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Message from the President



IKM 2022 – Looking back and moving forward

The year 2022 is coming to a close soon. We would like to review what we have done in 2022/23 and what will be happening in 2023/24.

For the **2022/2023 session**, we had the following major events:

First, we had the **55th Annual General Meeting (55AGM)** which was held on 26th March 2022 in the Kuala Lumpur Convention Centre. At this 55AGM, the IKM Council for 2022/2023 was elected.

The next major event was **Kuiz Kimia Kebangsaan Malaysia**, or **K₃M, 2022** which was held on 29th September 2022 in all schools taking part in the Quiz. A total of 35,922 students from 942 schools took part in K₃M 2022. This year, we also celebrated 21 years of K₃M from 2002 – 2022 with the theme – ***Celebrating 21 years of excellence in chemistry education in Malaysia***. As part of the Celebrations, we held the K₃M 21st Anniversary Grand Dinner on 30th September 2022 where we presented Certificate of Appreciation and plaques to members of the K₃M Technical Committee, some of whom had served since K₃M's inception in 2002.

Another significant event was the **International Congress on Pure & Applied Chemistry (ICPAC) 2022** which was held from 22 – 27th November 2022 at the Magellan Sutera Resort, Kota Kinabalu, Sabah. **ICPAC KK 2022** was a hybrid conference with 504 participants from 6 countries taking part. This is the biggest ICPAC that we have organised since 2016.

The final major event was **Malam Kimia 2022** on 2nd December 2022 at the One World Hotel, Petaling Jaya. Malam Kimia is our grand social event where we presented various IKM awards to our members, students, and also organisations. This year, a total of 664 guests were present at Malam Kimia 2022.

For the **2023/24 session**, we are moving full steam ahead.

The **56th Annual General Meeting (56AGM)** will be held on 18th March 2023.

The **International Congress on Pure & Applied Chemistry (ICPAC) 2023** will be held in Bali, Indonesia sometime early September 2023.

The **16th Asian Conference on Analytical Sciences (ASIANALYSIS XVI)** will be held from 9 – 12th October 2023 together with **LabAsia 2023** in Kuala Lumpur Convention Centre (KLCC).

We are also expecting the **Programme Standards for Chemistry** to be approved by the Malaysian Qualification Agency (MQA) soon. IKM will then implement the Accreditation of Chemistry Programmes in Malaysian universities.

The final version of the Amendments to the Chemists General Rules 2022 are with the Attorney General's office. We are also expecting this to be completed soon and we would be able to implement the new Rules by early 2023.

There will also be other programmes including training programmes at **IKM Professional Centre, Membership Development, IKM LMIC Examinations & Refresher Course, Karnival Kimia Malaysia (K₂M)** and other outreach programmes, **MYCN** activities and many others including events at IKM branches.

Looks like we are going to have a busy and fruitful 2023/24 session. I would also like to take this opportunity to wish all members **"Merry Christmas"**, and a **"Happy and Prosperous Chinese New Year"**.

Datuk ChM Dr Soon Ting Kueh
President, Institut Kimia Malaysia
Date: 20th December 2022

Commonwealth Chemistry Executive Board (CCEB) Meeting 2022

The Commonwealth Chemistry Executive Board (CCEB) Meeting 2022 was held from 19 – 20 September 2022 at Burlington House, London, UK. IKM President, Datuk ChM Dr Soon Ting Kueh, attended the Meeting as a member of CCEB.

The CCEB Meeting comprised the following:

- ♦ Sunday, 18 September – Welcome Dinner at Kolamba Restaurant, Kingly Street, London
- ♦ Monday, 19 September, all day – CCEB Meeting at Burlington House, London, follow by dinner hosted by Royal Society of Chemistry (RSC)
- ♦ Tuesday, 20 September, am – Briefing & training for all CCEB members

The Meeting started on Sunday, 18 September evening with a social function, the Welcome Dinner, at the Kolamba Restaurant, Kingly Street, London with the following CCEB members present:

Vicki Gardiner	Genevieve Adukpo
Sourav Pal	Naumih Noah
Soon Ting Kueh	Sarah Masters
Peter Mallon	Neil Coville
Pnyani Paranagame	Michael Forde
Robert Parker	Ale Palermo
Aurora Walshe	Gill McGrath

We were treated with sumptuous Sri Lankan foods with free flow of wine and lots of joyous exchanges.

The CCEB Meeting was held on the morning of Monday, 19 September at the St. James Suite, Cavendish Hotel, London where members witnessed the Royal Procession of the funeral of Queen Elizabeth II along the streets of London.

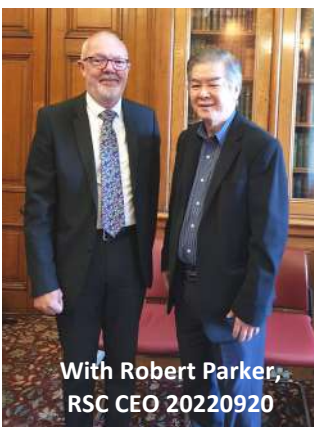
The CCEB Meeting started at 2.00 pm at St. James Suite with Dr Vicki Gardiner, the Commonwealth Chemistry President, in the Chair.



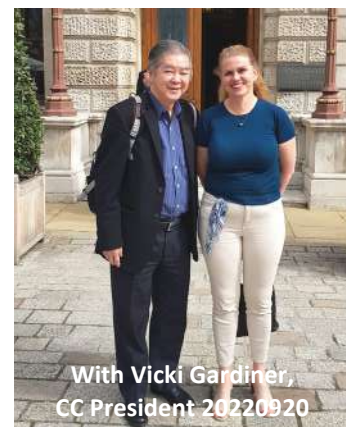
CCEB Meeting at Burlington House Monday 20220919



CCEB Meeting on Tuesday 20220920



With Robert Parker, RSC CEO 20220920



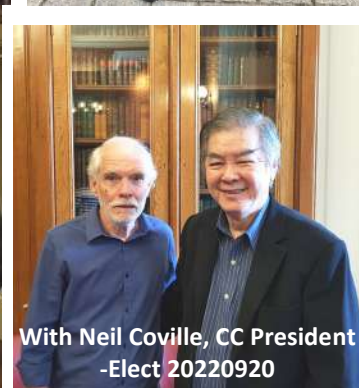
With Vicki Gardiner, CC President 20220920



Burlington House London



With Gill Reid, RSC President 20220920



With Neil Coville, CC President -Elect 20220920

Item No. 1 Meeting Matters

The following are the Commonwealth Chemistry Executive Board Members present:

Executive Board:	
Dr Vicki Gardiner	President and Executive Board Chair (Australia)
Dr Genevieve Adukpo	Executive Board Member (Ghana) – by Zoom
Professor Neil Coville	President-Elect & Executive Board Member (South Africa)
Dr Michael Forde	Executive Board Member (Trinidad and Tobago)
Professor Peter Mallon	Executive Board Member (South Africa)
Professor Sarah Masters	Executive Board Member (New Zealand)
Dr Deborah Nicoll-Griffith	Executive Board Member (Canada) – by Zoom
Dr Naumih Noah	Executive Board Member (Kenya)
Professor Sourav Pal	Executive Board Member (India)
Professor Priyani Paranagama	Executive Board Member (Sri Lanka) – by Zoom
Dr Robert Parker	Executive Board Member (UK)
Datuk Dr Soon Ting-Kueh	Executive Board Member (Malaysia)
Professor Sandeep Verma	Executive Board Member (India)

In attendance:	
Dr Ale Palermo	Secretary
Ms Gill McGrath	Secretariat
Dr Andrew Shore	Secretariat
Dr Aurora Walshe	Secretariat

Item No. 2 Minutes of Second Commonwealth Chemistry Annual General Meeting

Minutes of the Second Commonwealth Chemistry Annual General Meeting held on 19 May 2022 was adopted. It would be confirmed at the Third Annual General Meeting to be held in Trinidad & Tobago next May 2023.

Items No. 3 Other Matters

Among the main items discussed are the following:

♦ **2nd Commonwealth Chemistry Congress to be held in Trinidad & Tobago from 23 – 25 May 2023**

♦ **3rd Commonwealth Chemistry Virtual Poster Event to be held from 28 – 29 September 2022**

♦ **Development of the Commonwealth Chemistry Early Career Chemists Network (CCECN) as an action from Sustainable Chemistry Workforce**

♦ **A Pay and Reward Survey and Report was also presented.**

♦ **Membership Application – Membership application from the Chemical Society of The Gambia was approved.**



Dinner hosted by RSC on Monday 20220919



Welcome Dinner at Kolamba on Sunday, 20220918

Item No. 4 Governance Training

On Tuesday, 20 September, the Meeting was held at the Geological Society of London at Burlington House. The Meeting discussed the Terms of Office of CCEB members and also Terms of Reference, including Governance training.

After the meeting, members adjourned to the Royal Society of Chemistry for lunch.

The Meeting ended at 2.30 pm.

A Report by:

Datuk ChM Dr Soon Ting Kueh

Date: 30 September 2022

K₃M 2002 – 2022

Kuiz Kimia Kebangsaan Malaysia

Celebrating 21 years of excellence in chemistry education in Malaysia

Kuiz Kimia Kebangsaan Malaysia (K₃M), a popular national chemistry quiz, was first initiated by Institut Kimia Malaysia (IKM). When the Quiz was first launched in 2002, it received very good response from Malaysian students with 10,399 students taking part. The momentum continued over the year and in 2020, we have a record of 39,086 students taking part. Up to 2022, the total number of students taking part in K₃M from 2002 to 2021 is more than half a million, 563,263.

From 2002 to 2022

So, over the last 21 years, we have achieved a lot in getting students interested in chemistry. We also believed that K₃M has influenced a large number of them to take up chemistry at the university level and possibly go even higher for postgraduate programmes in chemistry. Many of them may even end up with a career in chemistry.

We would like to give credits to a number of people who have contributed so much to this development of K₃M in Malaysia. First is Prof Dato' ChM Dr Mohd Jamil Maah who serves as the Chairman of the K₃M Technical Committee right from the beginning in 2002. Then we have Datin ChM Dr Ng Soo Boon and ChM Dr Saadah Masrukin who were also with us right from the beginning in 2002. Datin ChM Dr Ng is the Coordinator of the A Level programme and ChM Dr Saadah is the Coordinator of the O Level

programme. Many of the K₃M Technical Committee members have served in the Committee for more than 10 years.

We would also like to record our sincere appreciation to the Ministry of Education Malaysia for their support of K₃M since its inception in 2002.

Celebrating 21 Years of Excellence in Chemistry Education

In 2022, we decided to celebrate 21 years of K₃M with the theme of “**Celebrating 21 Years of Excellence in Chemistry Education**”. The Celebrations comprised a souvenir publication with the title of “**Celebrating 21 Years of Excellence in Chemistry**” and a grand dinner on 30th September 2022. At the Grand Dinner in Petaling Jaya, we invited more than 100 guests including Members of the K₃M Technical Committee and IKM Council. During the dinner, we gave recognition to those who have contributed to the success of K₃M over the last 21 years. A Certificate of Appreciation and a special souvenir watch was presented to each member of the K₃M Technical Committee. Special Recognition of Service plaques were presented to Prof Dato' ChM Dr Mohd Jamil Maah, Datin ChM Dr Ng Soo Boon and ChM Dr Saadah Masrukin for their long and outstanding services.





K₃M 2022 and beyond

For K₃M 2022, we recorded 35,922 participants. This shows that K₃M is back on track. In the years to come, K₃M will become even more popular with Malaysian students and continue to promote chemistry education and popularising of chemistry in Malaysia.

A Report by:
Datuk ChM Dr Soon Ting Kueh
K₃M Founder & IKM President
(2018 –)
Date: 30th October 2022

In aid of the flood victims in Pakistan, IKM made a small donation

Pakistan suffered the deadliest floods in 2022. The floods affected 33 million people in Pakistan and destroyed 897,014 houses and damaged another 1,391,467. 1,739 people died, including 647 children, and an additional 12,867 were injured. Over 2.1 million people were left homeless because of the floods. Around 10–12% of Pakistan was flooded; the total area of standing floodwaters peaked between July and August 2022 at approximately 32,800 square miles. 1,164,270 livestock have been killed, most of them in the province of Balochista. Agricultural products were also devastated by the flooding.

Institut Kimia Malaysia (IKM) sympathized with the predicament of the Pakistan people and the Council decided to give a small donation of RM10,000 to the flood victims. On 17th November, 2022 an IKM delegation comprising Datuk ChM Soon Ting Kueh, Datin ChM Dr Zuriati Zakaria and ChM Dr Aqeel Saravanan met the High Commissioner of Pakistan, H.E. Ms Amna Baloch, at the Pakistan High Commission in Jalan Ampang, Kuala Lumpur, to present a cheque of RM10,000. H.E. expressed her sincere thanks to the members of IKM for being so kind and generous to help the people of Pakistan.



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International Congress on Pure & Applied Chemistry Kota Kinabalu (ICPAC KK) 2022 22 - 27 November 2022

Institut Kimia Malaysia (IKM) successfully organized the ICPAC Kota Kinabalu (ICPAC KK) 2022 at the Magellan Sutera Resort Hotel, Kota Kinabalu, Sabah from 22 – 27 November 2022.

ICPAC KK 2022 is a major international scientific meeting covering all major areas of pure and applied chemistry. ICPAC was first held in 2016 in Kuching, Sarawak, Malaysia and ever since, it is being held annually in countries like Vietnam, Cambodia, Malaysia and Myanmar. ICPAC KK 2022 is the sixth of a series of major international scientific meeting covering all areas of pure and applied chemistry including specific themed symposia.

The participants of ICPAC KK 2022 come from all over the world, but majority are from Asia. For ICPAC KK 2022, we have a total of 504 delegates coming from 6 countries. The Scientific programmes include 8 Plenary Lectures, 18 Keynotes, 359 Invited/Oral Lectures and 10 poster presentations, making a total of 395 presentations.

IKM would like to record sincere appreciation to the Joint Organizers, namely Universiti Malaysia Sabah and the Foundation for Interaction between Science and Technology, Japan, for collaborating in jointly organizing ICPAC KK 2022. The theme 'Chemistry & Chemical Innovations for Sustainable Development in Rapidly-Emerging Economies' focused on advancing chemistry for meeting the UN Sustainable Development Goals 2030.

ICPAC KK 2022 comprised the following General Session and Symposia:

- Symposium on Organic and Biomolecular Chemistry (OBC)
- Symposium on Analytical and Environmental Chemistry & Engineering (AEC)
- Symposium on Polymer and Materials Chemistry (PMC)
- Symposium on Physical Chemistry and Catalysis (PCC)
- Symposium on Inorganic and Coordination

Chemistry (ICC)

- ICPAC General Session (IGS)
- International Symposium on Advanced Polymeric Materials (ISAPM) 2022

The main objective of ICPAC KK 2022 is to promote the advancement of chemical sciences in the Asia Pacific region. The congress also leads to collaboration in research and networking among scientists from this part of the world. In parallel with rapid economic development in this part of the world, we hope that this region will also see significant scientific advancement that will give support to the socio-economic transformation and elevate the level of





science, technology and innovation to be on par with the best in the world.

OFFICIAL OPENING CEREMONY

Datuk Sr. Hj Mohd Yusrie Abdullah, representing YB

Datuk Jafry Bin Ariffin, Minister of Tourism, Culture and Environment, Sabah, officiated the Opening Ceremony of ICPAC KK 2022 on Tuesday, 22 November.

ICPAC KK 2022 TECHNICAL PROGRAMME PLENARY SESSIONS

Tuesday, 22 November 2022

Plenary Lecture 1

From Reduction to Alkylation: A Journey with Iron Complexes

Jean Luc Renaud, *University of Caen Normandie, France*

Plenary Lecture 2

Moon-shot Design on BioNylon with Photo-switched Marine-Degradability

Tatsuo Kaneko, *Japan Advanced Institute of Science and Technology, Japan*

Wednesday, 23 November 2022

Plenary Lecture 3

Game-changing innovation in peptide synthesis

Hisashi Yamamoto, *Chubu University, Japan*

Plenary Lecture 4

Enantioselective Decarboxylative Chlorination of β -Oxocarboxylic Acids and Stereospecific Derivatization of the Resulting α -Chloroketones

Kazutaka Shibatomi, *Toyohashi University of Technology, Japan*

Thursday, 24 November 2022

Plenary Lecture 5

Axis-to-center Chirality Transfer Reaction of Organophosphorus Compounds with a Binaphthyl Group as a Key Process Leading to the Formation of P-Chirogenic Derivatives

Toshiaki Murai, *Gifu University, Japan*

Plenary Lecture 6

Ligand-Protected Metal Nanoclusters: Recent Development in Synthesis and Application in Energy and Environmental Field

Yuichi Negishi, *Tokyo University of Science, Japan*

Friday, 25 November 2022

Plenary Lecture 7

Temperature-Response Chemistry of Thermo-Electrochemical Cell toward Waste Heat Harvesting

Tepei Yamada, *The University of Tokyo, Japan*

Plenary Lecture 8

Glass transition in polymers

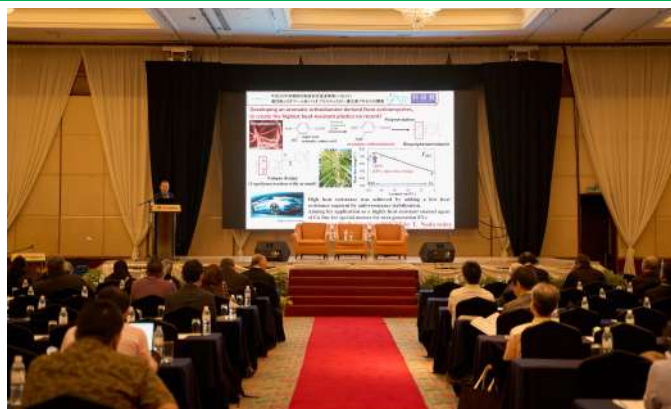
Jean Marc Saiter, *University of Rouen Normandy, France*

ICPAC KK Welcome Reception

The welcome reception for the delegates were held on North Borneo Cruise. The 2-hour cruise sailed past the islands of Tunku Abdul Rahman Marine park and down the central coast gliding along the city's famous Waterfront. The delegates got a feel of Kota Kinabalu's stunning sea-side position with a combination of sumptuous cuisine, breezy sea views and live music onboard the North Borneo Cruise.

ICPAC KK Banquet

The Congress Banquet held on Thursday, 24



November, was a grand occasion. About 250 delegates with invited guests attended the Banquet. Datuk ChM Dr Soon Ting Kueh gave the Welcome Address to invite all delegates to sample the local dishes and enjoy the entertainment provided. The delegates were entertained by cultural performances of Sabah Tourism Board. A number of guests including Prof Takahashi and Datuk ChM Dr Soon also took to the stage with karaoke singing. All in all, it was a fun filled evening.

Congress Tours

IKM organized 3 tours for the delegates with a local tour company. Delegates were allowed to choose one from the three tour packages offered. Tour A started with the Mari Mari Cultural Village followed by city tour. Mari Mari Cultural Village offered glimpses into the lives of Sabah's rich culture with its distinctive houses, costumes and traditional skills of five major Sabah's ethnic groups; the farmers and traders Dusun and Rungus, the hunters and fishermen Lundayeh, the cowboys and sea gypsies Bajau, and the famously feared warrior tribe Murut. The tour proceeded with KK City Tour which include the Atkinson clock Tower, Masjid Likas (Floating Mosque) and UMS, Yayasan Sabah and The Kinabalu Tower, which is also known as Sabah State Administrative Centre. Tour B was a boat ride to one of the islands located in the Tunku Abdul Rahman Marine Park. The delegates got to relax and luxuriate on pristine white beaches, swim in warm azure waters and snorkel amidst a myriad to tropical fishes or explore rich coral reefs on the islands fringes. Tour C started with visit to Nabalun Town for the Nabalun Handicraft & Souvenir Market. Delegates were able to enjoy a panoramic view of Mount Kinabalu from a nearby platform. After that they were brought to Kinabalu National Park, Malaysia's very first UNESCO World Heritage Site. Among the places visited were Sabah Tea, Fish Spa and Kundasang war memorial. All in all, the delegates enjoyed the excursion tours very much.

Conclusion and Appreciation

ICPAC KK 2022 was a successful and memorable event. On behalf of the Organizers, IKM would like to record our sincere appreciation to the Foundation for Interaction between Science and Technology (Japan), Universiti Malaysia Sabah, Asia Chem Corporation (Japan), Sabah Tourism Board and Malaysia Convention & Exhibition Bureau (MyCEB) for the support and collaboration in making ICPAC KK 2022 a great success. We would also like to thank all ICPAC KK 2022 Plenary and Keynote Speakers, all Invited, Oral and Poster Presenters, and all Session Chairpersons for contributing to the success of ICPAC KK 2022. To all Members of ICPAC KK 2022 Organizing Committee and all those who have contributed in one way or another in making ICPAC KK 2022 a success, we would like to record our utmost appreciation.

Report by:
Datuk ChM Dr Soon Ting Kueh
Chairman, ICPAC KK 2022
5 December 2022



INSTITUT KIMIA MALAYSIA

MALAYSIAN INSTITUTE OF CHEMISTRY

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

1st NOTICE

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FACEBOOK: Institut Kimia Malaysia

President: Datuk ChM Dr Soon Ting Kueh

14 December 2022

To: All IKM members,

NOTICE OF 56th AGM 2023

Notice is hereby given that the 56th Annual General Meeting of the Institute will be held as follows:

Date : **Saturday, 18 March 2023**
Time : **2.00 p.m.**
Venue : **Junior Ballroom (Level C)
One World Hotel, Bandar Utama, 47800 Petaling Jaya, Selangor**

Agenda:

1. Presidential Address.
2. To adopt the minutes of the 55th AGM held on Saturday, 26 March 2022.
3. Matters Arising.
4. To receive and consider the Annual Report of the Institute for 2022/2023.
5. To receive and consider the Annual Statement of Accounts of the Institute and the Auditor's Report for 2022.
6. To consider amendments to IKM Gold Medal Award.
7. To elect 5 Council members and to fill vacancies in the Council created by the retirement of the following Council members by rotation:
Datuk ChM Dr Soon Ting Kueh
Assoc Prof ChM Dr Juan Joon Ching
ChM Chang Hon Fong
Dato' ChM Dr Hj Mas Rosemal Hakim bin Mas Haris
Prof ChM Dr Mansor Ahmad
8. To appoint qualified auditor(s) and determine his/her or their remuneration.
9. To consider any other matters of which notice in writing has been given to the Honorary Secretary by a member at least 14 days before the Meeting.

Yours Sincerely,
ChM Chang Hon Fong
Honorary Secretary

Note:

- a) **The Annual Report and Statement of Accounts 2022/2023 will be uploaded at IKM Website for members' access. Please refer to IKM Website (<http://www.ikm.org.my/>) in early March 2023 for updates. Hardcopy documents will be made available to the members during the AGM.**
- b) **Lunch is provided starting 12.15 pm at Cinnamon Coffee House (Level C), One World Hotel. Please confirm your attendance for the AGM and lunch to Mrs Siti or Mr Azizi (Tel: 03-77283272 or email: siti@ikm.org.my / azizi@ikm.org.my).**

Malam Kimia & Presentation of IKM Awards 2022 2 December 2022

Institut Kimia Malaysia (IKM) successfully organized the Malam Kimia & Presentation of IKM Awards 2022 on 2 December 2022 at One World Hotel, Petaling Jaya, Selangor. Malam Kimia is an annual gala event where we recognise excellence in chemistry and contributions to IKM and the development of chemistry in Malaysia. The awards presented were as follows: K₃M Top Scorer Awards, IKM Merit Awards, IKM Special Merit Awards, IKM Graduate Chemistry Medals, IKM Research Prize in Polymer & Materials Science, IKM/RSC-Synthomer Award in Polymer Science, Tan Sri Datuk Ong Kee Hui Postgraduate Chemistry Medal, Outstanding Young Chemist Awards, IKM Citation Awards, New Fellows of IKM, IKM Gold Medal and IKM Laboratory Excellence Awards.

This year we presented IKM Licentiate Examination Certificates to those who passed the IKM LMIC Part 1 Examination in 2021 & 2022. A total of 47 candidates passed the examination in 2021 and 29 in 2022. Malam Kimia 2022 managed to attract a total of 664 guests comprising IKM members, S&T organizations, universities and industries as well as well-wishers. The event was a great success. On behalf of the Organizers, IKM would like to record our sincere appreciation to Ministry of Science, Technology and Innovation (MOSTI), LabWare Malaysia, Anton Paar Malaysia Sdn Bhd, Merck Sdn Bhd, Informa Markets, IKA Works (Asia) Sdn Bhd, Trienekens (Sarawak) Sdn Bhd, Mirror Gifts Resources, SugarBomb Worldwide Sdn Bhd, all IKM Branches and all those who have contributed to the success of Malam Kimia & Presentation of IKM Awards 2022.



Award	Recipient
IKM Gold Medal	Prof Datuk ChM Ts Dr Taufiq Yap Yun Hin
New Fellow of IKM	Prof ChM Dr Mohd Basyaruddin Bin Abdul Rahman, Prof ChM Dr Rusli Bin Daik, Assoc Prof ChM Dr Lee Hooi Ling, Assoc Prof ChM Dr Goh Choo Ta, Prof ChM Dr Mohammad Bin Kassim, Hon Col (CD) Snr Assoc Prof ChM Dr Kathiresan A/L Sathasivam, ChM Nurida Bte Mohd Yusop
IKM Citation Award	Assoc Prof ChM Dr Melati Binti Khairuddean, Assoc Prof ChM Dr Nor Aziyah Binti Bakhari, ChM Dr Cindy Tan Soo Yun, Prof ChM Dr Zaiton Abdul Majid
IKM Outstanding Young Chemist Award	Academic Category: Prof ChM Dr Lim Hong Ngee Industry Category: ChM Dr Mohamad Nasir Bin Mat Arip
Tan Sri Datuk Ong Kee Hui Postgraduate Chemistry Medal	Dr Muhammad Ameerullah Bin Sahudin
IKM/RSC – Synthomer Award in Polymer Science sponsored by Synthomer Sdn Bhd	ChM Dr Muhammad Hakim Shafie
IKM Research Prize in Polymer and Materials Science sponsored by HARPS Holdings Bhd and Synthomer Sdn Bhd	Ayo Olasupo, Bee Soo Ling, Chia Wen Yi, Hemavathi Krishnan, Muhammad Faiz Bin Aizamddin, Roslim Bin Ramli @ Lim Chai
IKM Graduate Chemistry Medals	Khor Jia Wei, Lim Wei Jean, Mohamad Alif Qayyuan Bin Zawawi, Muhammad Syafiq Akmal Bin Mohd Fahmi, Wong Ru Yee

IKM LMIC Part I Examination 2021 Certificates Recipients	
Arina Hidayah Binti Irahmani	Nazirah Binti Razali
Azyyati Binti Mohd Padzil	Nik Muhammad Ikhwani Sulhi Bin Ibrahim
Chang Hui Kee	Noor Haida Binti Sebran
Dr Lau Yeh Siang	Norhafiza Binti Sulaiman
Dzulhafiz Said Bin Hasbi	Nur Lina Binti Zulkipeli
Elsa Easter Justine	Nurmelissa Hanani Binti Hamidon
Faten Ahada Binti Mohd Azli	Nursyuhaida Binti Mohd Hanafi
Hairiyatul Aliyah Binti Abdul Rahim	Nurul Azima Binti Abd Aziz
Kanagaraj A/L Rajandran	Rabitah Binti Mohamed Hanafiah
Khoo Yee Shu	Rasvini A/P Asogan
Khor Qiongzhi	Sanhya Letchumi A/P Tegaraja
Kong Siew Fung	Shirley Chai Sing Yee
Lai Hui Ting	Shuhaizi Bin Ahmad
Lau Siau Ting	Tai Nyok Ling
Lee Khai Hong	Tan Siew Lan
Lee Shu Zhen	Tan Xiang Han
Lim Huey Chen	Teh Chin Loong
Lina Khalida Binti Norsharifudin	Teng Siaw Lin
Ling Jem Shan	Teoh Jay Kee
Liyana Salwa Binti Mohd Nazir	Wong Boon Keat
Matavi A/P Manohar	Wong Wai Yee
Mohammad Azri Bin Md Hanafiah	Wong Yung Ting
Muhammad Azza Bin Mustafa	Yeo Tze Ying
Muhammad Firdaus Bin Zainuddin	

IKM LMIC Part I Examination 2022 Certificates Recipients	
Anna Anak Janin	Najiah Binti Nadir
Dr Chan Choi Yee	Ng Kok Hua
Dr Tan Ngai Paing	Nur Afifah Binti Basari
Dr Woo Lai San	Nur Khairina Binti Khosan
Dr Yong Yoong Soon	Nurul Ezzati Binti Kassim
Ida Madiha Binti Yusoff	Nurulhuda Binti Mohd Sani
Judith Jelilie Anak Jeffery German	Ow Yu Wei
Jumaini Binti Silamuddin	Roshini A/P Nadaraja
Lai Jian Yu	Rozainie Binti Md Rosalin
Lee Yun Qian	Samantha Ling Yuan Ci
Loh Yik Khang	Suganthi A/P Krishnan
Mardiatul Atirah Binti Mohd Sabri	Tey Cheng Yi
Marissa Binti Mazlan	Tong Shi Ruo
Muhammad Ikhsan Bin Abdur Rahman	Wong Pui Nei
Muhammad Syukor Bin Sulaiman	



The IKM Merit Award Recipients

Pung Ruo Xin
Derick Wong Jun Jieh
Cheng Yanly
Ryan Koh Jia Xian
Ryan Chin Aun Shern
Yeow Shuen Yi
Lim Yee Han
Tok Evan
Joel Pang Kai Chen
Nur Aimi Izzah binti Halim
Marsha binti Mokhtar
Nur Sarah Hanis binti Mohd Lip
Danish Anas Yap Taufiq Yap
Hannah Tan Ruyi
Chua Jade Lynn
Kaartic Ramana A/L Vengidesh
Joyce Pang Kai Sze
Tang Yee Jie
Annabelle Ju Zhen Yi
Saveen Raj A/L Shanmuga Suntharam

IKM Special Merit Award sponsored by IKM Law Hieng Ding Foundation

Mdm Komathy Veerasingham
Mdm Lee Saw Im



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ALS Technichem (M) Sdn Bhd, Selangor	
ASEAN Bintulu Fertilizer Sdn Bhd	
Asiatest Laboratory Service Sdn Bhd	
Bio Synergy Laboratories Sdn Bhd	
Borneo Samudera Sdn Bhd, Central Laboratory	
Chemsain Konsultant Sdn Bhd, Kota Kinabalu	
Chemsain Konsultant Sdn Bhd, Shah Alam	
Eurofins NM Laboratory Sdn Bhd	
ExcelVite Sdn Bhd	
Fedmas Assay Office Sdn Bhd	
FGV Agri Services Sdn Bhd, FGV Analytical Laboratory, Jengka, Pahang	
FGV Agri Services Sdn Bhd, FGV Analytical Laboratory, Sabah	
FGV Johor Bulkiers Sdn Bhd, FJB Testing Laboratory	
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Forest Research Institute Malaysia (FRIM), Soil Chemistry Laboratory	
Forest Research Institute Malaysia (FRIM), Wood Composite Testing Laboratory	
Forest Research Institute Malaysia (FRIM), Wood Preservative Analytical Laboratory	
Indah Water Konsortium Sdn Bhd, Central Laboratory Services	
Indah Water Konsortium Sdn Bhd, Northern Laboratory Services	
Indah Water Konsortium Sdn Bhd, Penang Laboratory Services	
Indah Water Konsortium Sdn Bhd, Selangor Laboratory Services	
Indah Water Konsortium Sdn Bhd, Southern Laboratory Services	
Jabatan Kimia Malaysia, Cawangan Bintulu, Sarawak	
Jabatan Kimia Malaysia, Petaling Jaya, Selangor	
Kualiti Alam Sdn Bhd	
Lubetech Sdn Bhd	
Mahamurni Plantations Sdn Bhd	
Malaysia LNG Sdn Bhd	
Malaysian Agricultural Research and Development Institute (MARDI), MARDILab Serdang	
Malaysian Refining Company Sdn Bhd	
Malaysian Timber Industry Board (MTIB), Fibre and Biocomposite Center (FIDEC)	
National Institute of Occupational Safety and Health (NIOSH)	
National Poison Centre, Toxicology Laboratory	
Panasonic Industrial Devices Malaysia Sdn Bhd, CQD Laboratory	
Pengurusan Air Selangor Sdn Bhd, Northern Regional Laboratory, Sg. Selangor Phase 2 Water Treatment Plant	
Pengurusan Air Selangor Sdn Bhd, Southern Regional Laboratory, Sg. Labu Water Treatment Plant	
Pengurusan Air Selangor Sdn Bhd, Southern Regional Laboratory, Sg. Semenyih Water Treatment Plant	
Perbadanan Bekalan Air Pulau Pinang (PBAPP), PBA Central Laboratory	
PETRONAS Chemicals Ammonia Sdn Bhd, PC Ammonia Laboratory	
PETRONAS Chemicals Derivatives Sdn Bhd	
PETRONAS Chemicals Ethylene Sdn Bhd, Central Laboratory	
PETRONAS Chemicals Fertiliser Kedah Sdn Bhd, PCFKSB Laboratory	
PETRONAS Chemicals Methanol Sdn Bhd	
PETRONAS Chemicals MTBE Sdn Bhd, PC MTBE Laboratory	
PETRONAS Gas Berhad, Analytical Technology Export Terminal	

PETRONAS Gas Berhad, Analytical Technology Kertih
PETRONAS Gas Berhad, Analytical Technology Kertih, Utilities Kertih
PETRONAS Gas Berhad, Analytical Technology Santong, Gas Processing and Utilities
PETRONAS Gas Berhad, Analytical Technology Utilities Gebeng
PETRONAS Penapisan (Terengganu) Sdn Bhd, Analytical Technology Services
PETRONAS Research Sdn Bhd
Petrotechnical Inspection (M) Sdn Bhd
Prisma Laboratory (M) Sdn Bhd, Johor Bahru
Prisma Laboratory (M) Sdn Bhd, Shah Alam
PRPC Utilities and Facilities Sdn Bhd, PRPC UF Centralised Laboratory Services
Ranhill SAJ Sdn Bhd, Central Laboratory
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SGS (Malaysia) Sdn Bhd, Kuching
SGS (Malaysia) Sdn Bhd, Port Klang
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SGS (Malaysia) Sdn Bhd, Shah Alam
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Sime Darby Plantation Research Sdn Bhd, LS Laboratories Sabah
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Ong Zhi Yen	SMK Sultan Ibrahim
Eugene Ang Soosay	SMK Seri Mutiara
Cheok Tze Ziang	SMK Seri Mutiara
Au Yong Mun Keng	SMK Seri Mutiara
Chiew Yuit Shuin Ryan	SMK Seri Mutiara
Kenzy Wong Chee How	SMK Seri Mutiara
Chin Yong Hong	SM Kuen Cheng
Ng Yu Xuan	SM Kuen Cheng
Goh Weixuan	SMK St. Anne's Convent
A LEVEL	
Moey Sean Jean	SM Kuen Cheng
Chang Kian Yau	SUNWAY College Kuala Lumpur
Andrew Wong Zhi Yong	SMK Tung Hua
Joyton Fu Hung Li	Methodist College Kuala Lumpur
Tan Yu Rou	SM Foon Yew - Kulai
Pang Shu Han	SM Foon Yew - Kulai
Pang Yi Hahn	SM Foon Yew - Kulai
Lee Han Yang	SUNWAY College Kuala Lumpur

K3M Top Scorer Award Winners 2022	
O LEVEL	
Wong Jian Bin	Chong Hwa Independent High School
Te Yuen Bing	SMJK Yoke Kuan
Cheong Chi Fung	SMK Bandar Baru Seri Petaling
Yee Siao Lin	SMK Bandar Baru Seri Petaling
David Luk Ku Chian	SM Lodge
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Pua E Rick	Kolej Yayasan UEM
Joyton Fu Hung Li	Methodist College Kuala Lumpur



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Green Chemistry and the U.N. Sustainable Development Goals: Harnessing Their Combined Power

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Abstract

In 2015 the United Nations created a framework comprising 17 aspirational goals known as the Sustainable Development Goals (SDGs), with a view towards peace and prosperity by 2030 (Figure 1) (1). Green Chemistry (GC) has always been recognized as a pathway to sustainability. However, with the new systems thinking approach, perhaps it is best to look at both of these together in order to recognize the interconnected nature of the systems being studied. Using solar panels as a case study a new teaching approach to integrating the UN SDGs, green chemistry and equity will be discussed. This approach has been presented to Master's and Ph.D. students in the international program at Chulalongkorn University in Bangkok, Thailand as well as undergraduate students at Worcester State University in Worcester, Massachusetts in the U.S. Takeaways from these presentations will be shared.

Workshop Description

A three-hour online workshop was conducted on February 6, 2022 using Zoom. There were thirteen student participants from the new Green Chemistry and Sustainability graduate program at Chulalongkorn University in Bangkok, Thailand. These students represented a diverse audience with representation from Thailand, Vietnam, Nigeria, Egypt, and the Philippines. The workshop was developed as a collaboration between two Chulalongkorn and two Worcester State University faculty members.

The advent of conferencing technologies such as Zoom and the familiarity of these tools inadvertently developed during Covid by both students and faculty has opened up opportunities for international collaborations.

Workshop Foundations

Green Chemistry is defined as "the utilization of a set of principles that reduces or eliminates the use or generation of hazardous substances in the design, manufacture and application of chemical products". It has been referred to in numerous sources as "molecular-level pollution prevention. Green chemistry is not related to a specific discipline in chemistry, but instead provides any chemist with a framework in which to design molecular processes. There are twelve principles associated with green chemistry that provide a framework for assessing if a process may be benign and areas for progress (2). Sustainable Development is defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" by the Brundtland definition of sustainable development (3). In 2015 all United Nations member nations adopted The 2030 Agenda for Sustainable Development which further lists 17 Sustainable Development Goals (SDGs). The UN terms this "an urgent call for action by all countries - developed and developing - in a global partnership" (4). It is clear that chemicals are an important part of achieving the SDGs. For example, fertilizers are key to achieving two of the SDGs: #1, No Poverty and #3, Zero Hunger. However, at present fertilizers are major contributors to climate change, and produce several downstream water quality issues (5). Even though a chemical solution addressed an SDG effectively, it did not ensure sustainable development. On the other hand, can simply using Green Chemistry solve all of the problems contained

within the UN Sustainable Development Goals? No, the same fertilizer could be manufactured using green chemistry principles, but the end-of-life consequences still persist! Simply using some or even all principles of green chemistry to try and solve the problems and hope to achieve overall sustainable results is shortsighted and runs the risk of unintended consequences. We must consider factors beyond purely chemical solutions. We must explore the interconnected nature of SDGs, Green Chemistry and Sustainability. "In order for the potential of using chemistry to achieve SDGs, there are challenges that must be addressed within the chemical enterprise and within the society that this enterprise impacts" (6). We must therefore define "Systems Thinking" (6). Systems Thinking emphasizes the interdependence of components of dynamic systems. If we put chemistry into this context, we must move beyond isolated consideration of reactions and consider where materials come from and how they are transformed and used. We also must consider what happens to them at the end of their usable life span. Systems thinking must consider the balance between the benefits and impacts of chemical substances and look at the role they play in society and the environment. A systems thinking approach should inherently include an understanding of economics of the solution and consider whether the solution proposed is equitable to all stakeholders. Additionally, it is essential to collaborate internationally in order to address these complex issues. This workshop has been presented to students who represent at least 6 nationalities. This is important because the same environmental issue/solution is not always viewed the same way due to differences in things like background, climate, opportunity and socioeconomics of a diverse group of people. This allows for many different perspectives. This has led to interesting discussions and opportunities for students and faculty moderators to learn from each other, regardless of their country of origin. We must increase the diversity of thought represented by those in the chemical industry in order to create viable solutions to these complex problems. Exchanges such as this will help that diversity in thought.

Structure of the Workshop

The students had some background in green chemistry, but they had not been introduced to SDGs. An introductory presentation provided necessary information about SDGs. The students were asked to write down



indicate that pursuing these workshops are important and do lead to students thinking more deeply about these issues thereafter. Out of the thirteen participants, eleven responded to a survey sent out after the workshop. All eleven respondents acknowledged increased understanding of both green chemistry and the UN SDGs after the workshop (Figure 2). All of the students who responded indicated an increased ability to apply Systems Thinking concepts to future work. Despite the virtual environment, the discussions were lively and it did lead to students sharing diverse perspectives. Some of the challenges of the workshop included timing due to a twelve-hour time

difference. We held the workshop early on a Sunday morning in Massachusetts, which translated to early evening in Bangkok. By the end of the workshop, the students were online at midnight, which is obviously not optimal. Breaking up the workshop into smaller sections would both address feedback from the students that it was too long as well as provide more flexibility with respect to scheduling across time zones. For future planning, we could consider a hybrid model that would allow an in-person component for group activities and breakout sessions to develop a more robust student interaction.

Summary

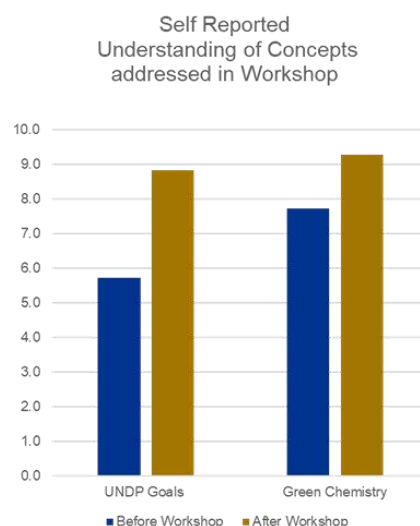
A virtual workshop linking the UN Sustainability Goals, Green and Sustainable Chemistry and Systems Thinking was developed by faculty at Worcester State University, Massachusetts, USA and Chulalongkorn University, Bangkok, Thailand. The four-hour workshop was presented to Master's and Ph.D. students in the Green Chemistry and Sustainability program at Chulalongkorn University in February, 2022. Students were given the opportunity to develop skills in Systems Thinking as they explored the connection between Green Chemistry and the UN Sustainability Goals using examples from recent Green Challenge Awards and a case study about solar panels. Positive feedback from students indicates that the initial goals of the workshop were met.

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2. Anastas, P.T.; Warner, J.C. Green Chemistry: Theory and Practice; Oxford University Press, 1998.
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4. Transforming our world: the 2030 Agenda for Sustainable Development <https://sdgs.un.org/2030agenda> (accessed 2022-11-07).
5. Byrnes, B.H. Environmental Effects of N Fertilizer Use — An Overview. Fertilizer Research. 1990, 26, 209–215. <https://doi.org/10.1007/BF01048758>
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7. Green Chemistry Challenge: 2021 Small Business Award XploSafe LLC <https://www.epa.gov/greenchemistry/green-chemistry-challenge-2021-small-business-award> (accessed 2022-11-01).
8. Thenakis, V. M. Life Cycle Impact Analysis of Cadmium in CdTe PV Production. Renewable and Sustainable Energy Reviews. 2004, 8.4, 303-334.

ideas where they saw overlaps between chemistry and SDGs. They were then asked to read a corporate sustainability statement that focused on sustainable chemistry. Once this was finished, a group discussion about the similarities and differences between Sustainable Chemistry and Green Chemistry was done. Building on the concepts, the students were asked where they thought specifically green/sustainable chemistry could make contributions to the Sustainable Development Goals. Breakout rooms were used for smaller group discussions with debriefs in the main room from team members. The students were introduced to and encouraged to think about equity, empowerment, and economics throughout the process. At this stage, the students began to understand that thinking about green chemistry, sustainable chemistry and the UN SDGs in isolation is not a holistic way to solve the major environmental challenges facing us today. Further presentations by the faculty moderators defined Systems Thinking and the need for integration between Green Chemistry, Sustainable Chemistry and the SDGs using Systems Thinking. Using a 2021 Green Chemistry Challenge Award (7), the moderators illustrated how UN SDGs and Green Chemistry can work together. A comprehensive solar panel case study was provided to allow the students to develop their skills in the application of a systems thinking approach to a common issue. While solar panels are a renewable energy source, using these without a systems thinking approach will lead to unintended consequences. Students worked collaboratively on the guided case study that helped understand that merely using the UN SDGs alone would have not accounted for the manufacturing/use/disposal concerns that photovoltaic solar cells pose (8). Using green chemistry alone would have also not yielded a complete picture on land use, equity etc. However, adopting the systems thinking approach yields a deeper understanding of the problem and the areas for further research development including but not limited to further development of the PV technologies to reduce overall solvent and water use during manufacturing, the need to work with more earth abundant non-toxic materials, assessing land use patterns during install, and encouraging local manufacturing.

Student Response

The authors acknowledge that this is data from one iteration of a small workshop. However, the outcomes



Karnival Kimia Malaysia (K2M) 2022 by IKM Sarawak Branch

Science is Magical - Reaching Out to the Rural Community

Science is magical! Institut Kimia Malaysia (IKM), the professional body for Chemists, initiated Karnival Kimia Malaysia (K2M) – a community project to promote learning of Chemistry among school students. The program was first organized by IKM (Sarawak Branch) in 2011 in Universiti Malaysia Sarawak (UNIMAS). It was then held biennially in 2013, 2015, 2017 and 2019 at different venue, mainly schools. As the program continues, IKM (Sarawak Branch) is motivated to inspire the rural students to take up science and eventually choosing a career in science. Starting from 2017, K2M was held in schools at smaller towns. The program was halted in 2021 due to the MCO. This year, IKM (Sarawak Branch) decided to revive K2M, moving further inland to SK Long Bedian. SK Long Bedian is the only K9 school in Malaysia, located 195 km away from Miri and is only accessible through logging roads.

Long Bedian is a lovely little settlement, hidden away from the busy town, lived by mainly Kayan community. On K2M 2022 (22 September 2022), IKM (Sarawak Branch) spent a day with the students and the community to inspire, to learn together and to care. This is some memorable experience to share.

To organize a program in a town this far away, it is naturally very costly. IKM has not been alone to put together K2M. It was the partnerships with collaborators including Jabatan Pendidikan Negeri Sarawak (JPN), Chemsain Konsultant, Rotary Club of Kuching, Universiti Malaysia Sarawak (UNIMAS), Universiti Teknologi MARA (UiTM), Jabatan Kimia Malaysia (JKM) and Natural Resources and Environment Board (NREB) Sarawak that prevails. As IKM and partners strive to make ways to Long Bedian, there are multiple challenges; one of toughest problem accessing the rural areas in Sarawak is the transport as only 4WDs can trail through the logging roads. Averagely, a vehicle with a capacity of 4 passengers to Long Bedian will cost



RM900/day. With an entourage of 40 pax for 3 days of stay, it could easily cost RM27,000 just for the transport. Sarawak Oil Palm Berhad (SOPB) had supported IKM providing the team with some vehicles and manpower. IKM has more helps from other associates who had heard of the program. Food and beverages companies including Sundrop Fruit Juices Sdn Bhd, Borneo Biscuit Factory Sdn Bhd, Pico Food Industry Sdn Bhd have sponsored refreshment for the programme. Many of us are very familiar and have followed the development of mobile network technology i.e., 3G, 4G and 5G. Do you know that in rural areas like Long Bedian, there is no coverage of mobile network, the internet access is through the satellite broadband system? The telecommunication company, e-Eritel Sdn Bhd, has offered the team with internet access through CONNECTme. YB Dennis Ngau, the State Representative for Telang Usan, although was away for his official duty, YB made sure the team of IKM and partners were accommodated in Long Bedian.

It was all a wonderful day filled with laughter and joy. IKM is grateful for the warm hospitality from the teachers, students and community. The team of IKM demonstrated the wonders of science through experiments and games, which is the main objective of the program. This year, the

Year	Venue
2011	Universiti Malaysia Sarawak
2013	Kolej Datu Patinggi Abang Hj. Abdillah
2015	Universiti Malaysia Sarawak
2017	MRSM Betong
2019	SMK Marudi, Sarawak
2022	SK Long Bedian, Long Bedian

program has extended beyond education emphasizing reaching out to the community. The eye-testing, sponsored by SOPB, was offered to the students as well as the community in Long Bedian. Miri is the nearest town to find to an optician. It is very expensive to commute and it can be a burden to the family and to elderly who are less mobile. Hence, the eye-checking initiative including prescription of spectacles has added value to this K2M, showing care to the community. A total of 60 pairs of glasses were prescribed for students and community with eyesight problems, respectively. Meanwhile, NREB has also taken the initiative to teach the community in making compost; the session was engaging with hands-on experience. The program included a dinuh (traditional glutinous rice balls of Kayan) making session where the women community taught the team of K2M how to make dinuh. Together, the team and the community break into impromptu traditional dance of Kayan.

It was a successful event, made possible with the amazing coordination and hard work of the teachers in SK Long Bedian. IKM and partners sincerely thanked the teachers for giving us an



unforgettable experience in Long Bedian and assurance that, the move of K2M to inspire rural students shall continue. The World Bank documented that Sarawak has the largest proportion of the nation's rural population. In the district of Baram alone, there are a total of 73 rural schools covering an area of some 20,000 km². Some of these schools are very far and are only accessible through logging roads and rivers. Our rural community needs us. It is indeed challenging to reach out to our rural community but with the partnerships between agencies/institutions/private/NGOs, no one is left behind. Mother Teresa said, "Not all of us can do great things, but we can do small things with great love".

*Report by Assoc Prof ChM Dr Sim Siong Fong
Organizing Chairman K2M 2022*

Meeting on Technical Regulation on Formaldehyde Emission Limit from Wood-Based Panel Products (Plywood, Fiberboard and Particleboard)

Institut Kimia Malaysia was represented in a technical regulation meeting on “Formaldehyde Emission Limit” at IDEAS Kuala Lumpur by ChM Dr. Nor Yuziah Mohd Yunus and ChM Li Hui Ling on 29 to 30th August 2022. The meeting was held as prelude towards implementing technical regulation on formaldehyde emission limit from wood-based panel products in 2023.

Malaysia is an important producer of wood based panel (WBP) products with an export value of RM6248.34 million in 2018. In addition Malaysia is also importing these products from other countries with a total value of RM1558.35 million in the same year. Wood based panel products made used of adhesives, in which 80% of the adhesive utilized formaldehyde as monomer. Consequently WBP are a significant source of formaldehyde emission in indoor environments that can cause irritation to eyes, nose, and throat as well as it can cause asthma symptoms especially for children. At present, there is no regulation enforced in Malaysia, on formaldehyde

emission limit for local use and imported products. Hence, the domestic WBP market is flooded with unknown formaldehyde contents. Testing of some domestically sold products in Malaysia indicated level of formaldehyde emission that exceeds the requirements in the standards. Thus, the development formaldehyde emission technical regulation in Malaysia provides avenue for ensuring the safety and health of producers as well as end-users.

In the meeting, a certification option and methodology for testing the formaldehyde content was debated and reviewed. The objective of the regulation would be to provide certification means for imposition of technical regulation of maximum formaldehyde emission limit of ≤ 1.5 mg/L (F**/E1 class) to imported and locally produced wood-based panels products.

Report by
ChM Dr. Nor Yuziah Mohd Yunus



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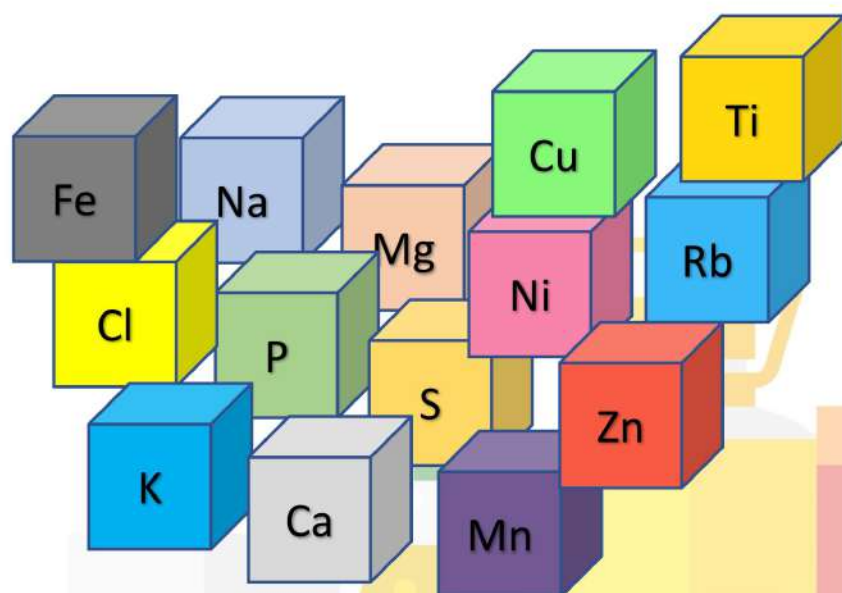
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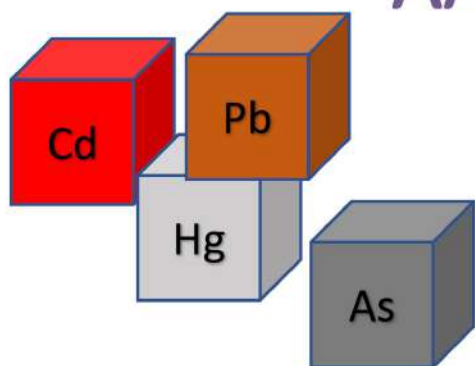
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Those interested to participate as oral or poster presenters are required to register at the **ASIANALYSIS XVI 2023 website** - <https://asiananalysis2023.org>

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Type of Registration	Early Bird (before 10 th July 2023)	Regular (from 10 th July 2023)
IKM Member (Malaysia)	RM1,200	RM1,300
Non IKM Member (Malaysia)	RM1,500	RM1,600
International Participant	USD600	USD700

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- Attendance at all ASIANALYSIS XVI 2023 scientific sessions
- Lunches & Refreshments during ASIANALYSIS XVI 2023
- ASIANALYSIS XVI 2023 Banquet
- All ASIANALYSIS XVI 2023 documents and materials

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PAYMENT METHOD

No registration will be confirmed until payment is received. Payment can be made by **Online Payment / Credit Card / Bank Transfer**.

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ALTERNATIVE PAYMENT METHOD FOR MALAYSIAN PARTICIPANTS FROM GOVERNMENT AGENCIES

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Workshop On Analysis of Rubber Without Using Instrument

ChM Dr. Eng Aik Hwee

Organized by



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MARA



Postgraduate Chemistry Club (PCC), UiTM and Institut Kimia Malaysia (IKM)

Collaborators



UiTM-IMM Student Chapter and Institute of Materials Malaysia (IMM), Plastic & Rubber Institute Malaysia (PRIM), Bruker (M) Sdn Bhd, Kinematic Resources Sdn Bhd

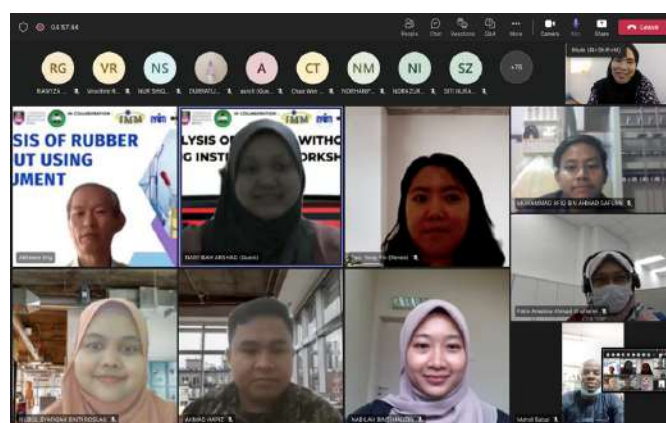
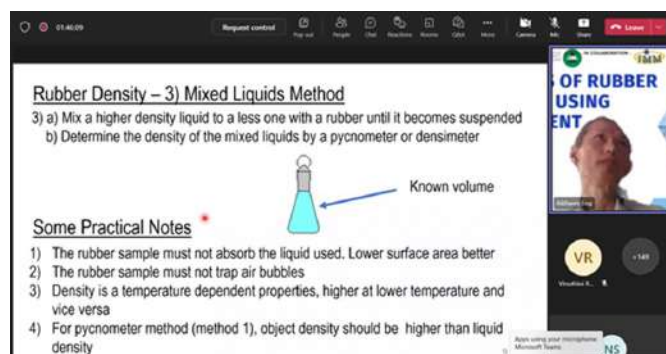
The “Analysis of Rubber Without Using Instrument” was successfully held on 4th October 2022 with 166 participations from the academic and industries (listed in Table 1). The workshop began with a welcoming speech from the Dean of Faculty of Applied Sciences, UiTM, Prof. Dr. Hj. Farida Zuraina and followed by the IKM President, Datuk ChM Dr. Soon Ting Kueh. ChM Dr. Eng started his lecture on good practices and reminded all chemists/analysts about the importance of practicing general laboratory safety rules.

The workshop was conducted with very informative lectures from ChM Dr. Eng that comprises of Rubber measurement of

- Density
- Crosslink density
- Fractionation of polydisperse rubber into different molecular weights
- Intrinsic viscosity, viscosity-average molecular weight

ChM Dr. Eng provided useful tips related to the topics above with detailed explanations, examples and laboratory demonstrations using pre-recorded videos for ensuring a better understanding for the participants. Interactive Q&A sessions were observed for this virtual workshop. Prizes were given to seven winners who answered the questions correctly and the fastest. The prizes were sponsored by Kinematic Resources Sdn Bhd.

Ms. Renee Teo, Bruker Optics Manager, shared a short presentation of FTIR spectroscopy techniques and a demonstration video on FTIR imaging. Ms. Nabilah Hauzin, President of the Postgraduate Chemistry Club, closed the workshop with appreciation notes to the speakers, organizers and sponsors. The online workshop ended at 12:55 pm.



Sample Preparation



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Automated Extraction System



Nitrogen Evaporator



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Shaking Incubator



Sieve Shaker



Glassware Washer

Synthesis



Overhead Stirrers



Filter Reactor



Syringe Pump



Hydrothermal Reactor



Microwave Synthesizer



Planetary Mixer



Rotary Evaporator



Tube Furnace



3rd Karnival Kimia Malaysia (K₂M) 2022 & 9th Professor Goh Lai Yoong Challenge Trophy Perak Inter-School 6th Form Chemistry Quiz by IKM Perak Branch

The 3rd Karnival Kimia Malaysia (K₂M) 2022 and 9th Professor Goh Lai Yoong Challenge Trophy Perak Inter-School 6th Form Chemistry Quiz organized by IKM Perak Branch was held on Saturday, 1st October 2022 at the Faculty of Engineering and Green Technology (FEGT), Universiti Tunku Abdul Rahman (UTAR). The day-long event was officiated by Chief Assistant Director (Language) of the Perak State Education Department, Mr Md Faisal bin Md Yusuf, representing the Director of the Perak State Education Department. Also present to grace the carnival were UTAR Vice President for Student Development and Alumni Relations - Prof Dr Choong Chee Keong, UTAR FEGT Dean - Ir Prof Dr Ng Choon Aun, UTAR FEGT Deputy Dean for Academic Development & Undergraduate Programmes - Ir Ts Dr Leong Kah Hon, UTAR FEGT academics & staff and students.

Themed Chemistry and Sustainable Environment, the primary aim of the 3rd Malaysian Chemistry Carnival 2022 was to create awareness among upper secondary and pre-university school students on the importance of chemistry. It was also aimed at cultivating interest and broadening knowledge in the subject by giving them the opportunity to talk about chemistry and put their skills into practice in a friendly competition. About 100 students and teachers from a total of 17 government and private schools from Perak took part in the event. The main highlight of the carnival was the Professor Goh Lai Yoong Inter-School Sixth Form Chemistry Quiz Competition. The Professor Goh Lai Yoong Inter-School Sixth Form Chemistry Quiz is a biennial event which was inaugurated in the year 2002. This Inter-School Sixth Form Quiz is the brainchild of the former Chairman of IKM

Perak Branch, ChM Hwang Chin Hor, who conceived the idea when Professor Goh Lai Yoong generously donated to the IKM Perak Branch the monetary component of her IKM Gold Medal award (2001) together with her own matching contribution.

Kolej Yayasan UEM won top honors in the Inter-School Chemistry Quiz Competition and walked away with the 9th Professor Goh Lai Yoong Challenge Trophy. The second spot went to Shen Jai High School while SMK Jalan Tasek was third. The winners were awarded trophies and certificates by IKM.

In addition to the quiz competition, the carnival also saw a line-up of insightful talks delivered by ChM Dr Lim Jun Wei from Universiti Teknologi PETRONAS and ChM Mr Sriraam a/l Subramaniam from the Department of Chemistry Malaysia, Perak Branch. The two speakers delivered technical talks, titled "Sustainable Fuels Derived from Biomasses" and "Chemist in Department of Chemistry Malaysia", respectively.

The students also had an opportunity to take part in various exhilarating exhibitions and experiments conducted by chemists from different fields.





Technical Visit to Synthomer Asia Innovation Centre (AIC)

A delegation of 10 IKM members visited the Synthomer Asia Innovation Centre (AIC) at Bandar Indahpura, Kulai Johor, on 11th October 2022. The visit was led by ChM Assoc. Prof. Dr. Nor Yuziah Mohd Yunus from IKM Division of Polymer and Materials Chemistry. The main objective of the visit is to understand the job scope, areas of research and development (R&D) in Synthomer, and the R&D they are currently working on. It was revealed that Synthomer is ready to conduct R&D that supports the reduction of carbon emissions.

All participants were required to perform a self-test for COVID-19 as part of the safety and health requirements prior to the visit. The visit started with a briefing of the company by Dr Zhenli Wei, the Vice President of Innovation at Synthomer AIC where he mentioned that they are in the midst of constructing a two-story building for its eventual expansion, which will be completed next year. In line with the company's motto, "We Always Have Time to Work Safely," the tour began with the site's regulation briefing by Mr. Mohd Yusof bin Keton, the Site Manager. A short history of Synthomer was given. Synthomer was founded in 1863 by George Yule & Co. In 1971, the company merged with an owner of rubber plantations in Malaysia namely the Malaya General Company Limited. It acquired Revertex Chemicals Limited, a company that processes natural rubber latex and manufactured synthetic rubber latices, resins, and emulsions. It eventually changed its name to Synthomer PLC. in 2012. It recently established a new Adhesive Technologies division after acquiring Eastman's Adhesive Resin business in 2022.

The visitors were taken to the Functional Solution Applications Main Laboratory, where polymer is synthesized daily. The types of polymers produced include Plextol, Revacyl, Emultex, and Lipton, covering indoor and outdoor applications such as floor screed, mortar

modification, tile adhesives, grouting, sealant, bitumen modification, and many more. The laboratory provides several tests, such as polymer binder, penetration, adhesion, wood join adhesion, shear resistance, and abrasive scrub test, to evaluate the performance of the polymer produced. Next was the visit to the Functional Solutions Laboratory, which housed polymerization setups ranging from 1L to 10L, which are meant for proof-of-concept research activity. A few related analyses, such as viscosity, total solid content, and particle size, were available in the quality check section. The visitors were also brought to a laboratory designated for hazardous polymers, especially for nitrile latex production, called the Performance Elastomers Lab which has four 10L pressure reactors. The Material Characterizations Laboratory is also available, which offers chromatography and spectroscopy analysis. We witnessed the dipping simulation using the robotic dipping simulator available in the Formulation Science lab. The process lasted for 50 minutes for the double dipping sequences that involved 15 well-known steps among glove manufacturers, starting from former drying, coagulant dipping and drying, gelling, leaching, dipping, beading, curing, post-leaching, and drying. The simulation was done using their newly launched product, SynovousTM PLUS.

The final session of the laboratory tour was a brief presentation by Dr Zhenli Wei on an article recently presented at IRGCE 2022 on the new product, SynovousTM PLUS. Some of the interesting features of SynovousTM PLUS include easy to recycle and reuse, resulting in cost-effective, green, and environmentally friendly products. This product supports Synthomer's effort in reducing carbon emissions. Their continuous effort in reducing carbon emissions through product innovation is highly commendable and appreciated. We are certainly grateful to Synthomer AIC for a chance to visit their R&D facilities and we hope Synthomer AIC will continue to support IKM in any way they can.

*Report by
ChM Kartini Alias
&
ChM Dr Faridah
Hanim Ab Hanan*



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Infographic Competition 2022 Organic Chemistry in Daily Life

ChM Dr Fatimah Salim

Secretary, IKM Division of Organic and Biomolecular Chemistry

'Imagine life without medicine, rubber-based products, scents and flavors, toiletries, cloth and many more. Would you believe that all of these products are organic chemistry related?' These were the phrases used to promote our recent 'Infographic Competition 2022, Organic Chemistry in Daily Life'. This program was organised by the Division of Organic and Biomolecular Chemistry, IKM and the Department of Chemistry, Pusat Asasi Universiti Teknologi MARA (UiTM) with the support of Pusat STEM Negara. The committee are as follows:

Advisor: Datin ChM Dr Zuriati Zakaria (IKM)

Chair : ChM Dr Fatimah Salim (IKM, UiTM)

Registration: Dr. Aisyah Salihah binti Kamarozaman (Asasi UiTM)

Publicity & media: Noorazlina binti Adnan & Syed Abdul Illah Alyahya bin Syed Abd Kadir (Asasi UiTM)

Judging: ChM Dr Rozida Mohd Khalid (IKM) & Dr. Nik Norziehana binti Che Isa (Asasi UiTM)

With aims to polish creativity, diversify the understanding of organic chemistry application in daily life, and structure the judging process, the participants were guided with various fields of organic chemistry including food chemistry, agriculture, medicines, biopolymer, petrochemical, oleochemical, environmental, and others. The participants were encouraged to include at least one of the 17 Sustainable Development Goals (SDG) set up in 2015 by the United Nations General Assembly (UN-GA) in their infographic. The competition was opened to three categories of participants which were Junior (form 4, 5

& STPM/Pre-U), Undergraduate (diploma & degree), and Postgraduate (master & PhD). The entrance for each category was of an individual or team of maximum 3 people. No entrance fee was imposed. The promotional material was disseminated within three months (20 December 2021 – 15 March 2022) to give enough time to the participants. For the Junior category, the information was officially distributed by Pusat STEM Negara to schools in all 13 states and 3

INFOGRAPHIC COMPETITION 2022
ORGANIC CHEMISTRY IN DAILY LIFE
WINNERS
CATEGORY A: JUNIOR

1st PRIZE NAJATUL SARAFINAZ BINTI BASHIR
2nd PRIZE MUHAMMAD FAUZI SYAHMI & ILHAM NUR
3rd PRIZE AIDA YUSRINA BINTI SALEH

CONSOLATION PRIZE

1. Zulkifli Bin Salehudin
2. Paradina Bt Shahrum
3. Anne Hizelda & Anne Hazelin
4. Nur Farin Farhana Mohd Fazli
5. Liew En Yi & Choong Kai Qi
6. Franklin Chai Jun
7. Nurainin Sofea Bt Ismaad
8. Siti Nur Aisyah Binti Jamil
9. Soufe Danieal
10. Nur Athillah Akma Binti Abd Malek & Nur Humairah Binti Kamal
11. Nur Qamarina Hikmah Binti Mohd Zahari
12. Nurain Izzati Binti Azlal
13. Hazeline Bulan Roland Njok & Benesia Nyala Anak Beles
14. Auni Fatinah Binti Nor Hasnan, Haziqah Natrah Binti Wahab & Kirtana Saralin A/P Noel Devan
15. Low Yi Yi & Chan Xiu Zhi
16. Faliya Adeeba, Nur Dayana Sofiyah & Nur Farzana Amani
17. Halimatul Nadhirah Binti Mohd Nasir, Indah Nurani Binti Md Aris & Liyana Batrisyia Binti Azmi
18. Haifaa Afrina, Haifaa Aleeya & Nur Alisya

INFOGRAPHIC COMPETITION 2022
ORGANIC CHEMISTRY IN DAILY LIFE
WINNERS
CATEGORY B: UNDERGRADUATE

1st PRIZE THENG JIN YE & WANG HAO WEI
2nd PRIZE ONG JUN DU
3rd PRIZE LAU THORNG EN

CONSOLATION PRIZE

1. Khairunnisa Gulamnabi
2. Eye Mariel Marius, Ernie Leslie Ak Julian & Lydiana Angela Kinta Ak Jagan
3. Aleeya Waheeda Binti Mohd Muslim, Nurul Hidaayah Binti Roslan & Sitti Harija Binti Adain
4. Syafinaz Binti Abd Malek
5. Balqis Adlina Binti Omar, Lailatun Nazirah Binti Ozair & Nur Atiqah Binti Nasir
6. Siti Khadijah binti Saiman
7. New Wai Mun
8. Siti Suraya binti Mohmad, Nur Atiqah binti Nasir & Lailatun Nazirah binti Ozair
9. Heah Zhi Lyn

Federal Territories through Jabatan Pendidikan Negeri. Promotion to reach the participants from the other two categories (undergraduate and postgraduate) were done through IKM website, social media platforms, and academic networking. Guideline on the format and content of the infographic was provided and the submission was through a Google Drive link. We were overwhelmed with a total of 761 participations where 639, 103, and 21 were from Junior, Undergraduate, and Postgraduate categories, respectively. After the internal screening, 581 posters were selected for the judging process which 50 appointed judges from different backgrounds conducted. Each poster was judged by at least two judges that were assigned according to the field of expertise. A judging rubric was also provided. Of these, a number of the best posters from each category were subjected to the final stage of judging which was conducted by the Organic Division committee members for the section of THREE best posters from each category. The top 3 winners from each category were awarded E-Certificate and Cash

INFOGRAPHIC COMPETITION 2022
ORGANIC CHEMISTRY IN DAILY LIFE
WINNERS
CATEGORY C: POSTGRADUATE

1st PRIZE NUR FATTIMA' AL-ZAHRA' BINTI TUAN MOHAMOOD
2nd PRIZE KOO POOI LING
3rd PRIZE CHU CHEE CHIN

CONSOLATION PRIZE

1. Zulaikha Athirah Binti Alexzman & Zafirah Aida Binti Alexzman
2. Siti Maizatul Ameera Binti Azhar
3. Soo-Ling Bee & Keemi Lim
4. Tan Siew Mei
5. Noorazlina Adnan & Muhammad Sulaiman Mohd Johari
6. Nur Aisyah & Shakila Abdullah
7. Mas Amira Idayu Abdul Razak, Noor Azilah Mohd Kasim & Mohd Nor Faiz Norrahim

Category B 1st
AGRONOMIC POTENTIAL OF PLANT VOCs

What is Plant Volatile Organic Compounds (VOCs)?
Plant VOCs are chemical substances that are emitted by leaves, stem, and root in gaseous form which is composed of carbon. Different types of VOCs act in different functions to improve sustainable defense strategies and productivity of crops.

Functions of VOCs:

- enhancing responsiveness to wounding
- reducing the damage of mites
- enhancing resistance to herbivorous insects
- inhibit the growth of pathogenic bacteria
- as bioherbicide
- inhibit seed germination and root growth

Situations that cause releasing of VOCs:

- Abiotic stresses: Heat stress, High temperature, Salt stress, High light intensity, Drought stress, Cold stress, High humidity, Low CO₂ concentration
- Biotic stresses: Pathogen attack, Pheromone release, Herbivore damage, Mechanical damage

Benefits of VOCs in Agriculture Field:

- attract pollinators
- defend against herbivorous insects and parasites
- serve as signals to neighbour plants
- inhibit the growth of pathogens
- stimulate seed growth
- help plants cope with drought

SDG Goals: Zero Hunger, Responsible Consumption and Production, Life below water, Life on land.

Category A 1st Prize
THE CHEMISTRY OF PINEAPPLE -SEROTONIN-

Pineapple contains tryptophan that can boost our body's production of SEROTONIN. SEROTONIN called as "happy hormones". This chemical is key to improving our mood and provide a feeling of euphoria. If our body has low of serotonin levels, it being linked to memory problems and even depression.

WHERE IS SEROTONIN PRODUCES?
One cup of pineapple contains a robust 10mg of tryptophan, after eating pineapple, tryptophan on pineapple is converted to 5-hydroxytryptophan by the tryptophan hydroxylase enzyme (the rate-limiting step of serotonin synthesis). Second, 5-hydroxytryptophan is converted to serotonin by the aromatic amino acid decarboxylase enzyme.

NAME & CHIRAL CARBON
IUPAC NAME: 5-(2-aminoethyl)-1H-indol-3-ol
COMMON NAME: Serotonin or 5-hydroxytryptamine (5-HT)
CHIRAL CARBON: No chiral carbon presence.

MOLECULAR STRUCTURE
Molecular structure of Serotonin.

FUNCTIONAL GROUP
HYDROXYL, AROMATIC RING, CARBON-CARBON DOUBLE BOND, AMINO.

USAGE OF SEROTONIN
Serotonin is a neurotransmitter, and some also consider it a hormone. Our body uses it to send messages between nerve cells. It appears to play a role in mood, emotions, appetite, and digestion. As the precursor for melatonin, it helps regulate sleep-wake cycles and the body clock.

CLASSES OF ALL CARBON ATOMS OF SEROTONIN

OTHERS FOOD THAT CAN BOOST SEROTONIN
Banana, Avocado, Turkey, Salmon, Yogurt, Nuts, Seeds, Dairy products.

BENEFITS OF SEROTONIN
HELPS ON:
• reduce depression
• regulate anxiety
• heal wounds
• stimulate nausea
• maintain bone health
• sleeping, eating, and digesting.

SUSTAINABLE DEVELOPMENT GOAL 3: GOOD HEALTH AND WELL-BEING
ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES.
• By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

NAIATUL SARAFINAZ BINTI DASHER
P217 0100

Category C 1st Prize
BIO DEGRADABLE CELLULOSIC SMART HYDROGEL

As one of the most promising material today, the existence of cellulose-based hydrogel has brought tremendous positive impact on various fields as it is converted from waste to wealth material. The richness in versatility of hydrogel is because of the capabilities to compatible with so many compound either organic or non-organic due to the presence of ionic charges that are positioned in the crosslinked chains of hydrogel polymeric structure.

WHAT IS HYDROGEL?
- And how does it work -
Hydrogel is a hydrophilic form of soft material with 3D polymeric network colloidal gel that is produced by the crosslinking between polymer chains to store any biological fluids in their structure through available pores. Fluid absorption of this smart material is up to 2000 g/g relative to its dry weight. This is one of the major desired goals of smart hydrogel.

SCHEMATIC ILLUSTRATION OF STIMULI-RESPONSIVE HYDROGEL
Light, pH Value, Ionic Strength, Temperature, Magnetic, Electricity.

SMART HYDROGEL APPLICATIONS IN VARIOUS FIELDS
Vaccine microcapsule, Fertilizer carrier, Soft lenses, Stretchable bioadhesives, Cosmetic face mask, Heavy metals adsorption, Disposal diapers, Tissue engineering scaffold, Drug delivery.

NUR FATTIMA' AL-ZAHARA' BINTI TUAN MOHAMOOD (UNIVERSITI PUTRA MALAYSIA)

Prize, consolation prize winners were given winning E-certificate and all participations were given E-certificate of participation and have been announced on 14 April 2022 through the IKM website and social media platforms. The communication with the participants was carried out through email. Pusat STEM Negara through the Ministry of Education Malaysia also acknowledged this competition as a national level event for Pentaksiran Aktiviti Jasmani, Sukan dan Kokurikulum (PAJSK). We had to admit that the decision for the winners was difficult due to so many good quality posters. However, a decision need to be made.

Azido impurities: Latest Genotoxic Impurities of Concern in Sartan Drugs Containing Tetrazole Ring

Ravikiran Allada^{1,2} and Hong Heng See^{1,*}

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²Department of Analytical Science and Technology Transfer, Novugen Pharma Malaysia) Sdn. Bhd., Shah Alam, Selangor

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The presence of N-nitrosamines in medicinal products has emerged as a public health concern after harmful levels of N-nitrosamine impurities—namely, N-nitrosodimethylamine (NDMA)—were detected in angiotensin II receptor blocker (ARB) drugs containing the tetrazole ring functional group in 2018 [1]. Generally, N-nitrosamines are classified by the ICH M7 (R1) guideline as Class 1 impurities, which are known mutagenic carcinogens and must be maintained at or below specific acceptable limits. The first guidelines for industry on the control of nitrosamine impurities in human drugs were published in September 2020 by the United States Food and Drug Administration (FDA) and were amended in May 2021 [2]. These guidelines provided useful advice for detecting and preventing unacceptable levels of nitrosamine impurities in pharmaceutical products; in addition, they outlined certain conditions that could lead to potential nitrosamine impurities.

In Nov 2020, the European Directorate for the Quality of Medicines & Healthcare (EDQM) officially reported the potential formation of mutagenic azido-derived substances in sartan active pharmaceutical ingredients (APIs) containing a tetrazole ring structure—namely, 5-[4'-(Azidomethyl)-[1,1'-biphenyl]-2-yl]-2H-tetrazole (AZBT) [3]. Multiple batches of irbesartan, losartan and valsartan drug products have been recalled by regulatory authorities worldwide in the past 2 to 3 years due to the presence of AZBT impurities that exceed the acceptable limit. A notification issued by the Co-ordination Group for Mutual Recognition and Decentralized Procedures - Human (CDMH) in April 2021 clearly states that the AZBT impurity tested positive in two independent bacterial mutagenicity (Ames) tests [4]. Hence, the AZBT compound and related azido-compounds need to be maintained at or below the Threshold of Toxicological Concern (TTC) (1.5 mg/daily intake) as outlined in ICH M7 for Class 2 impurities [5]. In order to further mitigate the potential risk of azido formation in sartan drug substances, the EDQM announced that all manufacturers of sartan with tetrazole ring structure who hold a Certificate of Suitability (CEP) are requested to provide a risk assessment regarding this impurity as well as batch data. Unlike nitrosamines, the formation of azido impurities involves the presence of an azide reagent, which is intentionally introduced during the process of sartan synthesis. Although a number of cases of synthesis of sartan have been described in the literature, similar approaches involving the use of a common reaction intermediate—namely, 4'-(bromomethyl)-[1,1'-biphenyl]-2-carbonitrile—have been utilized in order to introduce the tetrazole subunit into the final sartan products [6]. However, residual amounts of this intermediate may react with the existing azide reagent during the subsequent stages of synthesis, resulting in the formation of two impurities—AZBT and 4'-(azidomethyl)-[1,1'-biphenyl]-2-carbonitrile (AZBC). In the case of these impurities,

removal cannot be shown through calculation of the purge factor; confirmatory testing will be required to determine and to justify the actual levels of these impurities in drugs. A number of new validated analytical test methods for AZBC and AZBT have been reported by regulatory agencies such as the EDQM [7], Swissmedic [8] and the Taiwan FDA [9]. Almost all the methods thus far demonstrated apply liquid chromatography-tandem mass spectrometry with multiple reaction monitoring (MRM), which is one of the modes of acquisition used for quantitative analysis using triple quadrupole instruments. This method selectively filters the precursor ion and product ions of the azido impurities, thereby resulting in higher sensitivity and selectivity of the analysis. Based on the TTC and the maximum daily dosage of sartan drugs with tetrazole ring structure, the regulated limits for irbesartan, losartan, valsartan, olmesartan and candesartan are 5, 15, 4.7, 37.5 and 46.9 mg/g, respectively. It is anticipated that the carcinogenicity data of azido impurities based on animal testing on rodents will be released shortly, with the possibility that a more stringent AZBT regulatory limit that is well below the current limit will be enforced following the reporting of the data. In summary, the recent events regarding the discovery of genotoxic impurities in pharmaceutical products intended for human use indicate that sound screening of all the possible impurities and foolproof genotoxicity risk assessments for drugs and drug products are of paramount importance. Without further due, As a proactive measure, the pharma industry should, without further ado, apply the learnings from these events to the development of other drug products, wherever appropriate.

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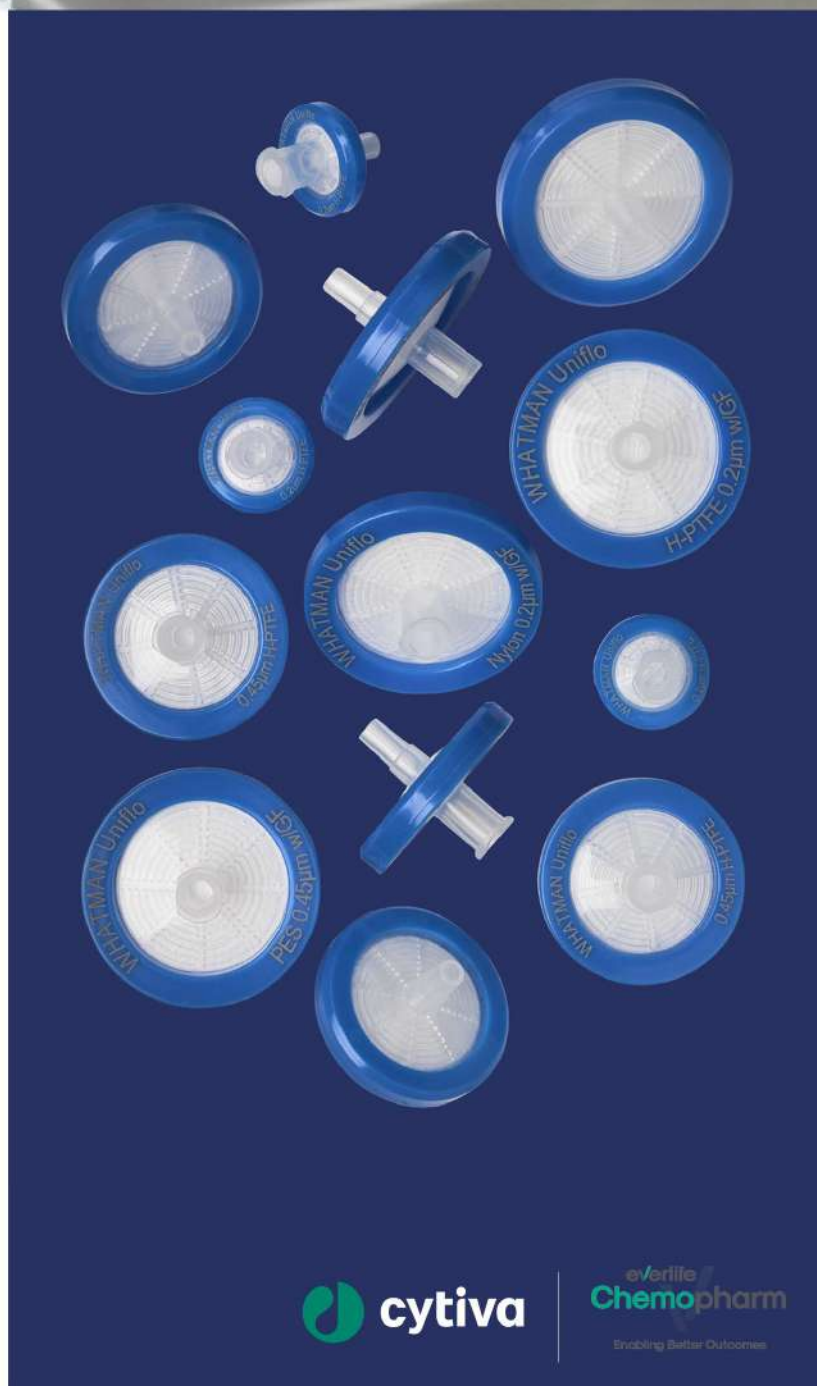
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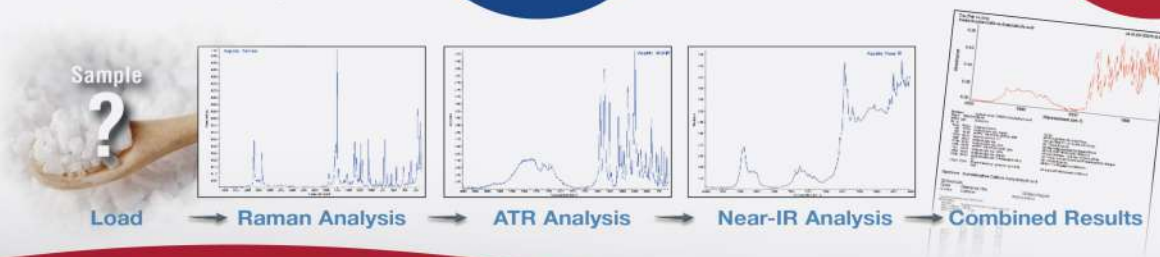
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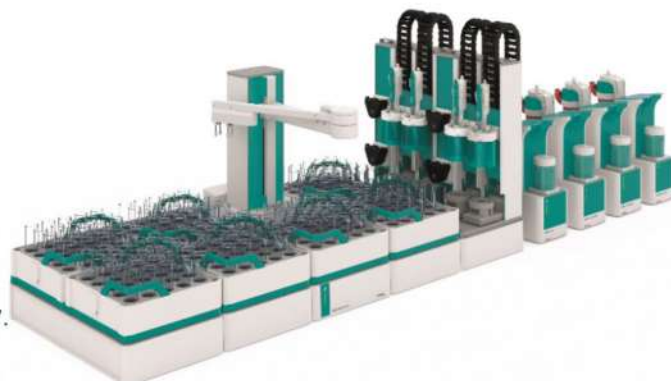
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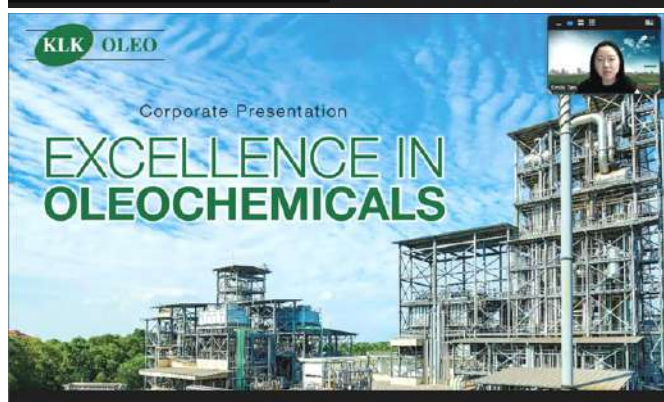


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MYCN Voices – Virtual Karnival Kemahiran & Kerjaya Kimia Malaysia (K4M) 2022

On 12 and 23 November 2022, the Malaysian Young Chemist Network (MYCN) of IKM successfully organized a virtual Karnival Kemahiran & Kerjaya Kimia Malaysia or known as K4M by ChM. Dr Nurul Huda Abd Karim (Chair of K4M). The carnival was co-organized by the American Chemical Society (ACS Malaysia Chapter) and in collaboration with Universiti Kebangsaan Malaysia (UKM). This is one of the flagship events of IKM conducted annually to equip chemistry students and graduates with inspiration, industry expectations, and relevant information from industry players. The event split into two parts, respectively, on 12 and 23 November 2022, with two different themes; 'Impactful Careers in Industry' and 'Making Great First Impressions for a Job Interview.' The virtual event has attracted over 160 participants from various higher education institutions in Malaysia.

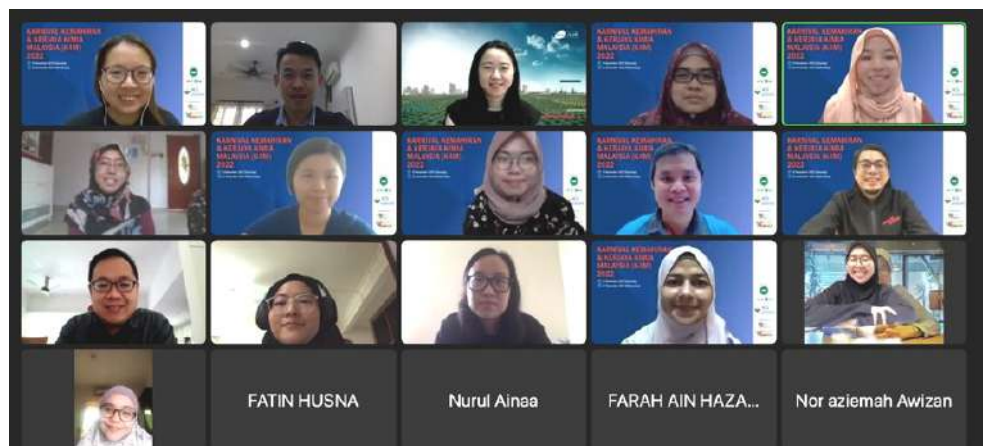
The event was officially launched by the IKM President, Datuk ChM Dr. Soon Ting Kueh, during the first session, followed by welcoming remarks from the Vice Chairman of MYCN, AP ChM. Dr. Yong Soon Kong represent Assoc Prof Dr Juan Joon Ching as Chair of MYCN, and Co-Chair of ACS Malaysia Chapter, ChM. Dr. Lee May Lee. Dr. Nurul Huda Abd Karim (UKM) was the moderator. On 12 November 2022, three IKM registered chemists, i.e., ChM Dr. Tay Feng Huai, ChM. Dr. Muhamad Zamir Othman and ChM. Dr. Emily Tan shared their career journey with the participants. As the company founder, Dr. Tay highlighted his timeline for forming Elite Advance Materials Sdn Bhd. Meanwhile, Dr. Zamir elaborated on how he shifted his career as a university lecturer to the Vice President of Product of Sugarbombs Worldwide Sdn. Bhd. and Infinite Opportunities Sdn. Bhd. Finally, Dr. Emily described her career as the Senior Manager, Business Development at KLK OLEO, Malaysia. The second session of the carnival was held on 23 November 2022. Three representatives from KLK OLEO, Malaysia, including Mr. Jonathan



Mark Vethanayagam, the General Manager of Group HR, Mr. Isaac Ng Wei Hong, the Senior Executive of Talent Engagement, and Ms. Melissa, have shared tips on interviewing for a job. Mr. Isaac conducted a mini-workshop that started with an ice-breaking activity whereby participants were asked to search for six country names based on the word puzzle he projected. Then, Mr. Isaac talked about three aspects of an interview: (a) how to impress the hiring manager, (b) interviews have a flow, and (c) how do I answer these questions. For each aspect, examples and a rule of thumb have been provided by Mr. Isaac. Mr. Jonathan encouraged the participants to be engaged with the interviewer to impress them. Their take-home message was 'be prepared' before attending any interview.

At the end of both carnival sessions, there were lucky draw sessions. Twenty participants were selected randomly via a wheel of names. The lucky participants received a Starbucks eGift Card worth RM20 each. This event was also funded partly through a grant provided by ACS Corporation Associates.

Report by: Nurul Huda Abd Karim, Juan Joon Ching, Lee Loong Chuen, Atiah Ayunni Abdul Ghani, Loh Kee Shyuan, Nadhratun Naim Mobarak, Wan Nur Aini Wan Mokhtar, Goh Choo Ta, Nurul Izzaty Hassan, Nurul Asikin Mijan



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New Licentiates (LMIC)	Muhammad Hazwan Dinhusain Bin Johari L/3296/9835/22	Rodney Robert L/3324/9932/23	Muhammad Hidhir bin Khawory M/6202/7135/15/22
Anna Anak Janin L/3345/9986/23	Muhammad Nizam bin Mohd Saffee L/3335/9965/23	Rozainie binti Md Rosalin L/3330/9958/23	Muhammad Izzat bin Ilmin M/6260/7935/18/22
Azyyati binti Mohd Padzil L/3301/9844/22	'Nur 'Atikah binti Mat Zubir L/3339/9974/23	Shaarany A/P Kunasegran L/3323/9930/23	Muhammad Lutfi bin Abdul Rahman M/6201/8222/18/22
Dayang Nur Shafiqah binti Abang Mudin L/3336/9966/23	Natasha Amira binti Azmi L/3328/9952/23	Siti Khadijah binti Husin L/3312/9886/22	Nor Ashikin binti Mohd Alias M/6204/7560/16/22
Faten Ahada binti Mohd Azli L/3311/9885/22	Neo Soon Huat L/3316/9901/22	Siti Nur Khalidah binti Usri L/3332/9961/23	Norhakimah binti Abdullah M/6263/7505/16/22
Ganaga Suriya A/P Jayabal L/3348/10000/23	Ng Kok Hua L/3342/9979/23	Stefanie Leona Anak Pasang L/3317/9904/22	Nur Fazira Elyana binti Jusoh M/6200/8347/19/22
Ida Madiha binti Yusoff L/3343/9982/23	Ng Yin Zhuang L/3303/9851/22	Suganthi A/P Krishnan L/3331/9960/23	Nurul Iffah binti Khalit M/6205/7558/16/22
Jong Su Jing L/3313/9890/22	Noor Haida binti Sebran L/3305/9858/22	Tan Ngai Paing, Dr. L/3333/9962/23	Nurul Salma binti Ab Ghani M/6253/7621/17/22
Khor Jing Herng L/3319/9921/22	Nor Fazilla Binti Mohd Zaki L/3326/9948/23	Tey Cheng Yi L/3341/9977/23	Ramesh A/L Subramaniam M/6254/8013/18/22
Khor Qiongzhi L/3302/9846/22	Noradriana Binti Zulkifle L/3346/9989/23	Tong Shi Ruo L/3337/9967/23	Sarani A/P Kanesan M/6259/8591/19/22
Lai Jian Yu L/3347/9992/23	Nur 'Adilah binti Abdul Nasir L/3334/9964/23	Yong Yoong Soon, Dr. L/3329/9955/23	Sharifah Shahida binti Hamdan@ Amir M/6257/8269/18/22
Law Shiaw Yee L/3307/9869/22	Nur Afiah Binti Mohammad Yuri L/3318/9918/22	Upgrade to Member (MMIC)	Sii Ing Kiong M/6208/7504/16/22
Lina Amirah Binti Mohd Safrushahar L/3304/9855/22	Nur Afrina binti Abdul Wahab L/3310/9879/22	Adri bin Norisham M/6258/8243/18/22	Siti Haslina binti Ahmad Rusmili M/6255/7178/15/22
Marissa binti Mazlan L/3338/9968/23	Nur Azlina binti Adris L/3314/9895/22	Amira Nadzirah binti Zahari M/6198/7382/16/22	Soon Kean Seng M/6206/8621/19/22
Matavi A/P Manohar L/3295/9832/22	Nur Izzah binti Roslan L/3297/9839/22	Cyrril Marcella Anak Anek M/6250/8692/20/22	Wan Mahirah binti Wan Musa M/6207/8217/18/22
Mohamad Arif bin Abu Bakar L/3291/9820/22	Nur Rasheeqa Aqilah binti Yusman L/3315/9900/22	Deevanesh A/L Gengatharan M/6251/9445/22/22	Upgrade to Fellow (FMIC)
Mohammad Hafizzudin bin Anaffiah L/3298/9840/22	Nur Shahada Binti Suhiman L/3340/9976/23	Ezaida binti Abdollah M/6264/6050/11/22	Mohd Jamil Bin Maah, Prof. Dato' Dr. F/0139/5398/08/22
Mohammad Zulkifli Bin Mohamad Zaid L/3294/9828/22	Nur Syakirah binti Amri L/3300/9842/22	Foong Jia Min M/6262/8775/20/22	Teo Chook Kiong F/0140/5783/10/16/22



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