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A WARM WELCOME TO PROFESSOR DATUK IR TS DR SITI HAMISAH BINTI TAPSIR TO UCSI UNIVERSITY

Professor Datuk Ir Ts Dr Siti Hamisah Binti Tapsir
P.J.N, D.P.M.S, P.Eng, Ph.D (Eng), Hon. FAFEO, P.Tech (Eng)
Vice-Chancellor of UCSI University and UCSI Group Chief Executive Officer

The **Research@UCSI Newsletter Editorial Board** would like to welcome Professor Datuk Ir Ts Dr Siti Hamisah Binti Tapsir, who joined us as the Vice-Chancellor of UCSI University and UCSI Group Chief Executive Officer on 1st October, 2021.

Professor Datuk Dr Siti Hamisah had been a civil servant with over 33 years in the Government. She has held various portfolios under six different ministers, most notably in higher education and science, technology and innovation. Datuk Dr Siti Hamisah played an instrumental role in overseeing the rollout of the National Immunization Programme as the Secretary-General of the Ministry of Science, Technology and Innovation(MOSTI), which was mandated to implement the immunization programme roll-out in collaboration with the Ministry of Health (MOH). Under her leadership, the national vaccination programme exceeded expectations by inoculating at least 80% of the adult population in Malaysia by September 2021.

Professor Datuk Hamisah is a civil engineer and is passionate that research should address societal needs and contribute technological solutions to sustain global and planetary health and well-being.

We are confident that under Professor Datuk Hamisah's leadership, UCSI University will achieve great accolades worldwide, and attain its goal of being the leader and preferred partner in higher education.

Content

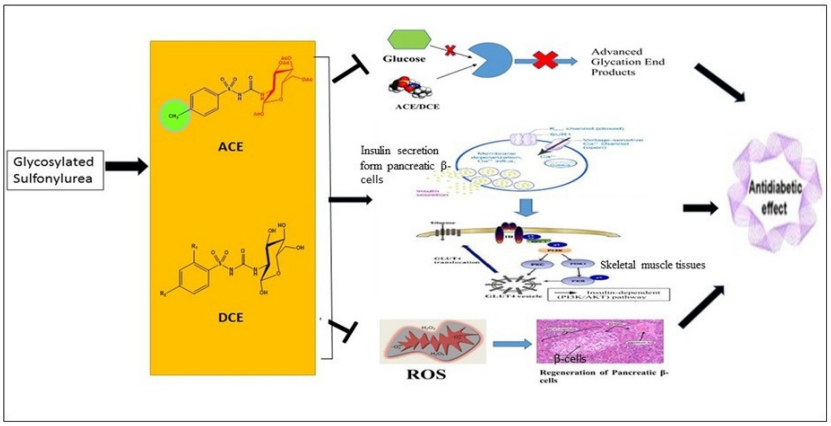
A PEEP INTO THE ACADEMIC, RESEARCH, INDUSTRIAL AND COMMUNITY ENGAGEMENT EXPLOITS

Associate Professor Dr Patrick Nwabueze Okechukwu

Associate Professor Dr Patrick Nwabueze Okechukwu

Associate Professor Dr Patrick Nwabueze Okechukwu had been presented at more than 45 national and international conferences. He has also been invited by various national and international universities to deliver his lectures and talk.

Associate Professor Dr Patrick Nwabueze Okechukwu is a lecturer in the Department of Biotechnology, Faculty of Applied Sciences, UCSI University Kuala Lumpur Malaysia. He possesses a Master of Science (MSc Research) Pharmacology from Universiti Putra Malaysia (UPM), He was a recipient of the Malaysian Government Scholarship/Fellowship Award for Commonwealth for his MSc Research programme. Doctor of Philosophy (PhD Research) Pharmacology from National University of Malaysia (UKM), Postgraduate Diploma in Tertiary Teaching (PGDTT) offered by UCSI University, and BPS Diploma in Advanced Pharmacology (BPS Dip Pharmacol UK) offered by the British Pharmacology Society (BPS), United Kingdom. Dr Patrick has over 15 years of experience in higher education teaching and research, has been involved in curriculum and academic programme development, undergraduate and post-graduate research supervision. He has been invited as a guest speaker/guest lecturer by different local Universities and conferences, he has presented at more than 45 conference proceedings in local and international conferences. He is currently the Head of Praxis, Industry and Community Engagement of Faculty of Applied Sciences (Head- FAS-PICE) and Chairman FAS-PICE standing committee at UCSI University.



The patent on the proposed mechanism of acetylated and deacetylated glycosylated sulfonylureas. which has been filed by Associate Professor Dr Patrick and his team.

Dr Patrick research interest is in drug discovery and development from natural products and synthetic compounds, for the treatment of Diabetes mellitus and associated disease complications such as kidney, wound healing, inflammation, and bone fragility. His research work on a local Malaysian plant, Consisnum Fenestartum's stem extract led to the discovery of antidiabetic and antioxidant, liver, and kidney protective activity of Palmatine. The invention titled "Palmatine for treatment of Diabetes mellitus" has been filed for patent. His work with the University of Jordan, collaborator on Glycosylated Sulfonylureas and New Hybrid Glucosamine Substituted Sulfonylureas has led to the filing of a second patent titled "Design and Synthesis of New Hybrid Glucosamine Substituted Sulfonylureas: As Potential IRS-PI3K-PKC-AKT-GLUT4 Insulin Signalling Pathway Downstreaming Intriguing Agent. He also reported In-Vitro, In-Vivo Antioxidant, Anti-Diabetic, Molecular Mechanism and Docking of Acetylated and Deacetylated Glycosylated Sulfonylureas. His current research is in the molecular mechanism of action of antidiabetic and antioxidant activity of lead compound palmatine and glycosylated Sulfonylurea. Specifically looking at ALR2-Glo1-2, NFr2, AGE-RAGE interaction, Insulin signaling pathway –IRS-1/2-PI3K-AKT-PKB-MAK 38P-GLUT4 and PERK PERK/eIF2α/ATF4 Signaling Pathway.

His passion for research and exposure to the industry has led him to attract a lot of industry grants, collaborations, and consultancies. He is the lead researcher and consultant for Alpha Active Industries Sdn Bhd, a subsidiary of YSP Pharmaceutical Industry Bhd. He is working on the development of a pharmacologically active product from oil Palm Trunk and herbal formulation for the complimentary treatment of bone fragility/osteoporosis. He is a lead researcher and consultant for Basefood Sdn bhd working on the product development of low-calorie sugar replacement sweeteners and zero sugar energy drinks for diabetes mellitus patients. Dr Patrick previous collaboration in product development research with Alpha Active Industries Sdn Bhd led to the commercialisation of a product, "BIOSPIRULINA'TM marketed by YSP-Shine Pharmaceutical Industry Bhd. He is currently working with Physic Nature Pte Ltd on a herbal formulation for the complimentary treatment of diabetes mellitus and associated complications. Dr Patrick has been the principal investigator and co-principal investigator for several national and international grants, Fundamental Research Grant Scheme (FRSG) from the Ministry of Higher Education, Malaysia and grants offered by Somaliland Government and Republic of Yemeni for Camel milk and Yemeni Sidar honey project. He has won three awards for his works; a) an in vitro study of the antihistaminergic and anticholinergic effects of compounds from the leaves of Alseodaphne perakensis, b) Biological study (morphine-like and histaminergic) effects of partially purified extracts from the leaves of Alseodaphne perakensis, c) Isolation and investigation of the hypotensive effects of semi-purified extract from the stem of Coscinium fenestratum. Inclusion in Marquis Who's Who in the World 2011 (28th Edition). Two of Dr Patrick's inventions, Diabe-Con powder (lowers plasma glucose, reduces lipids and antioxidant) and Lamogen wound-healing cream were published by the Department of Higher Education, Ministry of Higher Education in R &D Products of Universities in Malaysia 2016, under the category of Potential to be commercialised products of medical and health.

Dr Patrick is a member of various national and international professional associations such as American Society for Pharmacology and Experimental Therapeutics (ASPET), British Pharmacology Society (BPS), he is subcommittee advisory member of BPS Diploma in Advanced Pharmacology (BPS Dip Pharmacol). Malaysia Society for Pharmacology and Physiology (MSPP), Malaysian Natural Products Society (MNPS), West African Society for Pharmacology.He has international academic and research project collaborations with International and Local Universities.

Dr Patrick has has been appointed as delegate to give his expert advice in dialogue sessions and summit organised by various government agencies and the ministry in his home country, Nigeria and Malaysia. Dr Patrick was the secretary of Nigerians in Diaspora Organization Malaysia (NIDOMY) for 7 years. NIDOMY is an association that is supervised by Diaspora commission in the office of the President Abuja Nigeria and duly registered with the registrar of society Malaysia. He was appointed Asian Region Delegate to ABA Urban Development Summit Organized by Abia State Government Nigeria, 2016, Asian Region Delegate for Nigerians in Diaspora Home Coming organised by Diaspora Commission Abuja Nigeria 2013-15. Asian Region Delegate to AGROFEST, A National Dialogue on Agriculture Organized by Minister of Agriculture, Ministry of Agriculture Abuja- Nigeria 2014. He was one of the recipients of the Nigerian Excellence Award (NEA) 2018 "Recognition award": by Nigeria High Commission in Kuala Lumpur Malaysia. Dr Patrick was one of the delegates specially invited by the Malaysian Minister of Foreign Affairs, to Roundtable Discussion with Minister of Foreign Affairs: to review the "New Malaysia's Foreign Policy from the lens of Non - Malaysian Academics 4 April 2019".

DASILVA AWARD 2021

Associate Professor Dr Grrace Ng Hui Suan

Associate Professor Dr Grrace Ng Hui Suan, the Director of CERVIE and the Associate Professor from Faculty of Applied Sciences was recently awarded the DaSilva Award, 2021 by The Society of Biotechnology with the research entitled "An integrated approach for sustainable production of keratinase using aqueous biphasic electrophoresis".

Associate Professor Dr Grrace Ng Hui Suan
Director of Centre of Excellence for Research, Value Innovation and Entrepreneurship (CERVIE)
UCSI University

At present, several purification strategies have been established for the recovery of keratinase from microbial fermentation crude feedstock where multiple steps of downstream processes are required to obtain the purified enzyme. The Conventional purification strategy of keratinase often involves the combination of ammonium sulphate precipitation, adsorption-desorption and followed by the chromatographic method that constitutes a major factor of the keratinase production costs and results in low yields of the enzyme. The increasing demands of microbial keratinases to allow the practical applications of keratinases in various industries have urged the development in the economical downstream processes in producing sufficient amounts of keratinases with desirable purity.

The application of polymer/salt ABS with the incorporation of ultrafiltration in recovering keratinase from microbial fermentation broth in a one-step operation was previously investigated and proven to be a feasible method in recovering the keratinase. Because of this, the incorporation of electric fields to the ABS is proposed in this study in replacement of the ultrafiltration which is suggested can enhance the recovery yields, purification folds and scalability of the system.

This integration approach is more commonly known as aqueous biphasic electrophoresis system (ABES) which can enhance the recovery and separation efficiency of the enzymes with the aids of selective electromigration of biomolecules owing to the difference of the surface charges. The exclusive selective distribution of target biomolecules in the ABES can be enhanced by the electrophoretic migration of the charged biomolecules across the phase boundary to the one specific phase with the aids of the integrated electric fields.

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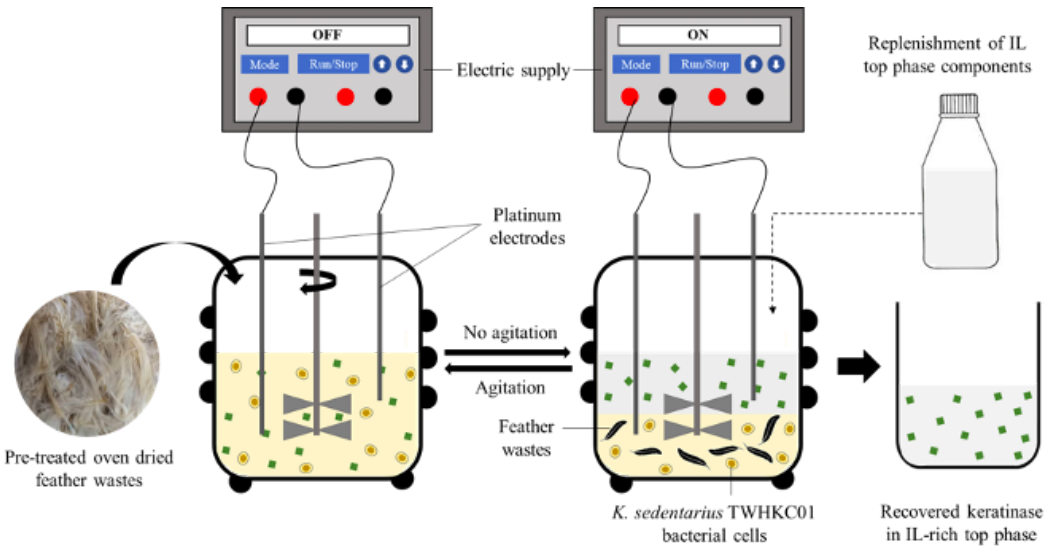

Graphical Abstract

UCSI University

SEVEN THINGS TO KNOW ABOUT MICROPLASTICS

Assistant Professor Dr Eugenie Tan

World Health Organisation (WHO) had called for future research on the assessment of microplastics in the environment and their possible impact on human health. The Organisation also urged to stop the rise of plastic pollution globally (WHO, 2021). Here are seven things we know about microplastics.

1. WHAT ARE MICROPLASTICS?

In 2004, the term microplastic was coined to describe microscopic pieces of plastic in the environment. Five years later, an upper size limit was proposed for microplastics; they are known as 'plastic particles smaller than 5mm' (Frias and Nash, 2019). Meanwhile, nanoplastics sizes are less than 1µm (Cai et al., 2021).

2. WHERE DO MICROPLASTICS COME FROM?

There are two types of microplastics; primary and secondary microplastics. Primary microplastics are small plastic particles that are intentionally manufactured for commercial use such as microbeads in facial scrubs, shampoos, and toothpaste; cleaning detergents; glitters; microfibers shed from clothing and other textiles; semi-conductors, and drug carriers (Jiang et al., 2020). They can also result from intermediate plastic feedstock, by-products of production as well as wear and tear during normal plastic use (Pravettoni, 2021).

Secondary microplastics are plastic fragments that degrade from larger plastic pieces due to UV radiation; interaction with wind, waves, and other abrasions as well as biodegradation. As a result, plastics become brittle, their structure weakens, fragments, and are released into the environment (Jiang et al., 2020). Microplastics enter the marine ecosystem through domestic and industrial drainage systems, surface run-offs, wind disposal, soil erosion, wastewater-treatment plants, or plastic disposal into seas. They make up 80-85% of marine litter (Akdogan and Guven, 2019). Figure 1 illustrates of sources of microplastics.

3. WHY SHOULD WE BE CONCERNED?

Microplastics are found in all global environments including seas, freshwater lakes, rivers, terrestrial environments, and atmospheric fallout. They contain toxic chemicals due to the addition of additives such as bisphenol A and phthalates during plastic manufacturing. Additionally, they also absorb toxic chemicals such as polychlorinated biphenyl (PCB) and polycyclic aromatic hydrocarbons (PAH) from the surrounding environment via hydrophobic and electrostatic interactions. Microplastics are persistent in the environment and are difficult to clean up due to their small sizes (Peng, Wang and Cai, 2017).

4. HOW DO MICROPLASTICS HARM MARINE ANIMALS?

Most research focuses on marine animals as oceans are sinks of microplastics. Small sizes of microplastics make them easily ingested by marine animals. Ingestion of microplastics can occur due to misidentification of food, indiscriminate consumption, or as a result of the trophic transfer food web. Once ingested, microplastics can accumulate within the organism, move between body tissues, or can be excreted. Accumulation causes alteration of metabolic and reproductive activity, decreased immune response, oxidative stress, inflammation, and cancer. Microplastics can be transferred along the food chain through the predator-prey relationship, thus, affecting the entire marine ecosystem (Guzzetti, Sureda, Tejada and Faggio, 2018).

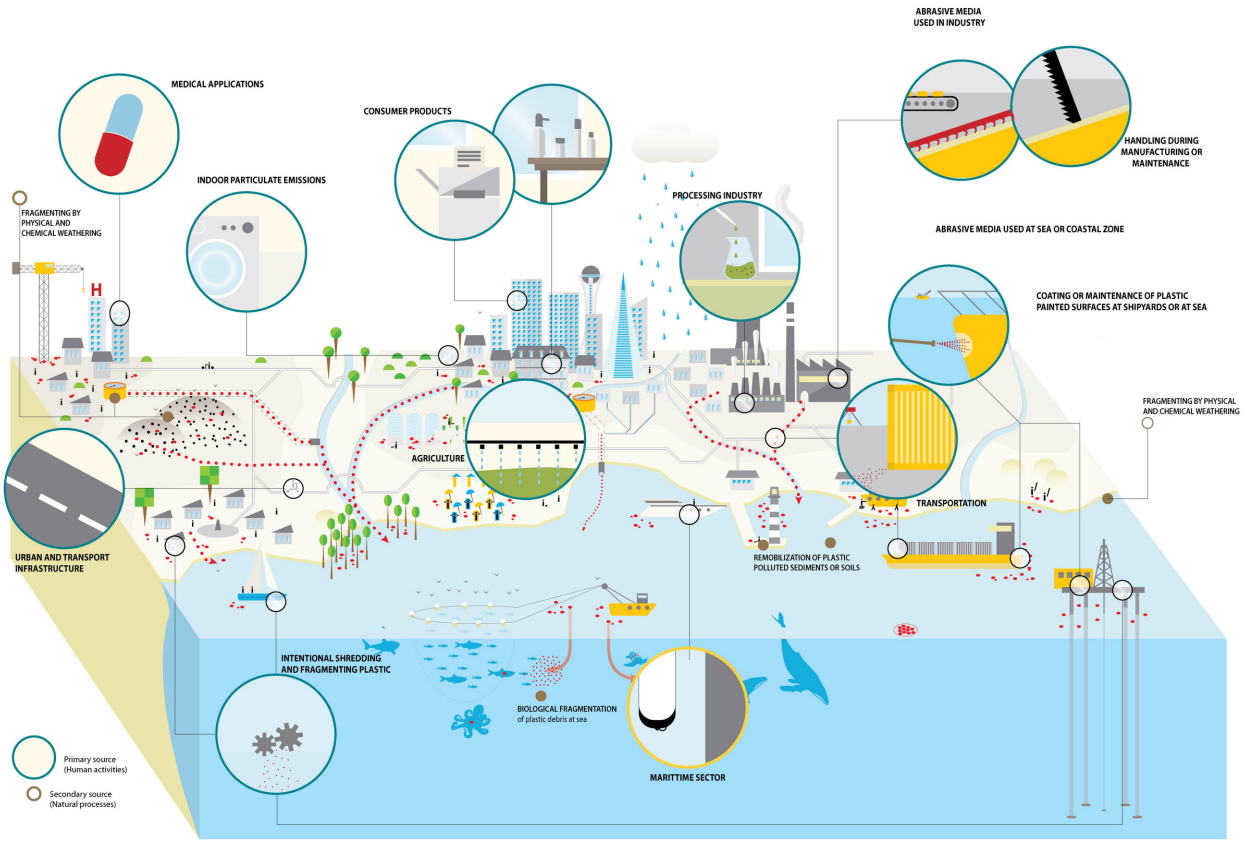

Figure 1 How microplastics are generated

5. ARE MICROPLASTICS A THREAT TO HUMAN HEALTH?

Human's main exposure to microplastics is ingestion, inhalation, and dermal contact due to the presence of microplastics in consumer products, food, and air. Nonetheless, the main route of human exposure is ingestion. Microplastics had been reported in bivalves, commercial fish, table salt, and sugar. It is estimated that the consumption of bivalves exposed the Europeans to 11,000 microplastics per person per year (Prata et al., 2020). Figure 2 is an example of how microplastics could end up on a consumer's plate (Pravettoni, 2021). As to date, health risk due to ingestion of microplastics is not known due to scanty research. Animal studies and cell lines on microplastics had been reported to cause metabolic disturbances, neurotoxicity, and increased cancer risk (Danopoulos, Jenner, Twiddy and Rotchell, 2020, Rahman et al., 2021).

6. What are areas for future research?

Areas that merits further investigation include developing a standardized method for microplastics sampling, investigating vertical distribution of microplastics in the water column, the occurrence of microplastics in a terrestrial environment, determining fragmentation rates of microplastics, determining human exposure to microplastics and quantifying cumulative exposure, developing a standardised method to evaluate human health risks as well as determining toxic effects of microplastics and its critical dose (Prata et al., 2020, Rahman et al., 2021).

7. How can we avoid microplastics?

There are several ways to avoid microplastics such as filtering our drinking water, reducing the use of plastic containers, avoiding beauty products with microbeads, purchasing clothes made of natural fibers or any effort to reduce plastic consumption (Lorenzo, 2021).

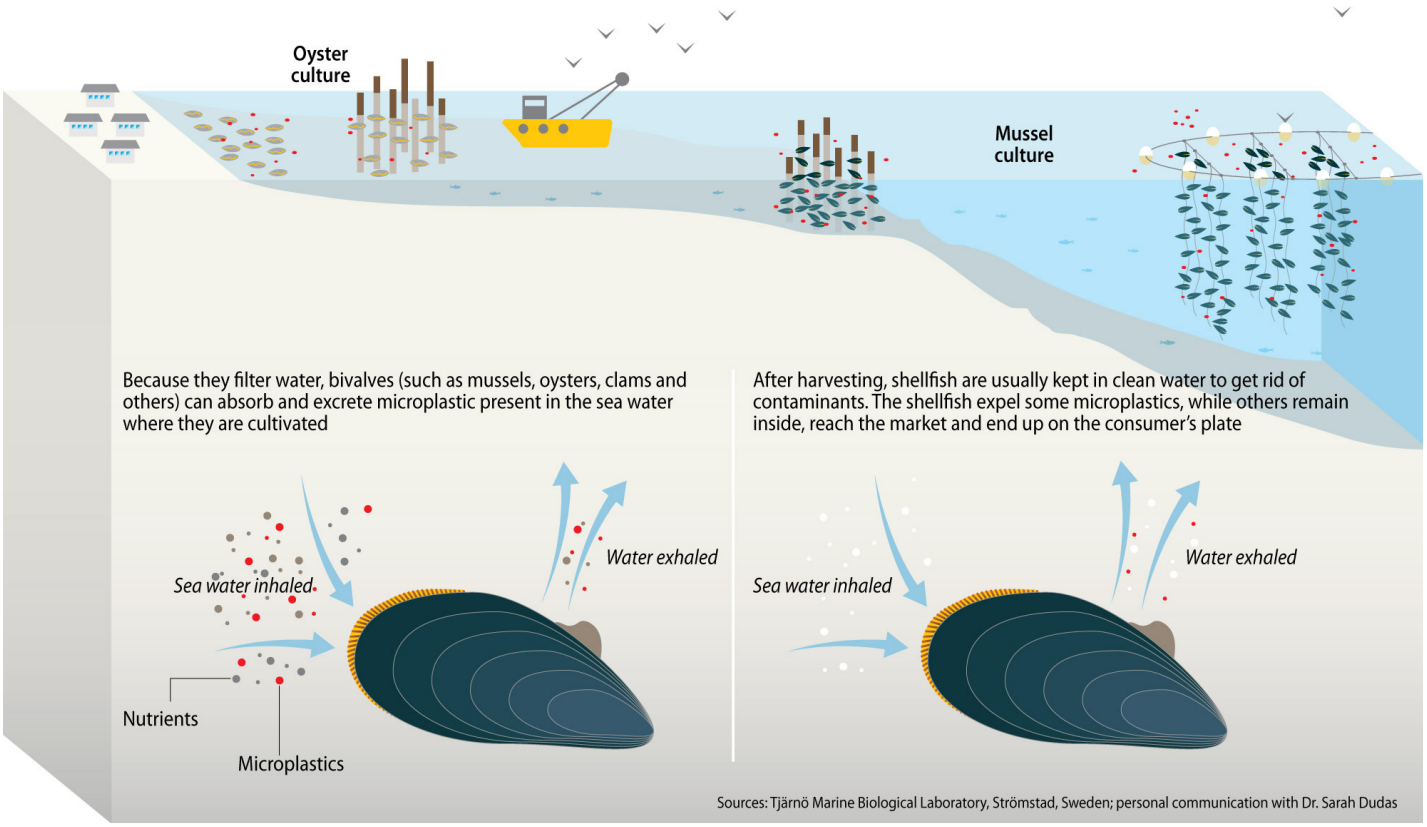

Figure 2 How microplastics end up on a consumer's plate

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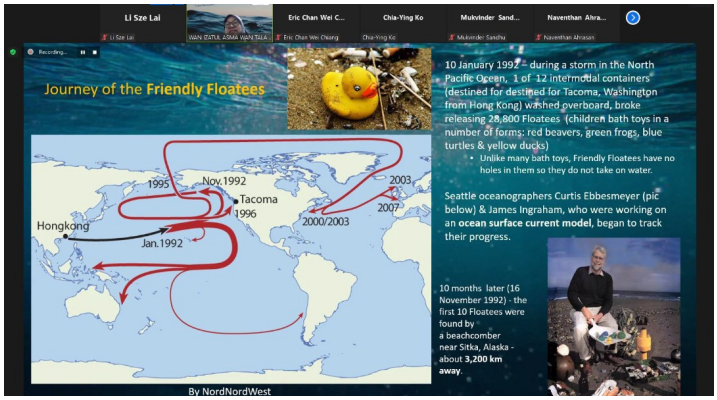
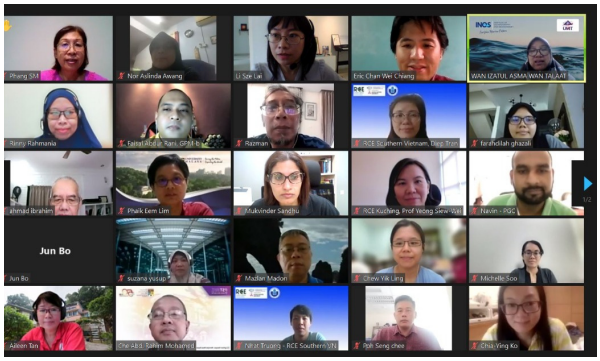
THE ASIA-PACIFIC ECONOMIC COOPERATION (APEC) SUSTAINABLE COASTAL CITIES SYMPOSIUM: PRE-SYMPOSIUM FOCUS GROUPS

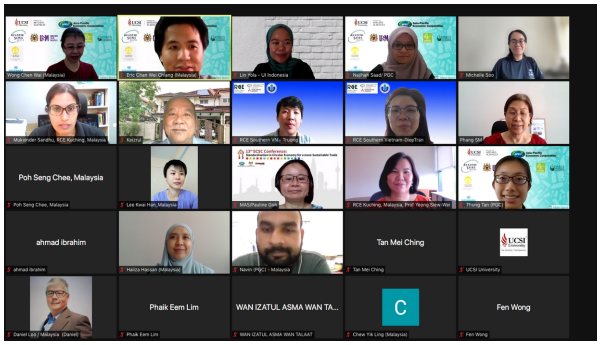
UCSI University was awarded a grant for an APEC Project in January 2021. The project titled APEC Sustainable Coastal Cities Symposium will be held virtually from 24-26 November 2021, 9:00 am – 2:00 pm (UTC+8). Activities planned during the symposium include:

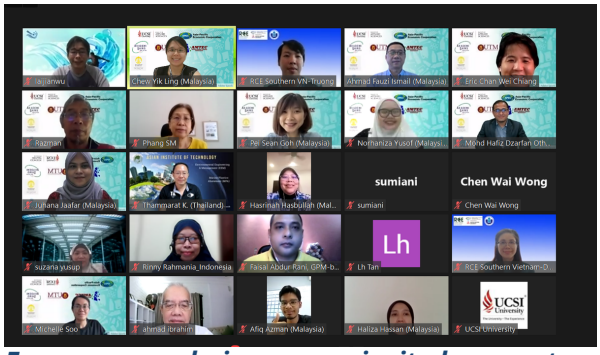
- Public official's forum (24 November 2021), where governmental representatives from APEC member economies would share about current policies and practices with regards to marine debris;
- Stakeholder meeting (25 November 2021), where representatives from non-governmental agencies and private companies would discuss their roles in addressing marine debris; and
- Inauguration of the APEC Sustainable Coastal Cities Research Consortium (26 November 2021) where academics share about current research and technologies related to managing marine debris. This technology presentation would be held in conjunction with the launching of an APEC Sustainable Coastal Cities Research Consortium.



Focus group presentation by Professor Dr Wan Izatul Asma Wan Talaat in Governmental policies towards addressing marine debris session on 3 September 2021.



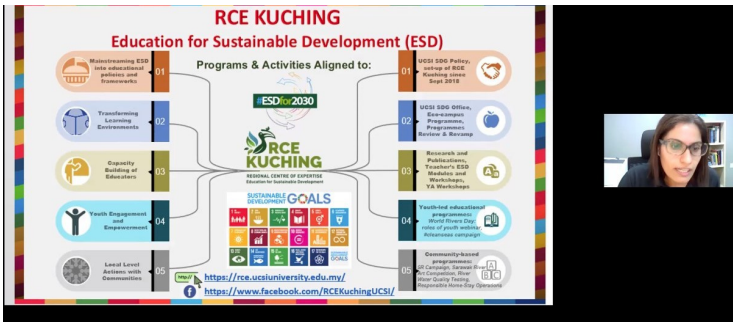




Focus group chairpersons, invited presenters and participants from various countries including China, Vietnam, Indonesia, Thailand, India, Taiwan, and Malaysia.

Several pre-symposium focus groups were held between 3 September 2021 and 17 September 2021 to gather information from stakeholders for an APEC publication entitled "Best Practices and Recommended Policies for Optimizing the Plastic Supply chain in Southeast and East Asia". It is expected that this document would help guide APEC Economies in effectively reducing plastic pollution and marine debris, thus forming the backbone for the much-anticipated white paper.

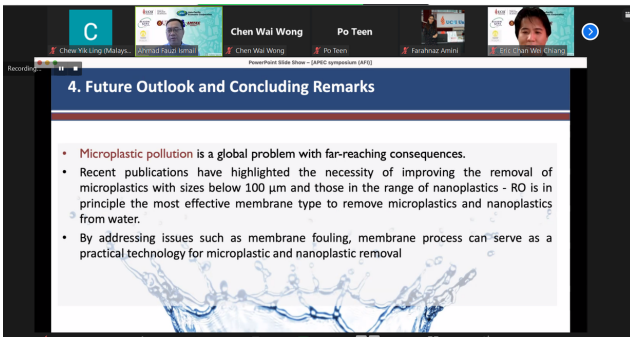
With an all-star roster of senior researchers from the Academy of Sciences Malaysia (ASM) chairing the sessions, the pre-symposium focus groups proved to be a very interactive sharing platform. Session chairs included: Professor Dr Wan Izatul Asma binti Wan Talaat, from Institute of Oceanography and Environment (INOS), Universiti Malaysia Terengganu; Dato' Dr Aileen Tan Shau Hwai, from Centre for Marine and Coastal Studies (CEMACS), Universiti Sains Malaysia; and Professor Datuk Dr Ahmad Fauzi Ismail, from Advanced Membrane Technology Research Center (AMTEC), Universiti Teknologi Malaysia.

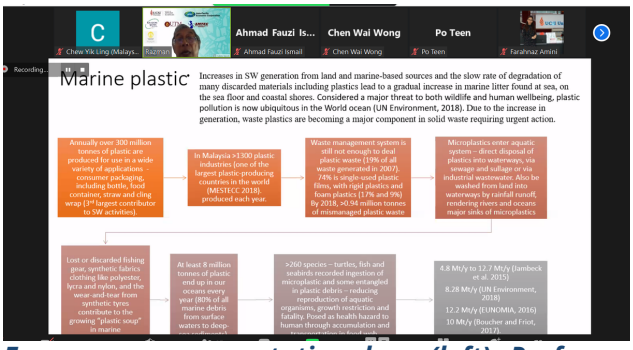


Focus group presentation by (top) Professor Dato' Dr Aileen Tan Shau Hwai and (bottom) Mukvinder Kaur Sandhu from RCE Kuching in Non-governmental Initiatives and Practices for Addressing Marine Debris session on 10 September 2021.

Much information from APEC Economies have been gathered on the challenges related to marine debris and creative local solutions. One of the most pertinent issues is to acknowledge regional differences and develop local solutions. Indonesia, for instance, has an enormous challenge for providing sufficient waste management infrastructure across their thousands of inhabited islands. Japan faces similar challenges but has a better developed infrastructure and Vietnam is aggressively closing the technological gap in solid waste management technologies.

There is much that different APEC Economies can learn from one another. The creative solutions proposed during the focus group was on ship-borne incinerator vessels, which would themselves pose technological challenges. Efforts made to reduce marine debris are also made alongside efforts to secure coastal cities against sea level rise. Platforms to share experiences, technologies and best practices are very much needed. It is our hope that the symposium in November will not only formalise the suggestions and outcomes but will also spearhead research and collaboration across the different APEC Economies to collectively mitigate marine debris and promote sustainable coastal cities.





Focus group presentation by (left) Professor Datuk Dr Ahmad Fauzi Ismail and (right) Professor Dr Mohd Razman Bin Salim in Innovation and Technologies for Addressing Marine Debris session on 17 September 2021.

UCSI University researchers participated in the 31st International Invention, Innovation and Technology Exhibition Malaysia (ITEX 2020) on 20 and 21 November 2020, and had won several awards. Organised by the Malaysian Invention and Design Society (MINDS), ITEX is a leading international platform that features new inventions, technologies, and products, gathering innovators, inventors and researchers to meet with investors, manufacturers and industry players for new investments and commercialisation.

SILVER MEDALISTS

Invention title: **Kollicoat MAE 100P Coated Capsules to Deliver the Cyclodextrin-Everolimus Inclusive Complex to Treat Colorectal Cancer**

Category: **Medical, Health**

Researchers: **Associate Professor Dr Palanirajan Vijayaraj Kumar (Faculty of Pharmaceutical Sciences, UCSI University), Dr Marwan Abdelmahmoud Abdelkarim Maki (Faculty of Pharmaceutical Sciences, UCSI University), Associate Professor Dr Cheah Shiau Chuen (Faculty of Medicine and Health Sciences, UCSI University), Professor Dr Abu Bakar Bin Abdul Majeed (Universiti Teknologi Mara), and Dr Omer Bayazeid (Hacettepe University, Turkey)**

Award synopsis: The inhibition of mTOR-signalling pathway is considered as a key element in the anticancer therapy of various tumours. Several observations have suggested that mTOR inhibitor-Everolimus (EV) could be effective against colorectal cancer (CRC) and carcinomatosis.[2] However, the meaningful efficacy of EV as a single agent for the treatment of CRC has failed to be proven in multiple clinical trials. The causes of the failure of EV as a monotherapy antitumor agent still remain unclearbut several observations have linked it with cancer cell membrane barriers, P-gp active efflux transporter or multidrug resistance-associated proteins.[7] β-Cyclodextrin (β-CD) has been reported to increase the retention and accumulation of mTOR inhibitors in Caco-2 cells by significant decrease in the efflux ratio, suggesting the inhibition of P-gp-mediated efflux transport. Therefore, we developed the concept of treating colorectal cancer using inclusive compound. Based on this concept we invented β-Cyclodextrin:Everolimus inclusive complex and surface ligand wrapped β-CD:EV inclusive complex that dramatically improved the antiproliferative effect of the mTOR inhibitor EV by enhancing its cellular uptake, intracellular retention, and through preventing fibroblast growth factor receptor activation thus preventing cell proliferation. The prepared β-Cyclodextrin:Everolimus inclusive complex filled inside the kollicoat MAE 100P coated capsules to deliver the -cyclodextrin-everolimus inclusive complex to treatment colorectal cancer.

Dr Marwan Abdelmahmoud Abdelkarim Maki

Associate Professor Dr Palanirajan Vijayaraj Kumar

Associate Professor Dr Cheah Shiau Chuen

SILVER MEDALISTS

Invention title: **TomaClear: A New Natural Bioactive Loaded Microsphere Anti-Pigment Cream**

Category: **Beauty, Fitness, Sports**

Researchers: **Associate Professor Dr Mogana Sundari Rajagopal (Faculty of Pharmaceutical Sciences, UCSI University), Assistant Professor Dr Sasikala Chinnappan (Faculty of Pharmaceutical Sciences, UCSI University), Assistant Professor Dr Ashok Kumar Janakiraman (Faculty of Pharmaceutical Sciences, UCSI University), Assistant Professor Dr Muhammad Junaid Farrukh (Faculty of Pharmaceutical Sciences, UCSI University), Por Choo Shiuan (Faculty of Pharmaceutical Sciences, UCSI University), Tan Lee Fang (Faculty of Pharmaceutical Sciences, UCSI University), Yap Vi Lien (Faculty of Pharmaceutical Sciences, UCSI University)**

Award synopsis: Tomaclear, a new natural bioactive loaded microsphere anti-pigment cream containing Solanum lycopersicum or commonly known as tomato. Hyperpigmentation is a commonly encountered skin condition. It is a skin disorder due to excessive melanin synthesis and the current gold standard for the treatment of hyperpigmentation disorders, hydroquinone has been associated with several adverse effects. Conventional facial formulations also tend to possess some limitations such as ineffective skin penetration and short duration of action. In the pursuit of novel effective agents for hyperpigmentation control, botanicals have gained increased attention as a efficacious and safer alternative. Tomatoes have become a point of interest as a natural bioactive source due to its wide availability and various health benefits. In Malaysia, there are more than 24,000 hectares of tomato farms across the country and are available all year round thus making it an excellent alternative and renewable resource. Tomato has been reported to exhibit tyrosinase inhibition activity which inhibits the biosynthesis of melanin. By incorporating tomato seed oil into the novel formulation of microspheres, the problems with conventional formulations may be solved with improved effectiveness, minimal irritation and stability while maximizing the potential benefits of tomato. Also, other ingredients such as allantoin, hyaluronic acid and panthenol have been added into the cream to confer additional benefits such as moisturization, skin protection and regeneration. Additionally, TomaClear is packaged using recyclable materials and does not contain hazardous substances. This is in line with the United Nations 12th sustainable development goal of responsible consumption and production. Future plans for this invention will be focused on further studies for commercialization due to the high demand in products addressing pigmentation disorders such as melasma, solar lentigo and post-inflammatory hyperpigmentation.

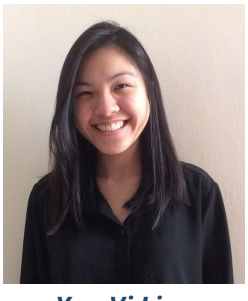
Associate Professor Dr Mogana Sundari Rajagopal

Assistant Professor Dr Sasikala Chinnappan

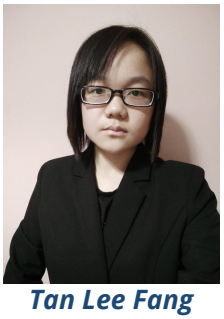
Assistant Professor Dr Ashok Kumar Janakiraman

Assistant Professor Dr Muhammad Junaid Farrukh

Por Choo Shiuan



Yap Vi Lien



Tan Lee Fang

RESEARCH GRANT CALLS, EXHIBITIONS AND SYMPOSIUMS

No.	Funding Scheme	Endorsement by CERVIE	Submission Closing Date
1	Malaysia Grand Challenge, MOSTI • Applied Innovation Fund (AIF) • Technology Development 1 Fund (TeD 1) • Bridging Fund (BGF) • MOSTI combatting COVID-19 Fund *URL link: https://edana.mosti.gov.my/*	Open, no closing date as for now	Open, no closing date as for now
2	7th Call of the Southeast Asia - Europe Joint Funding Scheme (JFS) *URL link: https://euraxess.ec.europa.eu/worldwide/asean/7th-call-southeast-asia-europe-joint-funding-scheme-jfs-launched*	1 Oct 2021	15 Oct 2021
3	Horizon Europe Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowships 2021 *URL link: http://bit.ly/3mAPcKu*		12 Oct 2021
4	Nippon Sheet Glass Foundation for Materials Science and Engineering 2022 *URL link: http://nsg-zaidan.or.jp/oversea/index_en.html*		15 Oct 2021
5	Ernst Mach-Grant – ASEA-UNINET *URL link: https://grants.at/en/*	14 Feb 2022	1 March 2022
No.	**Exhibition(s)**	**Submission Closing Date**	
1	Asia International Innovation Exhibition 2021 (AIINEX 2021) *URL link: https://www.aiinex.org/*	3 Oct 2021	
2	Young Entrepreneurs Scheme (YES) 2021 *URL link: http://www.asti.org.my/yes2021/*	20 October 2021	
3	2021 Seoul International Invention Fair *URL link: https://www.ifia.com/mobile_event/siif-2021/*	11 Oct 2021 (*Internal Deadline*) 5 Nov 2021	
4	32nd International Invention, Innovation & Technology Exhibition Malaysia (ITEX 2021) *URL link: https://itex.com.my/*	13-14 Dec 2021	
No.	**Symposium(s)**	**Abstract Submission Closing Date**	
1	XMUM - IEREK Joint Conferences 2021 *URL link: https://www.ierek.com/events/FSC-4th#introduction* *https://www.ierek.com/events/EOEC-7th&GiT4NDM-9th#introduction* *https://www.ierek.com/events/RRAU-4th#introduction*	3 Oct 2021	
2	International Conference on Tropical Sciences (TropSc2021) *URL link: https://www.tropsc2021.com.my/*	25-27 Oct 2021	

Please refer to your respective Head of Research for more information.

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