

15-16  
**JUNE**

**FINAL ANNOUNCEMENT**



# OFIC™ 2021

OILS AND FATS INTERNATIONAL CONGRESS 2021

*Virtual Conference*

## OILS & FATS INDUSTRY: Managing Change Through Transformation



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Malaysian Oil Scientists' and  
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## Message

I am pleased to inform our sponsors, supporters and registered participants that OFIC 2021 under the theme: **Oils & Fats Industry: Managing Change Through Transformation** has made good progress. The programme with eminent speakers has been finalized, and there will be an address by the winner of the **Tan Sri Emeritus Professor Augustine Ong International Special Award**.

In order that OFIC will be accessible to international participants and to Malaysians who are unable to attend physically, it will be conducted virtually. OFIC has been planned for the industry and the research community and MOSTA is most grateful for the excellent support from the industry. However, with OFIC running virtual mode and with a good technical programme, we hope more participants will take advantage of the affordable and convenient arrangement.

Under the difficult circumstances we are operating, I would like to acknowledge the work of the organizing committee. I hope more members of the industry and research community will join us. I look forward to welcome all of you at this historic event.

Yours Truly,

Academician Emeritus Prof. Tan Sri Datuk Dr. Augustine S H Ong  
President, MOSTA

## About OFIC 2021



Oils and Fats international Congress series was launched by MOSTA in 1994 concurrently with an exhibition of latest available technology for the oils and fats industry. These events will focus on the major challenges faced by the oils and fats industry for possible solutions. The coverage of these issues is reflected in the synopses of the five modules.

## Who Should Attend OFIC 2021

OFIC 2021 is designed for those involved in the oils and fats industry including the following:

- Industry Captains and CEOs
- Planters and Mill Engineers
- Refiners and Processors of Consumer Goods
- Oleochemical and Biofuel Producers
- Quality Assurance Personnel and Process Engineers
- Academics and R & D Personnel
- Scientists and Technologists
- Traders, Analysts, Investors and Financiers
- Economists and Policy Makers
- Environmental and Social NGOs
- Government Agencies

## **TUESDAY, 15 JUNE 2021 (Day 1)**

0845 - 0900	Virtual Platform Open for Logging On
0900 - 0920	<b>Welcome Address</b> Academician Emeritus Prof. Tan Sri Datuk Dr. Augustine S. H. Ong <i>President, MOSTA</i>
0920 - 0950	<b>Official Opening of OFIC 2021</b> YB Dato' Dr Mohd Khairuddin Aman Razali <i>Minister of Plantation Industries and Commodities Malaysia</i>
Chairperson :	Datuk Dr Choo Yuen May, FMOSTA <i>Council Member, MOSTA</i>
0950 - 1050	<b>KEYNOTE ADDRESS: Development of Green Synthetic Methods</b> Professor Loh Teck Peng, <i>Nanyang Technological University, Singapore</i>
1050 - 1150	<b>PLENARY LECTURE: Managing Change Through Transformation - FGV's Experience</b> Tuan Syed Mahdhar Syed Hussain, <i>FGV Holdings Berhad, Malaysia</i>
1150 - 1230	Q & A

## **MODULE 1: SUSTAINABILITY & CLIMATE CHANGE**

Chairperson :	Mr MR Chandran, KMN, FMOSTA <i>Council Member, MOSTA</i>
1400 - 1440	<b>The 18th Tan Sri Dato' Seri B. Bek-Nielsen Foundation Lecture How Integrating Resource Management in the Palm Oil Industry Can Shape Global Consensus on the Sustainability of the Humble Oil Palm</b> Dr Gary W. Theseira, <i>Forest Research Institute Malaysia (FRIM), Malaysia</i>
1440 - 1510	<b>Climate Change Adaptation Through R&amp;D for Edible Oil Production</b> Prof Dr Alain Rival, <i>Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), Jakarta, Indonesia</i>

1510 - 1540	<b>The Future of Sourcing Sustainable Commodities – Outlook &amp; Predictions</b> Mr Mohd Haris Mohd Arshad, <i>Sime Darby Oils Singapore Ltd</i>
1540 – 1610	<b>Sustainability and Innovation: Major Techno Social Challenges for the Oil Palm Industry in a Rapidly Changing Global Situation</b> Prof Dr Denis J Murphy, <i>University of South Wales, United Kingdom</i>
1610 – 1640	Q&A

## WEDNESDAY, 16 JUNE 2021 (Day 2)

### MODULE 2 : INNOVATION & TECHNOLOGICAL CHANGE

<b>Chairperson :</b>	<b>Dr Harikrishna Kulaveerasingam, FASc</b> <i>Chief Research &amp; Development Officer, Sime Darby Plantations, Malaysia</i>
0900 - 0940	<b>The 5th Raja Alias Foundation Lecture</b> <b>CRISPR Gene-Editing as a Modern Breeding Technology: How this is replacing Gene-Modification of Oil Crops?</b> Prof Dr Kan Wang, <i>Iowa State University, Ames, Iowa, United States of America</i>
0940 – 1010	<b>Real Time Forest Sustainability Monitoring of Palm Growing Regions</b> Dr Jason Schatz, <i>Descartes Lab Inc, United States of America</i>
1010 – 1040	<b>The 5th Tun Dr Lim Keng Yaik Foundation Lecture</b> <b>The Future of Palm/Agriculture 4.0: A Field Deployment Experience</b> Mr Chia Chai Chua, <i>Olam International Ltd, Singapore</i>
1040 – 1120	<b>Use of Green Technology for Mitigating 3-MCPD Esters and Enhancing Oil Extraction &amp; Biodiesel Production</b> Mr Martin Rushworth, <i>Novozymes Malaysia Sdn Bhd, Malaysia</i>
1120 – 1150	<b>Blockchain Powered Digital Pipe for Traceability &amp; Digitalization of Sustainable Supply Chains</b> Mr U. R. Unnithan, <i>DIBIZ Pte Ltd, Singapore</i>
1150 – 1230	Q & A

### MODULE 3: CONSUMER-DRIVEN CHANGE

<b>Chairperson:</b>	<b>Dr Goh Swee Hock, Council Member, MOSTA</b>
1400 – 1430	<b>Specific and Regiospecificity in Fat Nutrition: More Consumer Choices of Natural and Modified Oils</b> Dr Mahinda Abeywardena, <i>CSIRO, Adelaide, Australia</i>

1430 – 1500 **Challenges of the Oleochemical Industry: What to Expect**  
Dr Marc Kellens & Mr Dario Altera, *Desmet Ballestra Group, Belgium*

1500 - 1520 Q&A

### **Tan Sri Emeritus Professor Augustine Ong International Special Award**

**Chairperson:** **Academician Emeritus Prof Tan Sri Dato' Dr Syed Jalaluddin Syed Salim**

1520 – 1535 Citation of the Winner of Tan Sri Emeritus Professor Augustine Ong International Special Award

1535 – 1620 Presentation by Mr Chew Poh Soon  
Winner of 2021 Tan Sri Emeritus Professor Augustine Ong International Special Award

1620 – 1800

### **EVENING FORUM**

### **Recovery, Resilience, and Responsibility of the Oil Palm Industry in the Post COVID-19 Era**

**Moderator:** **Mr MR Chandran**, KMN, FMOSTA

<b>Panel Members:</b>	<b>Dr Gary W Theseira</b> <i>Senior Research Officer/ Technical Consultant, FRIM Malaysia</i>	Policy Directives to Reduce Industry GHG Emissions and Addressing Escalating Trade Tensions
	<b>Mr. U. R. Unnithan</b> <i>Founder &amp; CEO, DIBIZ Pte Ltd, Singapore</i>	Palm Oil Quality, Food Safety and Bioenergy
	<b>Dr Kalanithi Nesaretnam</b> <i>Co-Founder Climate Governance Malaysia</i>	Consumer Concerns and Perceptions Regarding Health and Environmental Effects
	<b>Ms Luanne Sieh</b> <i>Head of Group Sustainability CIMB Bank, Malaysia</i>	Climate-smart Financing Sustainable Oil Palm
	<b>Dr Harikrishna K</b> <i>Chief Research &amp; Development Officer, Sime Darby Plantations Malaysia</i>	Technological Innovations to Transform the Oil Palm Industry
	<b>Dr Ahmad Parveez</b> <i>Director General, Malaysian Palm Oil Board (MPOB)</i>	Genome Editing: Molecular Scissors for Oil Palm Development
	<b>Prof Denis Murphy</b> <i>University of South Wales United Kingdom</i>	Palm Oil Industry in the New Post-Covid 19 World

1800 - 1815

### **CLOSING REMARKS**

**Y.M. Tunku Dr Alina Bte Raja Muhammad Alias**  
*Chairperson, OFIC 2021 Organising Committee*



## Module 1: sustainability & climate change

**Chairperson: M R Chandran**, KMN, FMOSTA, FISP

The Intergovernmental Panel on Climate Change (IPCC), the world body for assessing the state of scientific knowledge related to climate change, its impacts and potential future risks, and possible response options released a report that suggests that keeping global warming to well below 2°C can be achieved only by reducing greenhouse gas emissions from all sectors including land and food.

The report highlights that climate change is affecting all four pillars of food security: availability (yield and production), access (prices and ability to obtain food), utilization (nutrition and cooking), and stability (disruptions to availability). The report also states: *“Food security will be increasingly affected by future climate change through yield declines, especially in the tropics, increased prices, reduced nutrient quality, and supply chain disruptions”*.

There are ways to manage risks and reduce vulnerabilities in land and the food system. Risk management can enhance communities’ resilience to extreme events, which has an impact on food systems. This can be the result of dietary changes or ensuring a variety of crops to prevent further land degradation and increase resilience to extreme or varying weather.

The oils and fats industry has a rich tradition of embracing technology to improve crop production but is under increasing global pressure to produce even more on less land within a sustainable framework. Sustainability drivers include best agricultural practices, promotion of human rights and application of technological advances for improved productivity. It is incumbent upon the oils and fats sector to play a transformative role in achieving the Sustainable Development Goals (SDGs), the blueprint for a better and more sustainable future for all under the 2030 Agenda for Sustainable Development.

The SDGs address the global challenges faced by mankind such as poverty, inequality, climate change, environmental degradation, prosperity, peace and justice. These initiatives are not dependent on each other, but are in fact mutually supportive and ultimately convergent. To quote Sir Jonathon Porritt of *Forum for the Future*: *“Embracing the SDGs means taking an integrated view, seeking to optimise outcomes across all the goals rather than cherry-picking any one particular goal at the expense of others”*.

However, environmental and sustainability issues, while important and relevant, are often distorted for commercial advantage, by interested parties. Therefore, it is imperative to continue to carry out high caliber research and raise our voices in support of empirical rather than emotional hypothesis.

The strategic direction for the oils and fats industry is clear but the roadmap to navigate it is challenging and requires the concept of responsibility in the entire supply chain. The current criticisms faced by the industry present a window of opportunity for innovation and transformation and to demonstrate we are part of the solution and not the problem.



## Module 2: Innovation & Technological Change

**Chairperson: Dr Harikrishna Kulaveerasingam, FASc**

The recent and unprecedented COVID-19 pandemic has highlighted the great risks to Industries that rely on a labour-intensive business model that also requires a great deal of close human interaction. Businesses that are able to operate digitally and semi-autonomously are at a competitive advantage under such circumstances. All of these disruptions to standard business practises has made innovation an essential component for businesses to remain relevant and competitive.

Opportunities to leverage on improvements in technologies such as improved computational power, imaging technology, digital connectivity including IOT, robotics, and miniaturisation offer a potential means to develop innovation solutions to existing problems. Costs of such tools have declined to an extent that commercial deployment of such platforms in a cost sensitive industry such as plantation agriculture has become feasible.

Given this, what will the future of farming look like? Can the evolving needs of the consumer be met? Besides better quality of food, consumers also demand that food is produced sustainably and ethically. This session will explore the various innovations that have been deployed at scale to address many of these Plantation issues. For example, previously it has not been possible to provide traceability within the Plantation supply chain, that is compounded by the complexity of suppliers comprising of both large corporate players and small holder operations.

However, Blockchain based approaches have made progress towards addressing these concerns by deploying tools that provide producers as well as buyers with the necessary supply chain traceability. Such supply chain management systems also allow for fair and transparent payments to small holders for their crop to be made, thus addressing another ethical concern of consumers.

The use of imaging platforms from satellites or drones in combination with various sensors, data analytics and artificial intelligence potentially allows precision agriculture tools to be developed and deployed at a plantation scale. This also addresses the “no deforestation policy” of many companies, where rainforest loss can be viewed and quantified in real time thus providing the consumer with the means to make informed purchasing decisions.

Palm oil milling has remained relatively unchanged for the past forty years. What is in store for milling in the future? Enzymes have been used as a “greener” more environmentally friendly alternative to chemical extraction and have been commercially deployed successfully in industries such as paper and pulp. Enzymatic extraction of oil palm mesocarp can potentially increase oil extraction rates and reduce waste.

In addition, green platform technology can be deployed in refineries to produce oils low in 3-MCPD and free of other undesirable contaminants. The impact of the commercial deployment of these technology platforms on the future of oil palm plantations will be presented and discussed during this session.



## Module 3: Consumer-Driven Change

**Chairperson: Dr Goh Swee Hock**

The traditional growth in the oils and fats industry built on advantages of resources (energy, soil, water and labour) and suitable climate will need to be challenged by genomic and AI technologies. New developments in biotechnology especially gene editing and supported by converging technologies (advanced chips, robotics, quantum battery, etc.) provide much hope for agriculture especially tree crops where disruptive transformation is needed due to lack of manpower and the increasing pressure to produce more sustainable foods. Such technological advances provided means that demanding consumer needs to be better met. New consumer needs arise from awareness of personalized nutrition and precision medicine apart from demands for better quality and healthier foods which have to be sustainably and ethically produced.

Consumers for free choice and preferential products will likely need to pay more in view of the changing political trend in free trade apart from the present overt use of protectionist barriers and tariffs. On the other hand, the consumer benefits from competitive business trends as well as the cost-cutting efficiencies from implementation of relevant available technologies. The Malaysian palm oil industry however, suffers from many obvious problems: too much competition for exporting similar commodity products, slow adoption of automation and mechanization due to the lack of supporting industries, inefficient small-holders, need for more entrepreneurial businesses for higher-valued end-products and services and inability to attract a new generation of workers. The industry will evolve and progress as there is no other more sustainable crop than palm that can provide cost-effective, versatile and functional oils to meet the needs of the increasing human populations. A circular agriculture for palm is now possible with available technologies and the EU campaign against the oil palm is misguided as the bigger problem facing humanity, apart from stupidity, is global warming and accompanying deforestation fires.

### **CONSUMER PERCEPTIONS AND DEMAND**

Oil crops have intrinsic properties endowed by nature and the oil palm excels in many aspects – nutritious, high oxidative stability, high yields, least land use among oil crops, provision of solid and liquid oils, provision of lipid-soluble vitamins and also the lesser exploited other biomaterials/bioenergy. Whereas palm has remained the leader in palmitic and lauric fats, the industry been complacent on yield advantage, as most temperate oil crops have succeeded in incremental yield improvements and in markedly reducing polyunsaturation (and trans fats) to have GM crops driven by consumer demands or perceptions. Consumers can unfortunately be misled by political or trade motivations as in the decades-old campaign against saturated fats due to false “cherry-picked” statistical data. Fortunately, it is now known that most vegetable oils like palm are beta-unsaturated, while the saturated fats are also available for young growing consumers. With an understanding of regiospecificity of fatty acids in triglycerides of oils and fats during digestion, absorption and metabolism, consumers can now enjoy designer structured fats for their needs and wants. Meanwhile CRISPR-cas9 gene-editing has shown tremendous promise to advance agriculture and to put an end to the potential horrors of GM crops, e.g. terminator genes, glyphosate-induced cancer from weedicide-resistant GM crop, consumption of introduced viral genes, etc.

The traditional business growth continues with solving consumer perceptions and demands on environment, social and governance, e.g. on-going approach to 100% MSPO sustainability while targeting for lower-cost oils with higher yields by replanting with improved breeding materials. Genomics research has been in the forefront with gene-editing technologies to provide higher yields and other desired oil characteristics. EU consumer demands for limits on 3-MCPDE and GE have led to successful mitigation procedures and to provide a new stream of recovered oils for creative uses in feed, oleochemicals or biofuels for power and aviation. Overall advances in transformative technologies, in particular genomics-technology, will provide solutions to most consumer needs and indulgences, especially for the growing middle classes of the world.





## Evening Forum: Recovery, Resilience, and Responsibility of the Palm Oil Industry in the Post Covid-19 Era

**Moderator: Mr MR Chandran, KMN, FMOSTA**

Energy is the backbone of the global economy and is powered largely by fossil fuels which are the primary driver of climate change. Vegetable oil biofuels are increasingly used as a renewable alternative to fossil fuels. While considered to be greener than fossil fuels, they also contribute to greenhouse gas emissions. Increasingly, world policies are premised on a broad framework for resource efficiency and climate change policy. It is essential for the oil palm industry to transition to a resource-efficient, green, and competitive low-carbon economy to sustain socio-economic progress.

Quality control and quality assurance are important at every step of the food supply chain. The food sector is increasingly espousing a more holistic approach encompassing not just health, but also environmental stewardship and traceability. The safety, quality and authenticity of oils and fats should be grounded on standards that facilitate safe global trade, benefiting both exporting and importing countries. As the world's most traded vegetable oil, of which 85% enters the food sector, it is imperative that the highest quality and food safety standards are achieved for palm oil. A high priority for the oil and fats industry is the reduction of 3-MCPD esters (3-MCPDE). The oil palm industry should push for regulation on the safety limit of 3-MCPDE for palm oil to be on par with other oils.

Oil palm is the most productive of all oil-bearing crops. Oil palm crop failure can have catastrophic consequences on food security as there is no viable replacement for palm oil. It is thus essential to ensure that oil palm is resilient to climate change, i.e. it must become climate-smart. Climate-smart agriculture is defined by the Food and Agriculture Organisation as *"an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate."* Initiatives for the crop would include breeding oil palm that will thrive in different climatic conditions, increasing sustainability and productivity and mitigating greenhouse gas emissions. Financial institutions such as banks can play a pertinent role by imposing Environmental, Social and Governance (ESG) conditions to the financial services they provide to companies involved in palm oil business. Innovation is the life blood of the oil palm industry and is essential for ensuring its competitiveness in the face of constantly evolving challenges and consumer demands and perceptions. The Fourth Industrial Revolution which is a convergence of physical, digital and biological spheres offers unprecedented opportunities for the oil palm industry to enhance its performance. While technology is dynamic and progressive, it is not a silver bullet and must be complemented with better governance, greater enforcement and political will.

The increasing global demand for palm oil underscores the importance of producing high-yielding oil palms with improved traits. While oil palm breeding has significantly contributed to crop improvement, the long breeding cycle of the oil palm makes this an arduous and long-term effort. Genetic transformation techniques can be used to overcome the common barriers to conventional genetic improvement. Advancements in genome editing technologies, especially CRISPR-Cas9 have triggered a revolution in biology, and promise to change the pace and course of agricultural research. CRISPR-Cas9 offers new opportunities to develop new plant varieties, with deletion of detrimental traits or addition of important characters. It is precise, faster, cheaper and permits highly targeted modification compared to other genome editing methods, and offers great promise for the accelerated improvement of oil palm. A high quality genome sequence is a prerequisite for genome editing. The release of the oil palm genome sequence by MPOB has facilitated genome editing efforts for the oil palm.

COVID-19 has exerted unprecedented stress on global value-chains such as the plantation sector already burdened by various environmental and social issues. The world's supply chains have become substantially more interconnected with globalisation. The oil palm sector must build resilience to emerge stronger and better adapted for future challenges. The new normal should be predicated on **Recovery, Resilience, and Responsibility**.

# Delegate Registration Form

Please complete in Block letters/attach Business Card. This form may be duplicated for additional delegates.

## 1. DELEGATE'S INFORMATION

Full Name : \_\_\_\_\_ MOSTA Membership No: \_\_\_\_\_  
(Please underline last name) (if any)

Title : \_\_\_\_\_ Designation : \_\_\_\_\_  
(Mr/Ms/Dr/Prof/others)

Organisation : \_\_\_\_\_

Address : \_\_\_\_\_

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## 2. REGISTRATION FEE

	Amount (RM/USD)
Fee for 2-Day Virtual Conference	RM1,000 (USD250)

Registration Fee for delegate covers the following:

- OFIC 2021 Materials and Documents
- Power Points of Speakers

## 3. MODE OF PAYMENT Please tick (✓):

- Cheque / Banker's Draft made payable to "MOSTA"  
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(Contact Person: Ms. Michelle Lim)

### REGISTRATION CONDITIONS

1. Use a separate form for each delegate. Photocopies of this Form can also be used. Payments can be combined for more than one delegate when forms are sent in together.
2. Registration is not official and complete until full payment is received by the OFIC 2021 Secretariat. Confirmation of registration will be issued upon receipt of full payment.

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**OFIC™ 2022**  
OILS AND FATS INTERNATIONAL CONGRESS 2022

18-19  
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PRELIMINARY ANNOUNCEMENT



# OPTIMISING THE POTENTIAL of Oil Palm and Its Products

MODULE 1: ECONOMICS & MARKETING  
MODULE 2: MECHANISATION & DIGITALIZATION  
MODULE 3: FOOD APPLICATIONS  
MODULE 4: NON-FOOD APPLICATIONS  
MODULE 5: PHYTONUTRIENTS

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