak, ChM *M/6861/11016/25*	Nurul Afina Binti Sumed, ChM *M/6937/11167/25*
Christyan Staynner Anak Panus William, ChM *M/6876/11028/25*	Muhammad Syadzwan Bin Fuad Hilmi, ChM *M/6834/10959/25*	Nurul Aidayu Binti Mat Dasin, ChM *M/6909/11118/25*
Dayangku Nur Hidayah Binti Pg Yusop, ChM *M/6892/11075/25*	Najwa Alia Binti Noor Azmawi, ChM *M/6841/10970/25*	Nurul Ashikin Binti Abdul Hadi, ChM *M/6850/10992/25*
Efrone Bin Andudur, ChM *M/6925/11144/25*	Naqiuddin Faiz Bin Roszaimi, ChM *M/6884/11047/25*	Nurul Asma Salsabila Binti Mohamad Alias, ChM *M/6901/11096/25*
Elfira Anne Anak Keming, ChM *M/6838/10966/25*	Noor Anis Amira Binti Mohd Lazim, ChM *M/6923/11139/25*	Nurul Hidayah Binti Abdullah, ChM *M/6840/10969/25*
Ellen Burystin Vallie A/P Chandran, ChM *M/6903/11100/25*	Noor Azlina Binti Awang, ChM *M/6913/11125/25*	Nurul Hidayah Binti Mohd Azmi, ChM *M/6920/11136/25*
Engku Nadhirah Binti Engku Mohammad Nazim, ChM *M/6911/11122/25*	Noor Fazreen Binti Dzulkafli, ChM Dr. *M/6897/11088/25*	Nurul Iryani Binti Jamalunshah, ChM *M/6831/10956/25*
Eva Lizwina Binti Matin, ChM *M/6843/10979/25*	Noor Hidayah Binti Pungot, ChM Dr. *M/6887/11056/25*	Nurul Khamsatul Akma Binti Kamal Ruzaman, ChM *M/6844/10981/25*
Faridah Binti Manaf, ChM *M/6904/11104/25*	Noor Zuhartini Binti Md Muslim, ChM Dr. *M/6854/10997/25*	Nurul Nathasha Binti Shahrom, ChM *M/6830/10955/25*
Halimatul Saadiah Binti Mohammad Noor, ChM Dr. *M/6934/11161/25*	Nor Natasha Binti Abas, ChM *M/6886/11053/25*	Nurul Shakirah Binti Othman, ChM *M/6902/11099/25*
Hamra Assyaima Binti Abdul Bashid, ChM Dr. *M/6873/11024/25*	Norfatirah Binti Muhamad Sarih, ChM Dr. *M/6829/10954/25*	Nurul Syahidah Binti Hussin, ChM *M/6907/11114/25*
Hassanain Hafiz Bin Mohd Asnan, ChM *M/6846/10983/25*	Norfazreen binti Saffee, ChM *M/6896/11087/25*	Nurul Syuhaida Binti Mohd Tahir, ChM *M/6929/11151/25*
Idayu Binti Razali, ChM *M/6852/10994/25*	Norliza binti Baharom, ChM Dr. *M/6877/11029/25*	Preeyashenny A/P A. Jagathison, ChM *M/6912/11123/25*
Iqbal Aiman Bin Norzahirul Anuar, ChM *M/6863/11021/25*	Normawati Binti Jasni, ChM *M/6932/11159/25*	Rafidah Binti Husain, ChM *M/6848/10985/25*
Jauhar Aisyah Binti Junaidi, ChM *M/6837/10965/25*	Nur Amira Amalia Binti Azman, ChM *M/6859/11011/25*	Remerio Peter Idon, ChM *M/6856/11003/25*
Khairuddin Bin Muhammad Radzi, ChM *M/6900/11095/25*	Nur Diyan binti Mohd Ridzuan, ChM *M/6835/10962/25*	Rozzeta Binti Dolah, ChM Dr. *M/6847/10984/25*
Khalidah binti Othman, ChM *M/6905/11108/25*	Nur Ezzah Binti Abdul Kahar, ChM *M/6836/10964/25*	Santhanadass A/L Thangapragasam, ChM *M/6875/11026/25*
Masni Amalia Binti Muhammad Haniff Lim, ChM *M/6888/11057/25*	Nur Fara Hana Binti Muhamad Ensalie, ChM *M/6926/11145/25*	Siti Hajar binti Ahmad Yusri, ChM *M/6899/11091/25*
Mitchell Chin Mei Foong, ChM *M/6839/10967/25*	Nur Farah Atikah Binti Harun, ChM *M/6910/11120/25*	Siti Mahirah Binti Rahizan, ChM *M/6919/11135/25*
Mohamad Amirul Ikhwan Bin Mohamad Zani, ChM *M/6878/11030/25*	Nur Fazlin Binti Rosli, ChM *M/6930/11155/25*	Siti Mariam Binti Abdul Wahab, ChM Dr. *M/6832/10957/25*
Mohamad Razlan Bin Abd Rahman, ChM Dr. *M/6908/11117/25*	Nur Hafizah Binti Abu Hanipah, ChM *M/6935/11163/25*	Siti Muhaini Binti Haris Fadzillah, ChM *M/6914/11127/25*

Siti Nazirah Binti Wahab, ChM *M/6936/11165/25*	Chen Mei Yin, ChM Dr. *L/3745/11006/25*	Muhammad Firdaus Bin Maligan, ChM *L/3813/11149/25*
Siti Norjannah Binti Sulaiman, ChM *M/6851/10993/25*	Cory Amanda Anak Langgie, ChM *L/3738/10989/25*	Muhammad Hafiz Helmi Bin Ismail, ChM *L/3806/11126/25*
Siti Nuraishah Binti Mohd Jamian, ChM *M/6931/11156/25*	Ezzatul Shaheera binti Shamsani, ChM *L/3755/11027/25*	Muhammad Haziq Bin Istamam, ChM *L/3779/11071/25*
Siti Sarah binti Usin, ChM *M/6895/11085/25*	Fathin Syahira Fahmi Binti Mohd Nor Azmi, ChM *L/3754/11023/25*	Muhammad Iqmal Afifi Bin Mohd Nasir, ChM *L/3815/11152/25*
Suziyana Binti Hassim, ChM Dr. *M/6891/11066/25*	Fatimah Marwa Binti Jaapar, ChM *L/3770/11058/25*	Muhammad Izzhaziq Bin Mohd Rajil, ChM *L/3726/10963/25*
Syamimi Asilah Binti Abdullah, ChM *M/6915/11128/25*	Gery Carson Anak Noden, ChM *L/3790/11093/25*	Muhammad Khairil Anuar Bin Mohd Nazri, ChM *L/3811/11141/25*
Tay Jiun Yun, ChM *M/6855/11000/25*	Gusti Nur Farwiza Binti Gusti Anuar, ChM *L/3792/11097/25*	Muhammad Naquiddin Bin Mustafa, ChM *L/3761/11042/25*
Tay Kui Moi, ChM *M/6921/11137/25*	Hanif Bin Mohd Teddy, ChM *L/3775/11067/25*	Muhammad Safwan Bin Abu Samat, ChM *L/3743/11002/25*
Tee Jia Chee, ChM *M/6874/11025/25*	Haslinda Binti Husin, ChM *L/3772/11060/25*	Muhammad Taqiuddin Bin Halin, ChM *L/3808/11130/25*
Tengku Ahmad Jafni Bin Tengku Anua, ChM *M/6857/11005/25*	Hong Xiu Ping, ChM *L/3795/11103/25*	Muhammad Zikry Hanaffi Bin Hesamuddin, ChM *L/3773/11062/25*
Tengku Nazri Bin Tengku Muda, ChM *M/6928/11147/25*	Iylia Najwa Binti Azman, ChM *L/3730/10974/25*	Naqib Bin Ahmad Qashashi, ChM *L/3734/10980/25*
Then Yoon Yee, ChM Dr. *M/6827/10951/25*	Jauhariatul Aida Binti Johar, ChM *L/3794/11102/25*	Ng Bao Tsin, ChM *L/3748/11010/25*
Vinothiniy A/P Alagan, ChM *M/6889/11061/25*	Koh Chia En, ChM *L/3768/11052/25*	Ng Khai Shin, ChM *L/3739/10991/25*
Wong Lai Chun, ChM Dr. *M/6828/10952/25*	Kok Lye Shyan, ChM *L/3783/11076/25*	Nik Muhamad Syazwan Bin Nik Rosli, ChM *L/3799/11112/25*
Wong Siew Fang, ChM Dr. *M/6842/10975/25*	Lau Ching Ching, ChM Dr. *L/3788/11084/25*	Noor Hafizah Binti Abd Wahab, ChM *L/3752/11018/25*
Wong Tsyr Min, ChM *M/6826/10949/25*	Lee Kah Ing, ChM *L/3809/11131/25*	Nor Atiqah Binti Samsudin, ChM *L/3803/11119/25*
Zatil Afifah Binti Omar, ChM *M/6860/11015/25*	Lee Xin Xian, ChM *L/3789/11089/25*	Nor Azlina Binti Mujir, ChM *L/3725/10961/25*
Zulkifli Bin Solle, ChM *M/6917/11133/25*	Liew Hui Ling, ChM *L/3800/11113/25*	Nor Azman Bin Kasan, Prof. ChM Dr. *L/3776/11068/25*
	Lim Suet Kim, ChM *L/3750/11014/25*	Nor Idayu Binti Razali, ChM *L/3781/11073/25*
New Members (LMIC)	Loh Yueh Feng, ChM Dr. *L/3814/11150/25*	Nor Syazwan Bin Nor Salim, ChM *L/3740/10998/25*
Ahmad Najmi bin Mustapha, ChM *L/3762/11043/25*	Lynn Shareena Binti Danial Iswan, ChM *L/3765/11049/25*	Noraidah Binti Haini, ChM Dr. *L/3827/11176/25*
Alan Chua Yee Quan, ChM *L/3784/11077/25*	Mariana Binti Naman, ChM *L/3796/11106/25*	Norhana binti Zakiuddin, ChM *L/3819/11164/25*
Alyaa Filza Binti Effendi, ChM *L/3742/11001/25*	Mohamad Alif Qayyun Bin Zawawi, ChM *L/3729/10973/25*	Norhanisah Binti Mohd Tambah, ChM *L/3817/11158/25*
Ang Ke Xin, ChM *L/3793/11101/25*	Mohd Faysal Bin Mohd Sedek, ChM *L/3804/11121/25*	Nur Adilah Binti Mat Shari, ChM *L/3757/11033/25*
Anida Anak Danding, ChM *L/3805/11124/25*	Monica Grace Robin, ChM *L/3758/11035/25*	Nur Aliesa Binti Anuar, ChM *L/3751/11017/25*
Anis Syazwani Binti Mohd Anuar, ChM *L/3810/11140/25*	Muhamad Gaddafi Bin Samsudin, ChM *L/3736/10987/25*	Nur Hafizati Binti Abdul Halim, ChM *L/3774/11064/25*
Arif Izzuddin Bin Mohd Sahat, ChM *L/3823/11170/25*	Muhammad Azaim Bin Dauma, ChM *L/3798/11111/25*	Nur Iziani Binti Abdul Razak, ChM *L/3778/11070/25*
Azrulhisyam Bin Ahmad, ChM *L/3728/10972/25*	Muhammad Dzul Ammar Bin Aslan, ChM *L/3735/10986/25*	Nur Nabilah Binti Mohd Za'im, ChM *L/3769/11054/25*
Chang Mui Ting, ChM *L/3822/11169/25*	Muhammad Faiz Bin Muhammad Helmi, ChM *L/3731/10976/25*	Nur Sofiana Binti Sugito, ChM *L/3723/10667/25*

Nur Syafiqah Binti Sauta, ChM *L/3747/11009/25*	Thong Siew Hui, ChM *L/3812/11143/25*	Shamsilawati binti Mustafar, ChM *M/6867/6217/12/24*
Nur Zabirah Binti Zabi, ChM *L/3821/11168/25*	Vanitha Sakthi A/P Ramesh Kumar, ChM *L/3722/10637/25*	Wan Yusreena Ilya Binti Wan Azizee, ChM *M/6870/9938/23/24*
Nurafiqah binti Ayob, ChM *L/3807/11129/25*	Vellysses Anak Jemy, ChM *L/3791/11094/25*	
Nurfatin Najihah binti Roslan, ChM *L/3825/11172/25*	Wan Muhammad Shafiq Bin Wan Jaafar, ChM *L/3771/11059/25*	**Upgrade to Fellow (FMIC)**
Nurhazwani Binti Mohd Hirmizi, ChM *L/3764/11046/25*	Wan Nor Amirah Binti Wan Zuhairi, ChM *L/3797/11107/25*	Li Hui Ling, ChM Dr. *F/0153/4605/04/15/24*
Nursarah Sofea Binti Ismail, ChM *L/3777/11069/25*	Wan Wei Wei, ChM *L/3763/11044/25*	Nor Aidora Binti Saedon, ChM *F/0152/4133/01/24*
Nursyafiqah Binti Abu Zaid, ChM *L/3760/11038/25*	Yap Chin Ann, ChM Dr. *L/3818/11162/25*	
Nursyahira Binti Abdur Rahim, ChM *L/3785/11078/25*	Yee Siew Fung, ChM Dr. *L/3766/11050/25*	
Nursyahirah Binti Suhaili, ChM *L/3767/11051/25*	Zinedine Zidane Bin Mohd Zainuddin, ChM *L/3782/11074/25*	
Nurul Ain Binti Jalil, ChM *L/3780/11072/25*		
Nurul Lyana Binti A Rahman, ChM *L/3759/11036/25*	**Upgrade to Member (MMIC)**	
Nurul Shahirah Binti Aziz, ChM Dr. *L/3802/11116/25*	Al-Malek Fahd bin Abdul Hamid, ChM Ts. *M/6948/6869/14/25*	
Nurul Syahindah Binti Khamisan, ChM *L/3816/11157/25*	Anis Shahidah binti Mohd Adil, ChM *M/6939/7875/17/25*	
Ong Hui Shan, ChM *L/3749/11012/25*	Anisa Faseeha binti Redzuan, ChM *M/6950/9214/21/25*	
Rachel Tan Sze Huey, ChM *L/3824/11171/25*	Chiang Zhang Jie, ChM *M/6945/10356/23/25*	
Rathna Mala A/P K Maniom, ChM *L/3746/11007/25*	Emyrul Iezwan bin Abd. Hamid, ChM *M/6866/6923/15/24*	
Razin Zafran Bin Kamalruzzaman, ChM *L/3733/10978/25*	Hii Sieng Chai, ChM *M/6869/10012/23/24*	
Rhysyeanella Ronny, ChM *L/3727/10971/25*	Hwong Chia Shing, ChM *M/6947/8513/19/25*	
Rizzat Shaqem Bin Abdul Rahman, ChM *L/3732/10977/25*	Irene Tian Chow Cheng, ChM *M/6943/10354/23/25*	
Ruhan A/L Shanmugam, ChM *L/3753/11022/25*	Jivitha A/P Veralingam, ChM *M/6944/6260/12/25*	
Rutheran A/L Sivaraman, ChM *L/3741/10999/25*	Kalaivani A/P Varadarajan, ChM *M/6872/6259/12/24*	
Siti Aisyah Binti Sanusi, ChM *L/3820/11166/25*	Libau Anak Barain, ChM *M/6949/10174/23/25*	
Siti Asmah Binti Yahaya, ChM *L/3786/11081/25*	Mohamad Khir Syafiq bin Moktar, ChM *M/6946/9779/22/25*	
Siti Hasrina Binti Haji, ChM *L/3724/10950/25*	Muhammad Hazwan Dinhusain Bin Johari, ChM *M/6868/9835/22/24*	
Sorfina Binti Amran, ChM *L/3756/11032/25*	Muhammad Nasruddin bin Ghazali, ChM *M/6941/7824/17/25*	
Sumithra A/P Mohanasunthar, ChM *L/3801/11115/25*	Nor Fateha binti Azuan, ChM *M/6864/9014/21/24*	
Tan Jen Kit, ChM Dr. *L/3744/11004/25*	Nor Zur Ain binti Zakaria, ChM *M/6871/8263/18/24*	
Tan Lai Kuan, ChM *L/3737/10988/25*	Nur 'Adilah Binti Abdul Nasir, ChM *M/6865/9964/23/24*	
Tay Rui Yang, ChM *L/3787/11083/25*	Nurin Irdina binti Shariff, ChM *M/6940/9487/22/25*	
Tengku Sarah Binti Tengku Md Fauzi, ChM *L/3826/11174/25*	Severster Chabu Anak Sungom, ChM *M/6942/9544/22/25*	

LABWARE®

Laboratory Information Management System (LIMS)
and Electronic Laboratory Notebook (ELN)

Join the Future of Laboratory Excellence with LabWare – *Transform Today!*

LABWARE LIMS & ELN CUSTOMER SATISFACTION RATING

Jurgen Lobert, a Department Head at Entegris, Inc., would be very likely to recommend LabWare LIMS for these reasons:

- Successful operation
- Implementation
- Support
- The best [LIMS] paradigm that I know of

Source: Jurgen Lobert, Department Head, Entegris, Inc.

Validated

LABWARE LIMS AND ELN CUSTOMER TESTIMONIAL

Laboratory Productivity Increases with LabWare®!

"LabWare® has assisted with turning our laboratory into a modern and professional facility. We have the majority of our scientific instruments interfaced with LIMS. Our productivity increased by 40%."

— Stephen Derham, Department Head, Sibelco Australia

Source: Stephen Derham, Department Head, Sibelco Australia

Validated

LABWARE LIMS AND ELN CUSTOMER TESTIMONIAL

"LabWare is at the top of the LIMS food chain!"

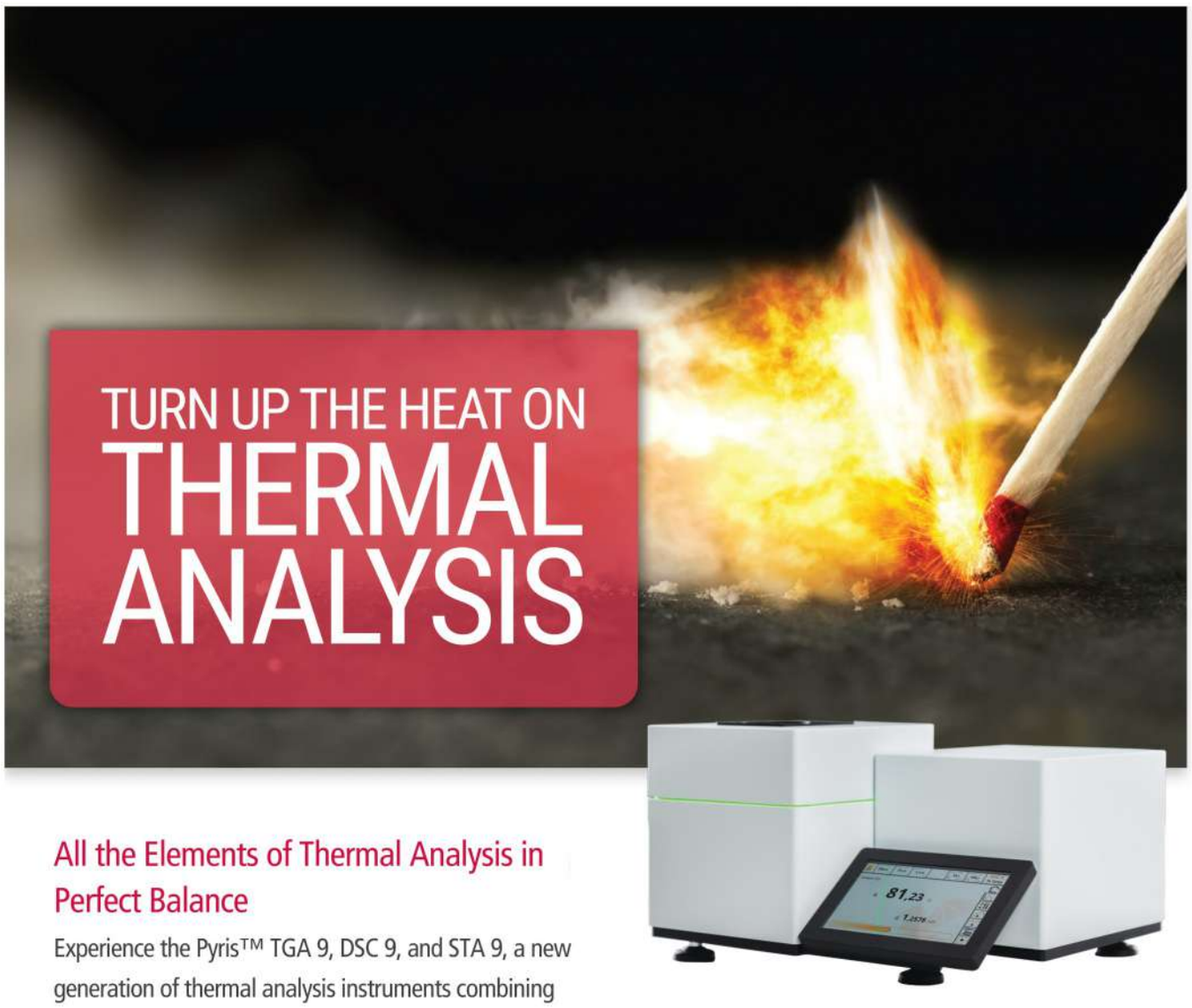
— Albert Lee, LIMS Administrator, PROLACTA BIOSCIENCE

Source: Albert Lee, LIMS Administrator, PROLACTA BIOSCIENCE

Validated

Get ready for the future!
Visit us at:
labware.com/lims
to see what's next.

LabWare Malaysia
B-06-07 & 08, Level 6 Block B, Sky Park, ONE CITY,
Jalan USJ25/1, Subang Jaya, 47650 Selangor
Phone: +603 5022 1700 / Email: infoAP@labware.com
labware.com



All the Elements of Thermal Analysis in Perfect Balance

Experience the Pyris™ TGA 9, DSC 9, and STA 9, a new generation of thermal analysis instruments combining precision, versatility, and sustainability. Designed for research scientists and QA/QC analysts, these systems simplify workflows, deliver reliable results, and meet the demands of modern testing and regulatory standards.

Pyris™ TGA 9, DSC 9, and STA 9
Next Gen Thermal Analysis Instruments

- Unmatched Precision
- Sustainable Design
- Enhanced Versatility
- Easy Maintenance
- Streamlined Operation
- Comprehensive Insights

For more details, visit: www.perkinelmer.com/category/pyris-tga-9-dsc-9-sta-9

Scan QR Code to Contact Us.

PerkinElmer

PerkinElmer Sdn Bhd
#2.01 Wisma Academy, Lot 4A, Jalan 19/1, 46300 Petaling Jaya, Selangor, Malaysia Tel:03-79491118 | Fax:03-79491119
https://www.perkinelmer.com/analytical-and-enterprise-solutions.html