

A quarterly palm oil newsletter brought to you by
 IChemE Palm Oil Processing Special Interest Group

POPSIG

IChemE

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2019 Q4 POPSIG Newsletter

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Message from POPSIG Chair

Thank you and Happy New Year!

As 2019 ends, it is time to reflect on 2019 and welcome 2020.

This year has been yet again a very successful year for POPSIG with more events, field trips and outreach programs being organized, the launching of university roadshow to inform chemical engineering undergraduates and lecturers about palm oil and careers in this industry, continued the publication of quarterly newsletter, participating in policy/standard response i.e. sit on Working Group to review Malaysian Sustainability Palm Oil (MSPO) Standards, expansion of our membership, and the establishing of POPSIG Bursaries and Project Design Award.

The world around us is changing rapidly including economies, industries and societies. This will also have an impact on the palm oil processing industry. For this industry to progress while remaining globally competitive and relevant, it must adopt and equip itself with the latest technologies and innovations. New technologies that are incorporated into the entire value chain should be the catalyst for modernisation of the whole industry, making it more productive and efficient while enhancing growth and value addition.

It is also important for the palm oil processing industry to capitalise on the technological pillars of the Fourth Industrial Revolution or better known as the IR 4.0. The adoption of IR 4.0 related technologies will not only enhance the overall operational efficiency of the industry but also result in safer operation and sustainable development. I term it as responsible production.

Knowledge sharing will therefore remain very relevant as the need to enable exchange of best practices and sharing experience to all that are interested in the palm oil processing industry. POPSIG has a number of very exciting plans lined up for 2020. Do keep an eye on us as we will be making the various announcements throughout the year.

Ever since its inception in 2015, POPSIG has been one of the successful IChemE's SIGs in terms of total number of events held and board portfolio of its programs. As always, we remain committed in our quest to act as a focal point for all those interested in the process aspects of oil palm processing. We have every intent to promote professional aspects of the palm oil industry, from its traditional areas of milling, refining and oleochemicals down to nutraceuticals, biogas & energy, biomass, biofuels and bio-based chemicals. It may sound like a very big challenge indeed. But, with vision and determination, it can and will happen.

I would personally like to thank all our valued POPSIG members and POPSIG sponsors for their continuous support and dedication - we couldn't have been where we are now without such a tremendous level of endorsement from all of you.

Success of POPSIG will also depend on the contribution of the committee members. Thank you my fellow POPSIG champions for your efforts throughout the year. It's your dedication and passion that make POPSIG one of the most active and great SIGs of IChemE! Best wishes and good fortune to you in 2020.

1st Palm Oil Supply and Demand Outlook Conference (POSDOC)

The 1st Palm Oil Supply and Demand Outlook Conference (POSDOC) was held recently on the 22 October 2019 in Hotel Tenera at Bandar Baru Bangi. The conference was organized by the Council of Palm Oil Producing Countries (CPOPC) in collaboration with the Malaysian Palm Oil Board (MPOB).

The conference brought together stakeholders from the palm oil producing countries i.e. Malaysia, Indonesia, Colombia to explore areas of mutual interest, to share experience and to address problems affecting the industry. The conference was graced by YB Teresa Kok, Minister of Primary Industries Malaysia and HE Mdm. Musdhalifah Machmud, Deputy Minister for Food and Agriculture Indonesia.

The morning session featured more than 10 invited speakers who provided invaluable insights on three key aspects related to the palm oil industry, namely production supply, market demand and price outlooks. In the afternoon session, prominent figures of the industry from Malaysia and Indonesia shared their views, priorities and aspirations in a forum.

For information, the Council of Palm Oil Producing Countries (CPOPC) is an inter-governmental organisation established on November 2015 by Indonesia and Malaysia to strengthen cooperation and collaboration among palm oil producing countries.



Conference Hall



VIPs officiating the conference



Left: Tan Sri Dr. Yusof Basiron

Right: Prof. Chan Eng Seng

IChemE POPSIG University Roadshow at XMUM

The Palm Oil Processing Special Interest Group (POPSIG) University Roadshow is a program initiated by IChemE POPSIG and Malaysian Palm Oil Council (MPOC). This is carried out to support the "Love My Palm Oil" campaign, which is launched by YB Teresa Kok, the Minister of Primary Industries in Malaysia, on 8th Jan 2018.



XMUM IChemE Student Chapter has been scheduled to organize the 4th roadshow here in Xiamen University Malaysia and this event is fully sponsored by IChemE POPSIG and MPOC. The first session on 6th November 2019 consisted of a series of talks delivered by speakers from IChemE, MPOC, Dia-Chemical Sdn. Bhd. and Heriot-Watt University Malaysia. This event attracted a total of 80 participants including students, staffs and speakers mainly in the field of Chemical Engineering.

The event started by a welcoming speech by Prof. Chen Binghui, Dean of the School of Energy and Chemical Engineering, who highlighted the importance of palm oil industry in Malaysia. This is followed by an introduction to IChemE POPSIG given by Mr. Mohan Balasingam, Regional Manager of IChemE. Later, Mr. Mohd Muslimin Hashim, Science and Environment Manager from MPOC, shared a topic related to the truth about palm oil from health and nutrition perspectives.

After a short break with refreshments, Ir. Dr. Chong Mei Fong, Technical Director from Dia-Chemical Sdn. Bhd., discussed on the needs and role of Chemical Engineers in the palm oil industry. This is followed by a short session by Dr. Viknesh Murugappan, who briefed students on continuous professional development by getting chartered with IChemE. After that, there was a panel discussion led by Ir. Kim Kek Seong along with Dr. Tan Khang Wei and Dr. Tan Jian Ping from the programme of Chemical Engineering. Finally, Mr. Mohd Muslimin introduced the Student Ambassador Programme and 22 CME students had volunteered to represent Xiamen University Malaysia

The poster for the POPSIG University Roadshow features the IChemE logo at the top. The main title is "POPSIG University Roadshow". Below the title, the date is "Date: 6th November 2019", the time is "Time: 1330 - 1700", and the venue is "Venue: Block A4 #G01, XMUM".

The poster is divided into two columns: "Speakers" and "Topics".

Speakers:

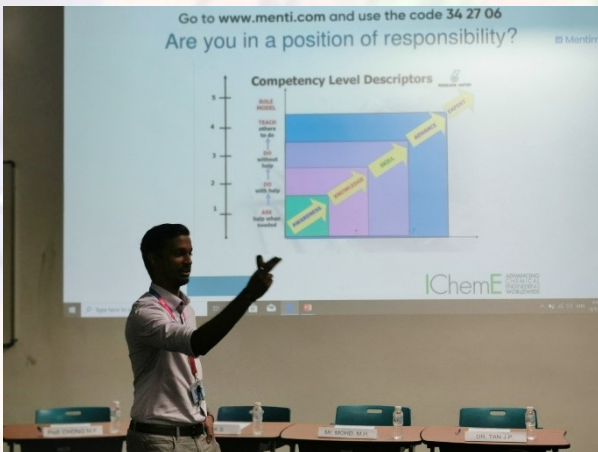
- Prof. Ir. Dr. Chong Mei Fong, EXCO member of POPSIG
- Mr. Mohan Balasingam, Regional Manager of IChemE
- Ir. Hong Wai Onn, Technical Service Manager of Novozyme
- Mr. Mohd Muslimin Bin Hashim, Manager Science & Environment Division

Topics:

- Introduction of IChemE POPSIG and MPOC
- The truth about palm oil
- The role of chemical engineers in the palm oil industry
- Why get chartered?
- Panel discussion

At the bottom of the poster, there are logos for MPOC, IChemE, KUALA OLEO, XMUMChemE, and ARAJ SERVIS. Contact information for the XMUM IChemE Student Chapter is provided: Dr. Xue Yu Lang (012-3068070) and Lai Wang Lam (016-5420942).

Time	Topic of Talks	Speaker
1330 - 1400	Arrival of guests	
1400 - 1410	Welcoming speech	Prof. Chen Binghui Dean School of Energy and Chemical Engineering
1410 - 1420	Introduction of IChemE POPSIG	Mr. Mohan Balasingam Regional Manager of IChemE
1420 - 1450	Introduction of MPOC The truth about palm oil from health and nutrition perspectives	Mr. Mohd Muslimin Hashim MPOC Science and Environment Manager
1450 - 1510	Refreshment	
1510 - 1540	The role of chemical engineers in the palm oil industry	Prof. Ir. Dr. Chong Mei Fong Technical Director of Dia-Chemical Sdn. Bhd.
1540 - 1555	Why get chartered?	Dr. Viknesh Murugappan Assistant Professor of Heriot-Watt University Malaysia
1555 - 1625	Panel discussion	Dr. Tan Khang Wei, Dr. Tan Jian Ping, Ir. Kim Kek Seong, Mr. Mohan Balasingam Prof. Ir. Dr. Chong Mei Fong Mr. Mohd Muslimin Hashim
1625 - 1635	Palm Oil Student Ambassador Programme	Mr. Mohd Muslimin Hashim MPOC Science and Environment Manager
1635 - 1700	Souvenirs presentation and photo session	



A series of talks delivered by Prof. Chen Binghui (Xiamen University Malaysia), Mr. Mohan Balasingam (IChemE), Mr. Mohd Muslimin Hashim (MPOC), Ir. Dr. Chong Mei Fong (Dia-Chemical Sdn. Bhd.), Dr. Viknesh Murugappan (Heriot-Watt University Malaysia) and a panel discussion with Ir. Kim Kek Siong, Dr. Tan Khang Wei and Dr. Tan Jian Ping (CME).



Dr. Ban Zhen Hong, programme coordinator for Chemical Engineering presenting souvenirs to speakers.



A group photo with all speakers and participants.



Volunteers for the Student Ambassador Programme.

On 13th November 2019, students visited KLK-Kepong Oleomas Sdn. Bhd. at Pulau Indah, Port Klang. The plant tour is conducted by Ir. Dr. Calvin Chok Vui Soon, Technology Manager for the oleochemical plant. A total of 38 CME students were accompanied by 3 academic staffs including Dr. Kua Yin Leng, Dr. Yong Wai Fen and Dr. Tan Khang Wei to the site.



A group photo at KLK-Kepong Oleomas Sdn. Bhd.

Double Win for Sime Darby Research and Novozymes Malaysia at IChemE Malaysia Awards 2019

The Awards were held at the Sheraton Imperial Kuala Lumpur Hotel in Kuala Lumpur on Monday 14th October 2019.



Special guests the Royal Patron of IChemE Malaysia, Her Royal Highness Queen of Perak Darul Ridzuan, Tuanku Zara Salim, D.K, D.K.S.A, D.K.A, and YB Teresa Kok, Minister of Primary Industries, attended the ceremony to celebrate excellence in the chemical engineering community in Malaysia.



In her speech YB Teresa Kok emphasized the importance of IR 4.0 to ensure the resilience of the palm oil industry and noted with satisfaction that chemical engineers have been supporting the palm oil industry. She said, "The IChemE has presented support through its investment in the Palm Oil Special Interest Group (POPSIG) since its formation in 2015 especially in relation to palm oil processing. The Ministry is also pleased to note that IChemE has also actively supported the growth of palm oil industry at the university level."



Ir Dr Christina Phang, Chair of the Board of IChemE in Malaysia, said: "Congratulations to all the winners of the IChemE Malaysia Awards 2019. These awards recognise the positive contributions that their research and innovations in chemical engineering are having to solve some of the major challenges we face as a society, not only in Malaysia, but across the world. They are demonstrating that chemical engineering really does matter."



Winner of the Palm Oil Industry Award sponsored by KLK Oleo

L to R Siew Fook Ming (Project Director of KLK Oleo), Dr. Ahmad Jaril Asis (Head, Processing Technology, Sime Darby Research), Nik Suhaimi Mat Hassan (Chief Engineer, Sime Darby Research), Mohammed Faisal Mohammed Yunus (Head, Processing & Engineering, Sime Darby Research), Tan Teik Chin (VP, F&B Business Operations-Asia Pacific, Novozymes Malaysia), Muhammad Iqbal (Associate Key Account Manager, Novozymes Malaysia), Muhammad Zaidy Arnan (Chief Engineer, Sime Darby Research)

Sime Darby Research and Novozymes Malaysia were crowned the winner of the *Palm Oil Industry Award* and the *Sustainability Award* for their joint project *Enzymatic Assisted Extraction of Palm Oil*. These organisations have developed enzymes for use in the palm oil industry that aid the release of oils by degrading the cell walls. This results in the release of more oil and the subsequent increase in the overall oil yield. . It has the potential to generate an additional revenue of RM6.6m per mill per year for Sime Darby Plantation and RM2bn per year for the palm oil industry in Malaysia. This process could also enable a 4% increase in production from the same amount of land, as well as reduce greenhouse gas emissions by 9% per tonne of crude palm oil (CPO) produced

tion for thermal oil heater from an average of 33.5 Sm³ Natural Gas per Mt fatty acid to an average of 32.0 Sm³ Natural Gas per Mt fatty acid which contribute to 4.7 % reduction in unit consumption. With this savings, a projected saving of RM 232,000 per year based on average plant annual throughput could be achieved. This could be translated into a reduction of 406 Mt CO₂ or equivalent to carbon sequestered by 356 acres of U.S. forest in one year. Besides, by implementation of this project, the volume on natural gas consumption can be reduced and overall thermal efficiency has been improved from 87 % to above 90 %.



Winner of the Sustainability Award sponsored by the IChemE Energy Centre

L to R Ir Zainab Kayat (Honorary Treasurer, IChemE in Malaysia), Nik Suhaimi Mat Hassan (Chief Engineer, Sime Darby Research), Dennis Tang (Business Manager, Vegetable Oil Processing, Novozymes Malaysia), Amirul al Hafiz (Engineer, Processing & Engineering, Sime Darby Research), Nik Mohd Farid (Chief Engineer II, Sime Darby Research), Tan Teik Chin (VP, F&B Business Operations-Asia Pacific), Muhammad Zaidy Arnan (Chief Engineer, Sime Darby Research)

IOI Acidchem was Highly Commended in the Palm Oil Industry Award category for their submission *Waste Heat Recovery*. Through heat and energy integration analysis, a complete recovery of heat recovery from thermal oil heater flue gas by air pre-heater has been proven to reduce the unit consump-



Highly Commended Palm Oil Industry Award

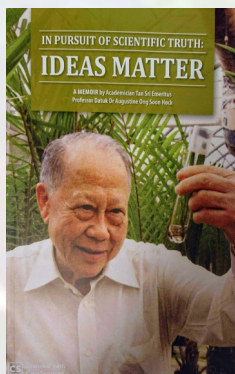
L to R Siew Fook Ming (Project Director of KLK Oleo), Azlan Ahamed (Senior Utilities Engineer, IOI Acidchem), Tan Hian Yiam (Utilities Manager, IOI Acidchem)



Winners of the eight trophies of the IChemE Malaysia Awards 2019

Can Malaysia Sustain Its Palm Oil Industry for Another 100 Years

POPSIG and MIPO (Monash-Industry Palm Oil Education and Research) accepted the invitation of the President of MOSTA (the Malaysian Oil Scientists' and Technologists' Association) Academician Emeritus Prof. Tan Sri Datuk Dr Augustine S.H. Ong to discuss collaboration. We met on 30 October 2019.



This is an autobiography of his life over the last eighty plus years. The title reflects his passion 'for new ideas that no one has proposed and developed. Scientific discovery involves absolute truths.'

Prof. Tan Sri Datuk Dr. Ong has been the Chairman of the International Society for Fat Research (ISF) 1997-1999 and is the President of the Malaysian Oil Scientists' and Technologists' Association, a Senior Fellow of the Academy of Sciences, Malaysia, a Fellow of the Royal Society of Chemistry London, a Fellow of the Third World Academy of Sciences and a Fellow of King's College London. He also served as the Dean in School of Chemical Sciences, Universiti Sains Malaysia (USM) before joining the private sector in Palm Oil Research Institute of Malaysia (PORIM). In 2012, Prof. Tan Sri Datuk Ong was given the Merdeka Award¹ in recognition for his "outstanding contribution to the research and development of the chemistry and technology of palm oil and for his significant role in advocating and promoting Malaysian palm oil industry to the world". To date, Tan Sri Prof. Ong is still actively involved in scientific non-government organisations, including

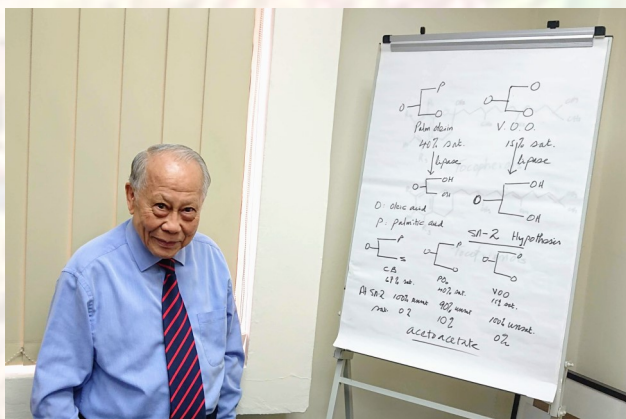
the Malaysian Invention and Design Society (MINDS), which he founded in 1986.

Even before we sat down we could feel the passion Prof. Tan Sri Datuk Ong has for the palm oil industry and he shared with us many exciting aspects of his life and research. In the photo above he is explaining to us why palm olein behaves like virgin olive oil when it comes to cardiovascular health. He is renowned for his discovery of the sn-2 hypothesis.

We discussed upstream to downstream, nutrition and health, processing, effluent, biomass for energy and phytonutrients. It was no surprise that he posed the question "Can Malaysia sustain its palm oil industry for another 100 years?" We agreed to meet again soon to work out what we can do together.



Prof. Tan Sri Datuk Dr Augustine S.H. Ong autographing his book for us. Looking on L to R Prof Dr. Chan Eng Seng, Ir. Qua Kiat Seng, Ir. Hong Wai Onn and Mohan Balasingam.



POPSIG Continued Support Malaysian Palm Oil Certification Council

The Malaysian Sustainability Palm Oil (MSPO) Standards, MS2530:2013 series and the Supply Chain Certification Standard used under the MSPO Certification Scheme is a set of national standards that addresses sustainability and traceability requirements of the oil palm industry in Malaysia.

In line with the guiding principles of the Standard Setting and Review Procedure adopted by the Malaysian Palm Oil Certification Council (MPOCC), the MSPO Standards (MS2530:2013 series and Supply Chain Certification Standard) used under the MSPO certification scheme, is now due for systematic review. This is to ensure continued relevance and effectiveness in meeting the stated sustainability objectives of the Standards.

Being one of the members for standard revision Working Group (WG) for Part 4 : General principles for palm oil mills and Supply Chain Standard, POPSIG continued our active participation in the second WG meeting that held on 14 and 15 November 2019. Together with other WG members, we reviewed and discussed more than two hundred public comments received from 1 August 2019 to 30 September 2019 from stakeholders who are involved directly and indirectly in Malaysian palm oil industry.

As member of IChemE we see this year-long volunteer work is consistent with one of the IChemE Learned Society Committee's priorities i.e. responsible production. POPSIG believe we should take responsibility not only for our products, for customers and employees, but also for the environment and the region. We committed to support MSPO Standards Review to make it a success.



The second Working Group Meeting for MSPO Standards : Part 4 General principles for palm oil mills and Supply Chain Standard was held on 14 – 15 November 2019 at Hotel Tenera, Bangi.

Understanding Palm Oil

Ken Rivers, IChemE President, was in Malaysia to deliver opening keynote address at Hazards Asia Pacific 2019 on 24th September where he spoke on the importance of leadership in process safety.

After the 2 day symposium POPSIG committee members took him to visit a palm oil plantation. He was accompanied by Tom White, VP Regions and Jon Prichard, Chief Executive IChemE. This was the Sime Darby Plantation (SDP) on Carey Island located on the coast 80 km west of Kuala Lumpur.

SDP is a globally integrated plantation company involved in the full spectrum of the palm oil value chain, from upstream to downstream activities, R&D, renewable and agribusiness. It is one of the world's largest oil palm plantation company accounting for 4% of total global production of crude palm oil (CPO). It is one of the founding members of the Roundtable on Sustainable Palm Oil (RSPO) and more than 98% of the Group's CPO production of 2.5 million MT is CSPO (certified sustainable palm oil). This is 20% of the global CSPO.



The visitors observed the harvesting of the fresh fruit bunches (FFB) as well as its collection.



Prichard petted the barn owl that is bred to reduce the population of rats which eat the palm fruit. It is an example of good agricultural practices avoiding the use of pesticides.



L to R Mervin Chew, Ezzaruddin Abdul Rapar, Qua Kiat Seng, Jon Prichard, Ken Rivers, Tom White, Sylvia Kong and Hong Wai Onn.

Ezzaruddin, Manager, Special Projects Upstream explained the formation of the fruit bunch starting with the male inflorescent on the left and the female inflorescent next to it. When he shook the male inflorescent, many weevils fell out. These African weevils do the task of pollination which otherwise depended on the wind.



At the Carey Island Wildlife Sanctuary which is a gene bank of rainforest tree species (148) as well as research and education centre. Carey Island is home for various species of birds and animals. The visitors tried a variety of the edible fruits.



Mervin Chew AMIChemE, Chief Engineer briefed the visitors on SDP sustainability efforts. Chew is the recipient of the IChemE Malaysia 2018 Young Industrialist Award. Looking on is Dr Ahmad Jaril Asis, Head, Processing Technology R&D. The visitors were delighted to hear that Chew has just submitted his chartered application.

Chew said that global population will grow from 7.7 billion to 9.7 billion in 2050 with global oils & fats consumption increasing from 180 million MT to 250 million MT. With other edible oils the world will lose 145 million hectares of forest land by 2050 whilst with oil palm it will be less, 10 -14 million hectares.

Some facts on palm oil from the European Palm Oil Alliance (EPOA) that Chew referred to.

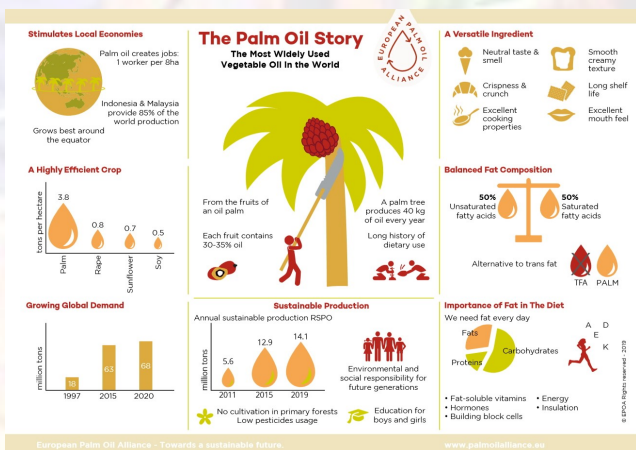
With SDP's GenomeSelect which is a new oil palm breed developed through genomic selection and prediction process, it has the potential to deliver oil yield improvements up to 15% thereby avoiding the need for new land.

SDP has made a zero-burning pledge more than 30 years ago and committed to No-Deforestation. SDP's newly introduced 'Crosscheck' tool allows everyone to trace the supply back to its source. It believes this will help halt deforestation.

Rivers said, "It was an excellent educational trip to the plantation. I came away with a very good understanding of what sustainability looks like in the palm oil sector. As you know Chester (my home town) is the first UK city to go sustainable on palm oil and I now know what that means and what it takes to achieve that standard. The information on the sector, the markets and the global challenges ahead needs to be shared more broadly so that we have informed discussion on this important topic."

During the discussions White asked how POPSIG is contributing to improving the sustainability of palm oil. Qua, founder of POPSIG, replied that the supply chain is very long and involves much processing before the consumer can enjoy the end product. It is during this processing that chemical engineers can contribute to the sustainability. Further the Malaysian Sustainable Palm Oil (MSPO) Standards, MS 2530:2013 is currently being reviewed. Qua (and Prof Chong Mei Fong as alternate) have been appointed to the working group representing POPSIG. Another two POPSIG members viz Hong (chair) and Prof Denny Ng representing Novozymes and ARPOS are also in the working group.

White said, "I was delighted to see for myself the work that is being done in KL to promote sustainable palm oil production and support sustainable plantations. This is exactly type of local engagement and outreach that I hope all our member groups will aspire to do, to address the Global Grand Challenges. What you are doing with POPSIG is inspiring, keep doing what you are doing"



MUM POPSIG University Roadshow

IChemE POPSIG University Roadshow 2019-2020: Love My Palm Oil Campaign has finally made its way to Monash University Malaysia! The highly-interactive roadshow which features prominent speakers from IChemE POPSIG, the Malaysia Palm Oil Council (MPOC), the palm oil industry as well as academia was hosted on the 30th September 2019. Over 100 participants attended the event.

The morning session covered a series of talks by the speakers which gave us an insight of the palm oil industry and the roles of a chemical engineer. The roadshow started off with a welcoming speech by Prof. Chan Eng Seng. Next, Assoc. Prof Wu Ta Yeong gave an insightful introduction to POPSIG. Additionally, Michael Ng, Assistant Manager of MPOC, gave an elaborated speech explaining the truth of palm oil. During the second half of the morning session, Dr. Jaybalan Tamahrajah spoke on the role of chemical engineers in the palm oil industry. The last speaker of the day was Ir. Qua Kiat Seng, where he hosted an interactive session explaining the benefits of being a chartered chemical engineer. The series of talks ended with a panel discussion where real-time responses were given by the speakers to the participant's enquiries.

The afternoon session continued with a field trip to Sime Darby Plantations, Carey Island for 40 participants. Mr Ezzaruddin, Manager of Sime Darby Plantations gave a tour and guided the participants through the plantation while explaining the production process of palm oil from fresh fruit bunches. All-in-all, the roadshow was a success! The participants had fruitful day learning about the importance and benefits of palm oil as well as their role as a chemical engineer. It was definitely an eye-opening experience!



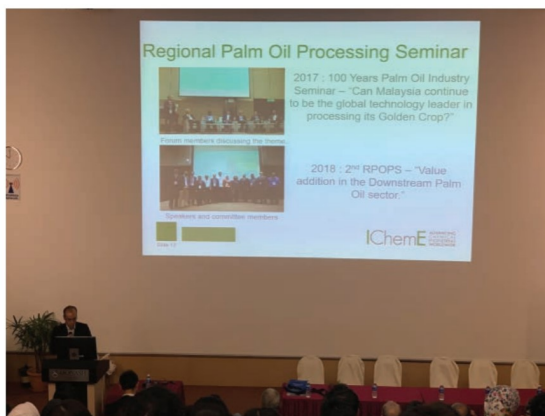
Participants registering for POPSIG University Roadshow 2019-2020 at Monash University



Distinguished guests for the University Roadshow



Welcoming speech by Director of MIPO, Prof. Chan Eng Seng



Introduction of POPSIG by Assoc. Prof Wu Ta Yeong Secretary of POPSIG



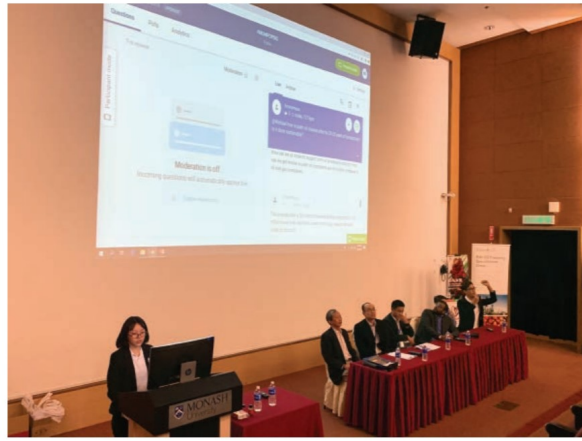
The Truth about Palm Oil by Dr. Michael Ng, Assistant Manager of MPOC



The Role of Chemical Engineers in the Palm Oil Industry by Dr. Jaybalan Tamahrajah, KLK Oleomas



Why Get Chartered? by Ir. Qua Kiat Seng
Malaysia Board Member



Q&A Session through online platform



Group photo session



Departure for Sime Darby Palm Oil Plantation



Introduction to different types of palm oil fruits
by Mr. Ezzarudin Abdul Rapar,



Palm oil fruit collection explanation by Mr. Ezzarudin



The site visit continues to the
Sime Darby Palm Oil
Experience Center



The program ends with a group photo session

Sime Darby Plantation, Carey Island welcomed Another Visit from UTAR

As part of the University Roadshow Program to spread the Love My Palm Oil awareness by IChemE Palm Oil Processing Special Interest Group (POPSIG), the students from Universiti Tunku Abdul Rahman Sungai Long Campus acquired a chance to visit Sime Darby Plantation Located at Carey Island on 21st October 2019 from 10.30am to 1.30pm. The person in charge for the visit, Mr. Ezzaruddin Abdul Rapar had been very informative, fun and patient in making the session a fruitful one. Mr. Ezzaruddin first introduced us about the plantation geometrical structure which was inquired by one of the students who was curious upon the size of the plantation land.

Mr. Ezzaruddin then proceed to passed them knowledge upon palm oil plantation especially how they were reproduced, the species of the tress, the functions and benefits of the oil from the harvested fruits, strategies of sustainable developments applied in palm oil plantation. Mr. Ezaruddin even further explained how and why open burning often happened in palm oil plantation from Indonesia and solutions that Sime Darby practiced in reality to clear doubts on the accusations of open burning towards Sime Darby recently. The students were taught that Sime Darby actually uses Zero Burning Practices that to prevent natural fire, hot spots especially during draught seasons are monitored closely with the aid of satellites and so on. It was indeed an eye opening session for the students.

Next, the students also toured the museum set up in Sime Darby Plantation for a walk back towards history to know more about the origins of palm oil and of the company too. However, the Sustainable Development area is still under construction and hopefully there will be another visit in the future for the students to further understand the practices of Sime Darby in contributing to the sustainable development goals.

As a Malaysian, it is important to understand and defend for our Palm Oil Industry that has been countlessly accused of its cons up till today. It is a great responsibility to educate our children with the right knowledge and information. Once again, thanks to Sime Darby Plantation for the effort in educating the students!



Group Photo



Explaining Session by Mr. Ezzaruddin



Tasting and Smelling the Fruits and Plants



Souvenir Presenting by Dr. Shuit Siew Hong on Behalf of UTAR

Last University Roadshow in 2019: I Love MY Palm Oil Campaign University Roadshow in UNM

The roadshow consists of 2 phases: Industrial Talk (Phase 1) and Industrial Field Trip (Phase 2) held on 4th and 5th December 2019 respectively. This event is a collaboration between POPSIG and UNM IChemE Student Chapter.

PHASE 1: INDUSTRIAL TALK IN UNM

The talk was held on 4th December 2019, 2pm to 5pm in UNM. Speakers from POPSIG, MPOC and Desmet Malaysia visited UNM to give talk for the roadshow. Speakers from POPSIG that attend the event were Mr. Hong Wai Onn, Ir. Qua Kiat Seng, Ms. Liew Sin Lu, Mr. Mohan Balasingam and Dr. Viknesh. En. Muslimin was the representative speaker from MPOC. Lecturers from UNM attended the event, who were Professor Lam Hon Loong and Dr. Chan Yi Jing. The purpose of the talk is for the speakers to give us an overview of the potential of palm oil for now as well as in the future to maintain a sustainable environment.

The talk started with a brief introduction of POPSIG and MPOC made by Dr. Viknesh, representative speaker from POPSIG and En. Muslimin, representative speaker from MPOC. The talk continued with sharing knowledge about palm oil by En. Muslimin to clear up the misunderstandings of students towards palm oil. Ms. Liew Sin Lu explained the role of chemical engineers in palm oil industry, and Mr. Mohan continued to brief the students on the reasons of getting chartered. The talk continued with panel discussion involving all guest speakers, UNM lecturers as well as students attended the event to share ideas on Industry 4.0, actions taken to tackle the banning of palm oil, how should the fresh graduates be prepared for the working industry, and lastly to remind the future generation to be aware of the wide usage of palm oil. Finally, En. Muslimin briefed the students on the palm oil student ambassador programme which sparked interest from the students who attended the event. Students were overwhelmed and inspired by the passion shown by the guest speakers towards palm oil.

The talk ended with a group photo taken by all students, guest speakers and UNM lecturers. In conclusion, it was a fruitful talk. The talk helped the students to get a rough idea on palm oil as well as enriched their knowledge about the roles and actions taken by POPSIG and MPOC in palm oil industry.



Panel discussion by guest speakers and UNM lecturer.



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1. Group photo of all attendees of event.
2. Mr. Muslimin from MPOC giving his speech.
3. Ms. Liew Sin Lu from POPSIG giving her speech.

PHASE 2: FIELD TRIP TO KLK PALM OLEO RAWANG

The visit was held on 5th December 2019 from 12.30 pm to 6.30pm to KLK Palm Oleo Rawang. Mr. Ong Guan Aik, who is the General Manager, hosted this visit for UNM, UNM was extremely grateful to him and their event team. This event was opened to the all UNM Chemical Engineering undergraduates who are interested to gain more knowledge in palm oil field.

KLK Oleo is one of the world’s leading oleochemical producer. A brief introduction of their company and oleochemical industry was given by a member of their senior management to the students upon their arrival. The introduction was mainly on the capacity of oleochemical products being produced by their branches in Malaysia, Netherlands, Switzerland, China and Indonesia as well as the process of converting crude palm oil into oleochemical products. After that, students went for a factory tour guided by the staff. Students get an overview of the overall plant operating system. After the tour, students went back to the lobby for Q&A session and provided with refreshments. In conclusion, the trip ended with good feedback from the students: *“I must say KLK Oleo Palm is one of the most advanced plant in terms of industrial revolution 4.0 that we have visited so far. The people over there are very professional as they know how to present their achievements as well as their current task/project to us during the tour. We also hope that one day students can go into the control panel room to see how things are manipulated and how does the alarm work as well. Lastly, many thanks to Mr. Sam and Mr. Ong for their wonderful speech during the briefing and making the trip successful.”*



Student leader of the trip, Chen Jia Win presenting gifts from UNM to Mr. Ong, General Manager of KLK Palm Oleo Rawang.



Mr. Sam giving his speech to UNM students during the briefing.



Mr. Ong giving his speech to UNM students during the briefing.



UNM students preparing themselves for the briefing.



Group photo of UNM students and staffs from KLK Palm Oleo Rawang.

Journey to Deploying Data Analytics

This talk cum webinar was delivered on Monday 2nd December 2019 at Monash University Malaysia in Bandar Sunway.

The challenges are data is not available, there is too much data, the software is expensive and the tools are complicated.

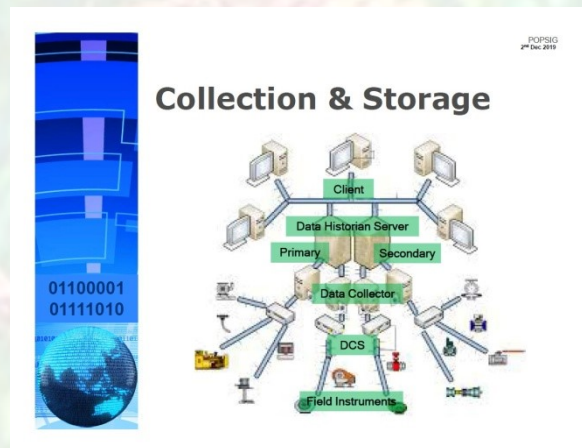
Ir. Mohd Sabri Zakaria is currently the MD and Principal of AZ Sepakat Sdn Bhd. AZ Sepakat Sdn Bhd provides functional safety engineering consulting services specifically in 3D Fire & Gas Mapping, SIL Lifecycle Studies and Alarm Management and HAZOP. It is a primary partner for Seeq Corporation, a software company that provides software with advanced analytics capabilities.

Since he started his 'ideal' perspective has changed to that of a data engineer's perspective where a key is the availability of an SME (Subject Matter Expert) within or outside the organisation to enable the data engineer to create value from data analytics.

Another key is the availability of the 'data historian'. Whilst this is a standard in the oil and gas industry, in the palm oil industry it is only available in the oleochemical industry which use DCS whereas in palm oil refinery which runs on PLC it could be installed and non-existent in the palm oil mill.



Ir Sabri has 35 years experience in the Oil & Gas Industry. He graduated with a BSEE from Purdue University in 1983 and has worked for EPMI (Esso Prod Malaysia Inc.), Schlumberger, PETRONAS Carigali and Talisman. His speciality is in process instrumentation and control as well as data analytics.



Big data analytics has been advocated as bringing new benefits to business. Getting there requires some effort and this is what Ir Sabri shared to help us get started based on his personal experience. He explained data analytics as:

Ir Sabri explained why he choose Seeq Corporation. A reason is that Seeq does not take in customer's data, that stays with the customer. Advanced coding is not required and the user interface is easy to use. Its visualization into flexible trends & graphs is easy to use. He provided several examples of the work he has carried out in Malaysia.

- a) Techniques to analyze data to enhance productivity & business gain;
- b) Data is extracted from various sources, cleansed and then categorised to analyse different behavioural patterns; and
- c) Promote best decisions

In the future he sees data collection as a standard practice and relevant data will be used to create value.

Several questions were posed by the webinar participants before the live audience asked their questions.

A participant asked if data analytics should be included in an undergraduate curriculum and this received an affirmative answer.



Ir Hong Wai Onn, chair of POPSIG discussed how data analytics could be used to predict the oil yield in palm oil processing.



A group photograph with participants at the end of the well prepared talk.

Ir Qua Kiat Seng, founder of POPSIG, in thanking Ir Sabri, noted the huge disparity between the oil and gas industry and the palm oil industry in terms of data analytics. Whilst he heard that the oil and gas industry needed some convincing, he remarked that the palm oil industry would need even stronger convincing. Nevertheless the palm oil industry had the advantage that it could follow the path already laid out by the oil and gas industry to gain competitive advantage in the already very challenged palm oil industry.



Ir Hong Wai Onn, chair of POPSIG thanking Ir Mohd Sabri Zakaria for his enlightening talk and presented him with a certificate of appreciation.

The slides and webinar recording is available to POPSIG members at <https://www.icheme.org/membership/communities/special-interest-groups/palm-oil-processing-sig/webinar-archive/>

POPSIG University Roadshow 2020 Calender

No.	Date	University	Location
1.	13 Jan 2020	UCSI University	Taman Connaught, Kuala Lumpur
2.	19 Feb 2020	University Kebangsaan Malaysia (UKM)	Bangi, Selangor
3.	Mar 2020	Heriot-Watt University Malaysia (HWUM)	Putrajaya, Kuala Lumpur
4.	Apr 2020	University Malaysia Pahang (UMP)	Pekan, Pahang
5.	May 2020	Taylor's University	Subang Jaya, Selangor
6.	June 2020	Pending	-
7.	July 2020	Pending	-
8.	Aug 2020	Curtin University of Technology Sarawak Campus	Miri, Sarawak
9.	Sept 2020	University Teknologi Malaysia (UTM)	Skudai, Johor
10.	Oct 2020	Swinburne of Technology Sarawak	Kuching, Sarawak
11.	3 Nov 2020	SEGi University	Kota Damansara, Selangor
12.	Dec 2020	Pending	-

For more details please visit:

<https://www.icheme.org/membership/communities/special-interest-groups/palm-oil-processing-sig/events/university-roadshow-2019-2020/>

Q1 Diary of Events (2020)

Evening Talk: **Sustainable Palm Oil—Stopping Deforestation and Its Impact on The Environment**

Speaker: Benjamin Loh, WWF-Malaysia

Date: 6 January 2020

Time: 18:00—20:30 (GMT+8)

Location: Seminar Room 6-2-14, Monash University Malaysia, Subang Jaya, Selangor, Malaysia

Evening Talk: **Enzymatic Assisted Extraction of Palm Oil. (Winner of IChemE Palm Oil Award 2019)**

Speaker: Nik Suhaimi Mat Hassan. Sime Darby Research

Date: 10 February 2020

Time: 18:00—20:30 (GMT+8)

Location: Seminar Room 6-2-14, Monash University Malaysia, Subang Jaya, Selangor, Malaysia

Evening Talk: **TBA**

Speaker: Wong Wai Seng, Novozymes Malaysia

Date: March/April 2020

Time: 18:00—20:30 (GMT+8)

Location: Seminar Room 6-2-14, Monash University Malaysia, Subang Jaya, Selangor, Malaysia

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