25 YEARS OF EXCELLENCE

Curtin University Malaysia

FACULTY OF ENGINEERING AND SCIENCE

NEWSLETTER

ALUMNI SUCCESS STORIES

SUCCESS OF STUDENT ACTIVITIES

TEACHING EXCELLENCE

ENGAGEMENT AND PARTNERSHIPS

RESEARCH STRENGTH AND SUCCESS

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Editorial Team:
(From left) Mr. Pang Po Ken, Dr. Fethma Binti M.Nor, Prof. Tuong-Thuy Vu, A/Prof. Bridgid Chin, Dr. Tina Ting

Pro Vice-Chancellor, President and Chief Executive
Curtin University Malaysia

WELCOME MESSAGE
Prof. Simon Leunig

It is with great pleasure that I extend my heartfelt congratulations to the Faculty of Engineering and Science (FOES) on the launch of this FOES Newsletter, a truly inspiring initiative marking Curtin Malaysia's 25th Anniversary. This newsletter is a testament to the remarkable achievements of the Faculty and stands as a proud reflection of the exceptional quality of education, research, and innovation that define Curtin Malaysia.

Featuring 25 compelling alumni success stories, highlights of key faculty projects and activities, staff and student achievements, significant partnerships, and more, this newsletter not only showcases our past milestones but also inspires us to forge ahead with ambition and purpose.

I would like to particularly commend Faculty Dean Professor Tuong Thuy Vu and the dedicated faculty staff who have worked tirelessly over the past year to curate these stories and ensure the newsletter is both engaging and worthy of our 25th Anniversary celebrations. Your diligence, creativity, and commitment have resulted in a publication that exemplifies the spirit and excellence of Curtin Malaysia.

As we celebrate this significant milestone, let us also acknowledge the impact of our alumni, students, and staff who continue to contribute to the growth and success of our institution. This newsletter beautifully captures their stories and achievements, reinforcing the enduring legacy of Curtin Malaysia as a leader in education and innovation.

Once again, congratulations to the Faculty of Engineering and Science on this outstanding accomplishment. I am confident that this newsletter will serve as a source of pride and inspiration for all who are part of the Curtin Malaysia community and beyond.

Dean

Faculty of Engineering & Science

WELCOME MESSAGE
Prof. Tuong-Thuy Vu

It's truly remarkable to see the journey of the Faculty of Engineering and Science (FOES) at Curtin Malaysia unfold over the past 25 years. From its humble beginnings in 1999 to becoming the top Engineering and Science school in Borneo today, FOES has certainly made significant strides in academic excellence and research innovation.

FOES' focus on Future Energy, Bio-processing, Intelligence, and Sustainable Technologies reflects a forward-thinking approach to addressing the pressing challenges of our time. With over 10 high-quality undergraduate and postgraduate programs, FOES is not only nurturing the next generation of engineers and scientists but also actively contributing to cutting-edge research in collaboration with international, regional, and local partners.

The success of FOES is a testament to the dedication and hard work of its staff, students, alumni, and partners over the years. It's heartening to see the commitment to excellence and the impact that FOES has had on advancing science and addressing critical issues in life.

As we celebrate this milestone, it's important to recognize and appreciate the contributions of everyone involved in FOES' journey. Together, we have built a strong foundation for future growth and expansion, and I am honored to be part of this esteemed institution.

I extend my heartfelt congratulations to all FOES past and present members. Let us continue to work together, hand in hand, to forge strong partnerships and create a better future for our planet, our only home. Thank you for the opportunity to be part of this incredible journey.

Curtin University Malaysia

ALUMNI
Success Stories

DR. ALEX GOH

***Senior Manager, Product Management - Data & AI* from BeiGene**

BSc, MPhil (Computer Science)

PhD (Neurophysiology & Computer Science), Graduated in 2017

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'*We cannot change the cards we are dealt, just how we play the hand*.', a quote from the late Randy Pausch, Professor in Computer Science at Carnegie Mellon University.

I was one of the few Computer Science graduates back in 2010. Back then, there were only a few kittens studying that course. I was fortunate to be awarded a scholarship to further my master's studies in Curtin Malaysia. After that, I was awarded a prestigious Australian scholarship (worth $250K AUD) to further my doctorate degree in Curtin Australia. I later trained as a group fitness instructor, finished my doctorate degree, taught more than a thousand first-year students and engineers, received the Excellence in Teaching award in Curtin, and worked as a Data Scientist in Australia since 2017. I am currently working as a Senior Product Manager in Data Science in a global oncology pharmaceutical company. Our mission is to make breakthrough cancer treatments more accessible and affordable globally. My role is to bridge the business and technical domains, establish data product vision and strategy, drive project execution, and improve cross-function collaboration in the drug development lifecycle.

Studying at Curtin University Malaysia was probably the turning point of my life. I was not great in SPM or UEC, but I enjoy programming, which was first introduced in my Foundation Year in IT. Choosing the right course (i.e. Computer Science) after the foundation year was probably the easiest decision to make because that was what I want to do – programming! Not to mention, I am fortunate to have great teachers (most of them are still there) in Curtin Malaysia, who inspired students day in and day out. I am who I am today because of them and their hard work. And today, I am fortunate to improve the lives of people, and help businesses to make data-driven decisions all using programming!

I would like to finish the story by saying we now lived in a world where technologies impact lives rapidly on a large scale. Despite that, Curtin graduates no matter past or present are trained to be lifelong learners and use technologies appropriately. After all, a quote from one of my favourite lecturers – "At university, we learned how to learn".

Thank you.

ALUMNI
Success Stories

FIONA BASSY ANAK WILLIAM
Associate Lecturer from Curtin University Malaysia
BSc, MPhil (Geology), Graduated in 2021
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I earned both my Bachelor's degree in Applied Geology and my Master's degree in Geology from Curtin Malaysia. I studied for a bachelor's degree for nearly five years but that does not hold me back from completing it, especially with my final year of studies coinciding with the onset of the global pandemic, I successfully persevered in my studies. I take immense pride in having achieved my academic goals while navigating the challenges and struggles of that time. This experience reinforced my motivation to become a dedicated expert in the field of geology. As I was born and raised in Miri, being close to home and fortunate enough to attend Curtin Malaysia, which provided me with invaluable support and resources. The thought of me trying to balance my study time and family was considerably easy even with other commitments I have on the side.

Throughout my academic career, I engaged in a variety of activities including volunteering, presenting, and exhibiting. These opportunities allowed me to connect with professionals from diverse industries and organizations, enhancing my knowledge through collaborative sharing sessions. I was honored to receive the Chancellor's Commendation for my exceptional Higher Degree by Research thesis titled "Distribution and Sources of Eco-toxic Metals in Particulate, Colloid, Dissolved Fraction, and Sediment in the Miri Estuary (Sarawak)". All thanks to my thesis committee, without their continuous guidance I would not be able to complete my research that comes with many trials and tribulations through every step of the way. As I reflect on this journey, I am deeply thankful for the unwavering support and insightful feedback from those around me. Although the path was challenging, each step has contributed significantly to my personal and professional development. I am now eagerly looking forward to the next chapter of my career and the exciting opportunities that await.

Last but certainly not least, I would like to share a quote that resonates deeply with me: "Success is not overnight. It is when every day you get a little better than the day before. It all adds up." – Dwayne Johnson. This sentiment reflects my own experiences; every mistake and challenge has shaped who I am today, instilling in me greater confidence and a belief in my abilities. I am ready to seize new opportunities without hesitation.

Thank you.

ALUMNI
Success Stories

HOW TONG WEI

Manager Technical Product Support

from Bridgestone Mining solutions, Australia

BSc (Mechanical Engineering), Graduated in 2008

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Be A Problem Solver, Not Just Problem Identifier!

I still remember the day I stepped out of my comfort zone to start my tertiary education with Curtin. Whilst keeping calm, I went through the orientation and settled in well with new university mates both on-campus and off-campus. The student services gave their all to help us to familiarise with the new environment particularly those from abroad. The first few months had taught me a great deal to manage uncertainties and challenge yourself to go beyond the usual day to day life. It crafted one to be more independent and be accountable to what matters most; yourself.

I had a great opportunity to meet fellow educators from various backgrounds, cultures, and experiences. Besides the usual classroom session from lecturers and tutors, we also get together (among the students) to conduct private study session or to complete group assignments. This type of learning method was way different as compared to my high school education years. The well-structured curriculum ensures that we not only learn engineering knowledges but also how to manage people, introduces economics and exposure to professional practices. Aside from the academic programme, Curtin has also provided me a platform to contribute to the community through involvement in Curtin Volunteers!. I was also given the opportunity to be elected as one of the leaders in Student Council.

Curtin had provided me a solid foundation and shaped me to become who I am now. The determination and persistent attributes that I had acquired during Curtin years had rewarded me well in my career. Ever since my graduation and setting foot into Bridgestone Corporation (my first and current company for the past 15years), I had been travelling to many different countries around the world for meetings, technical discussions, and other work-related matters. I had adapted well with people from different cultures and of different skill levels. My current role in Australia requires me to manage the team of field specialists. Being a foreigner on this vast land, I always look back and found the similarity to the first few months in Curtin. You need to be resilient, independent and at the same time, be respectful to the unique culture in Australia.

Now in the workforce, solving problems and providing solutions are what I do most of the time. Since day one at Curtin, I had been put in that situation as well. Never complain at life being unfair or work being too hard to execute. Identify the problems and then find the best solutions through consultations and references from reliable sources. Clients will appreciate your effort and all your hard work will be rewarded at some stage. This is the same advice that I have been providing to my children as it will encourage them to think critically and aspire them to never ever give up easily.

ALUMNI
Success Stories

IAN CHANG HUAN SHENG

***Reservoir Engineer* from Shell Malaysia**

BSc (Petroleum Engineering), Graduated in 2015

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Reflecting on my experience at Curtin University, I have experienced a shift in my outlook or goals, where the valuable skills that I have gained over the years, helped to prepare me for the workforce, or developed a global perspective that allowed me to adapt to different cultural contexts.

The course that Curtin provides during my university days empowered me to relate to industry practice and knowledge via accessed international internship in an oil and gas company and final year projects collaboration with the industries. Moreover, the course work had emphasis on teamwork with accessed assignments rather than 100% exam based, which in turn has helped me to embrace diversity via collaboration with fellow students from diverse backgrounds.

Apart from academic development, Curtin has supported me to develop my soft skills via immense opportunity in learning leadership, communication, critical thinking, and cross-cultural awareness skills which enable me to excel in the global workforce that I am in now. The community work via John Curtin weekend, Curtin Volunteers, SPE student chapter, IEM student chapter, Student Orientation Advisor and Curtin environment has provided me an opportunity to be exposed to the genuine life experience and industries, in which formed a character of determination, trustworthy, team player and humble person of who I am today.

I have used the knowledge and skills gained at Curtin to advance in my Shell career and make a positive impact in my community via school outreach, society club contribution, mini tuition, and coaching the younger ones in my community. After graduating from Curtin, I have expanded a broader perspective on global issues, which has informed my personal and professional decisions.

Overall, Curtin University has provided me a valuable perspective on my life and career. Curtin has not only helped me in exceling in my career, but also helped me to be a better husband, and son to my parents and family. Through my experiences, I have gained leadership, communication, critical thinking, industrial knowledge, and cross-cultural awareness skills with attending a global, industrial-linked, and research-intensive university like Curtin.

ALUMNI
Success Stories

JOHNNY WONG KEE HONG

***Environment Advisor* from Shell Malaysia**

BSc (Environment Engineering), Graduated in 2019

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Johnny is a driven and dedicated environmental engineer who earned his Bachelor's degree in Environmental Engineering from Curtin University in 2019. Since then, he has been working as an Environment Advisor at Shell Malaysia Exploration and Production (SMEP). At SMEP, he has made significant contributions towards the company's Powering Progress strategy, particularly in the pillars of Achieving Net Zero Emissions and Respecting Nature.

As part of his role, Johnny is currently serving as a pathfinder for the next generation of Shell's environmental reporting, ensuring the company remains at the forefront of environmental stewardship and transparency in environmental performance. In 2022, he was selected to be a co-moderator for the SPE Symposium panel session titled: Beyond COP26. During this panel discussion, he moderated the discussion between senior leaders from Shell and Baker Hughes on the future of the energy industry, providing valuable insights into the industry's expectations and readiness towards existing commitments and new policies of clean energy. Johnny is also an enthusiastic volunteer and was recognized with the 2022 Most Inspiring Mentor - Bronze Award for the Global Shell NXplorers program. This award reflects his commitment to teach and mentor the leaders of tomorrow.

Johnny's time at Curtin University was a special and formative experience for him. He had numerous opportunities to develop his leadership and collaboration skills, including serving as the President of the Student Council for Curtin Malaysia and being a member of the Curtin Malaysia Council in 2017. Development of the professional skills were made possible with over 50 student clubs and organizations available for participation at the university. The freedom to self -pace learning and navigate pre-defined course deadlines provided by Curtin University enabled him to participate in and commit to extracurricular activities. This ability to balance multiple tasks while maintaining consistent and high-quality delivery has made him stand out in his current role.

Johnny has fond memories of the approachable and friendly lecturers at Curtin who were willing educators, not only educating on course content but also providing sound career advice. The professional staff were also courteous and provided essential services to enhance the students' learning experience. Till this day, he remains in touch with Curtin's academic and professional staff and is currently serving as a member of the industrial advisory panel for Curtin's Environmental Engineering programme.

ALUMNI
Success Stories

JIHOK JUNE JANESBY ROY

***Greenhouse Gas & Air Emissions Specialist* from Brunei LNG**

BSc (Chemical Engineering), Graduated in 2005

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June Roy is a Chemical Engineering alumni under the Shell Scholarship program. Currently, she holds the position of Greenhouse Gas & Air Emissions Specialist in Brunei LNG.

Prior to this, as a Senior Environment Advisor (CO2) with Shell Malaysia Upstream (SMEP), she played a key role in managing the impact of GHG emissions to the business in addition to building carbon competency across the SMEP community.

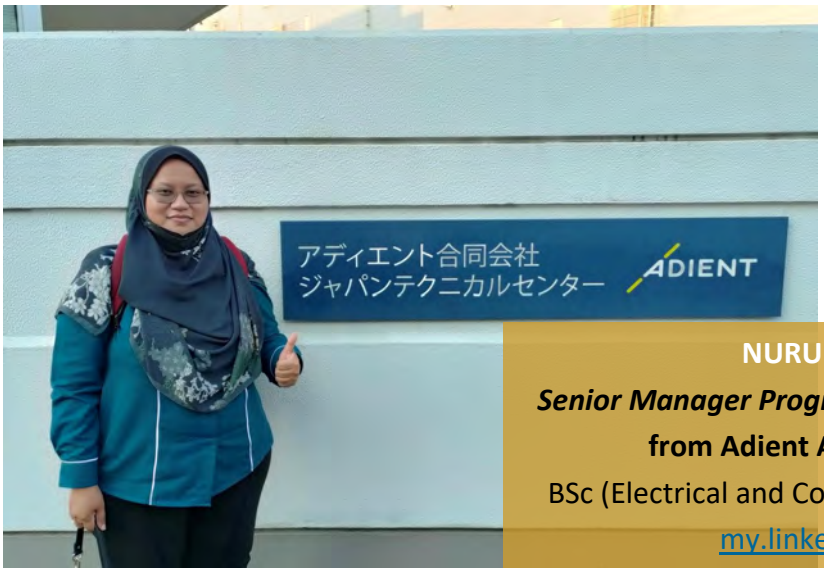
Off work, June was a SMEP Mental Health Ambassador & Shell Graduate Interviewer.

She is also a member of the industry advisory panel for Chemical Engineering in Cur□n Sarawak, where she shares her knowledge and experience to help shape the curriculum and prepare future graduates for the industry.

June's experience as a Cur□n student taught her values of independence, resilience, and work life balance. She always had a passion to understand the discovery and processing of hydrocarbons. Studying at Cur□n provided her with a unique opportunity to learn about the industry first-hand by visiting industrial plants in Miri and Bintulu. This exposure allowed her to gain practical knowledge and insights that were not taught in the classroom.

At Cur□n, students are trained to be effective communicators through involvement in projects end to end from designing, working in teams and presenting the work. In addition, the opportunity to utilize digital tools enable students to stay globally connected via access to world class journal database and other learning materials.

Active participation in competitions, industry events and affiliating with international institutions such as IChemE are a norm for students of Curtin Sarawak. "If there is one lesson I learnt during my Cur□n days that I carry with me un□l today, it's the importance of trying. When you try, there is a possibility to succeed. If you don't try, you'll lose the opportunity".



ALUMNI
Success Stories

NURUL JAMEELA NOR MAZLAN

Senior Manager Program Management (Head of Department)

from Adient Automotive Seating (M) Sdn Bhd

BSc (Electrical and Computer Engineering), Graduated in 2011

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I have a lot of good and beautiful memories of my study years in Curtin. I remember majority of my lecturer – Mr. Terence and Dr Wong Kiing Ing. I still remember my registration days in 2007 and my graduation ceremony in 2011. I do recalls sitting in the exam hall and running around to complete my assignments.

The lecturer and top student (Dr. Raymond) who is teaching Curtin students today is the same people in my Curtin journey.

Studying in Curtin was the best decision I made in my life. The decision I will never regret. I flew off from Selangor to study in Sarawak for 4 years and completed my bachelor of Electronics and Communication Engineering in 2010. The degree I had broadened my perspective of working in the manufacturing world and I have developed a strong interest in the automotive field.

Since Curtin years, I know on top of engineering, I developed a strength in project management through multiple project subjects that was introduced to the students. When I started my work, those assignments from project subjects began to translate onto project management, manufacturing process, logistic and procurement knowledge. Manufacturing activities always work around these activities. I only needed a shorter time to understand the process as I have already gone through the work in my university years. I began to realize that other university courses did not try to incorporate industrial needs to the basics; multiple knowledge is required in an organization. Students in Curtin of multiple fields are integrated in the assignments, and this resembles actual industrial work.

Sitting in the flight and observing South China Sea from air, I realized what ever that I achieved now started from my study in Curtin. Married with 2 kids, I am leading a team with diverse engineering background – chemical, electrical, mechanical, software and electronic that work together with other fields to fulfill customer request. I also have a portfolio of 17 successful product launches, including global size programs and worked with prominent global brands for 230 000 vehicles.

Success comes with 2 factors – knowledge and attitude.

Curtin is the right place for your knowledge development. Use it as the platform to grow the right attitude for your industrial journey. Live your life to the fullest and the sky is never too high!

Vehicle seat with Entertainment Headrest for Tokyo Motor Show

ALUMNI
Success Stories

IR. RAYMOND CHOW HAN SENG

***Senior Structural Engineer* from ARUP Malaysia**

BSc (Civil and Construction Engineering), Graduated in 2014

My definition of success is making a positive contribution to society by enhancing the quality of life for others. After completing my studies at Curtin University, I had the opportunity to join ARUP, an organization that shares this vision of shaping a better world through our work. At ARUP, we are guided by six core values: • Quality of work • Total Architecture • Humane Organization • Straight and honorable dealings • Social usefulness • Reasonable Prosperity of members.

The skills and knowledge I acquired during my time at university have been crucial to my career success. Over the years since my graduation, I have refined and consolidated these skills, which I have summarized below. It is important to acknowledge that while these skills have been pivotal for my personal success, they may not necessarily guarantee the same results for everyone.

Advanced Problem-Solving and Analytical Skills - Effective problem-solving involves navigating complex challenges with a multifaceted approach. By leveraging skills developed through rigorous research projects and real-world industry experience, we enhance our ability to identify and implement efficient solutions swiftly. This process requires not only a structured methodology but also the agility to rapidly learn and apply new knowledge, ensuring that we address problems in a manner that maximizes value and impact.

Lifelong Learning and Technical Expertise - Continuous learning is fundamental to professional growth and adapting to evolving fields. The foundational technical skills acquired during academic training serve as a springboard for advancing in specialized areas such as BIM, automation, parametric modeling, Lidar, photogrammetry, and data analytics. Embracing lifelong learning allows us to stay abreast of emerging trends and technologies, maintaining our competitive edge and driving innovation.

Work-Life Harmony - Achieving a balance between professional and personal life is essential for overall well-being and productivity. The principles of work-life harmony, initially explored during university, can be effectively applied in the workplace to create a more integrated and satisfying routine. This approach enhances our ability to manage responsibilities, foster personal fulfillment, and achieve a harmonious coexistence between work and personal pursuits.

Technological Engagement - Harnessing the power of technology is crucial for driving progress and transformation in various domains. Embracing and strategically utilizing technological advancements enable us to improve efficiencies, solve complex problems, and make a significant positive impact. A proactive engagement with technology ensures that we are well-positioned to capitalize on new opportunities and contribute meaningfully to societal advancements.

In summary, effective problem-solving, continuous learning, work-life harmony, and technological proficiency are crucial for achieving professional and personal success. These interconnected skills not only enable us to address complex challenges but also promote personal growth and balance. By consistently developing and applying these competencies, we enhance our ability to drive innovation, increase efficiency, and contribute positively to society.

SDG Borneo Summit 2024: Advancing Sustainability Through Education and Inclusion

From 23 to 25 August, the SDG Borneo Summit 2024 transformed Curtin University Malaysia's into a vibrant hub of learning, collaboration, and inspiration. Organized by the Junior Chamber International (JCI) Lutong, in partnership with the Faculty of Engineering and Science (FOES) and the Miri City Council, the event was led by Associate Professor Dr. Lau Shiew Wei. The summit brought together participants from diverse backgrounds, united by a shared vision of building a sustainable future, with a particular focus on SDG 4: Quality Education.

Curtin University Malaysia played a key role in the summit, spearheading a series of meaningful activities that left a lasting impact on attendees. A standout was the exhibition *"Microplastics in the Environment"* by Prof. M. V. Prasanna, which shed light on the growing environmental crisis caused by microplastics and explored innovative solutions. Equally engaging were the workshops, including *"Embedding ESG in Your Business"* by Dr. Yong Leong Kong, which offered practical strategies for integrating Environmental, Social, and Governance (ESG) principles into business practices. The workshop *"Engineering Clean Water: Design and Build Your Own Water Filter"*, led by Dr. Lau Shiew Wei, Dr. Bridgid Chin, Ir. Jenney Ngu, and the IChemE Student Chapter, provided participants with hands-on experience in designing sustainable water filters—combining engineering knowledge with real-world applications for a more sustainable future.

Reflecting on the event, Associate Professor Dr. Lau Shiew Wei shared, *"It was truly inspiring to see people from so many walks of life come together to learn, share, and collaborate. Having individuals with special needs actively participate in our workshops was a powerful reminder that inclusivity is not just a goal but an essential part of making the SDGs a reality. Events like these reaffirm our commitment to building a sustainable and inclusive future for all."*

The SDG Borneo Summit 2024 was more than just an event; it was a celebration of the power of education, collaboration, and diversity in addressing global challenges. Through its efforts, Curtin University Malaysia continues to lead by example, inspiring individuals and communities to take meaningful steps toward achieving the United Nations Sustainable Development Goals.

1st Prize
FOES Community Engagement & Student Leadership Award

IEEE Makers, Automation, Robotics and Science Exhibitions

by IEEE Curtin Malaysia Students Branch

IEEE MARS, in collaboration with STEM Playground, is a national initiative aimed at promoting science, technology, engineering, and volunteerism in East Malaysia. In 2024, IEEE MARS, together with STEM Playground, take place at Pustaka Miri on 7–8 September 2024. Themed Innovating the Future through Science and Technology, the event is set to provide an innovative and interactive platform for students in primary and secondary schools across northern Sarawak. The primary objective of the event is to spark curiosity and inspire students to explore science and technology through interactive demonstrations and engineering showcases. By doing so, it seeks to raise awareness among youth and the wider community about technological advancements and the critical role of programming in shaping future innovators and problem-solvers. Additionally, IEEE MARS aims to encourage volunteerism among students, providing a platform for them to engage with local communities and solve real-world problems using technology.

2nd Prize
FOES Community Engagement & Student Leadership Award

STEM Community Outreach 2.0 & Engineering Camp 2.0

by Institution of Mechanical Engineering Curtin Malaysia Students Chapter

The STEM Community Outreach 2.0, organized by the IMechE Curtin Malaysia Student Chapter on 4 October 2024 at SMK Subis, aimed to inspire rural students from Form 1 to Form 3 in Science, Technology, Engineering, and Mathematics (STEM). Initially targeting 102 participants, the program successfully expanded to include an additional 30 students, bringing the total to 132. Led by Wiro Andy Anak Alfred with support from various volunteers and the organizing committee, the program provided both STEM knowledge and opportunities for leadership and event management development for the IMechE committee members. Five volunteers assisted in executing the event, which included hands-on STEM activities that inspired students and strengthened the organizational skills of the facilitators.

Figure: STEM Outreach 2.0 at SMK Subis

The Engineering Camp 2.0, held on 3 August 2024 at Curtin University Malaysia, was a significant community outreach initiative organized by the IMechE Curtin Malaysia Student Chapter in collaboration with the Curtin Malaysia IChemE Student Chapter, Curtin Civil Society, and TessLab Robotics Miri. The program aimed to nurture engineering interest and skills among 80 students from SMK St. Joseph and Kolej Tun Datu Tuanku Haji Bujang. Led by Natalya Mercy and her organizing team, the event featured a mix of technical and creative activities, such as LEGO robotics and hands-on engineering challenges. These sessions, combined with problem-solving activities, highlighted various engineering disciplines, including mechanical, civil, and robotics engineering. The event emphasized leadership, teamwork, and collaboration, with 40 volunteers from Curtin University working tirelessly to mentor students. The collaboration with TessLab Robotics Miri added a unique dimension by introducing participants to robotics engineering. The camp not only enhanced technical knowledge but also promoted critical thinking,

Figure: Engineering Camp 2.0

3rd Prize
FOES Community Engagement & Student Leadership Award

STEM Carnival

by IEM Curtin Malaysia Students Section

STEM carnival was targeted at around 1200 Form 1 to Form 6 students from SMK Luar Bandar Miri, which is located at the outskirt of Miri city, about 48km away from the town area. Due to the distance, the students from this rural area have less chance to be exposed to STEM related activities. Therefore, the club decided to reach out to this community and showcased various activities related to Science, Technology, Engineering, and/or Mathematics to instill interest in STEM among the students.

All the showcases were handled by the club committee members, from the brainstorming of ideas to the hands-on construction of the models, and eventually to the demonstration and explanation during the showcase at the school. The committee members demonstrated strong leadership, commitment, and teamwork throughout the event.

FOES Sustainable Student Project Award

KAWA-IEEE: An Autonomous Recyclable Waste Segregation and Management Robot

by IEEE Curtin Malaysia Students Branch

KAWA-IEEE is an autonomous robot designed for recyclable waste segregation and management. This robot can sort waste into categories such as aluminium cans, plastic bottles, paper cups, and general waste. Equipped with ultrasonic sensors, KAWA-IEEE detects when its compartment is full. Once full, it automatically disposes of the waste at a recycling centre. The robot moves autonomously to the recycling centre using LiDAR, a camera, and GPS for navigation. Users can interact with KAWA-IEEE through a simple user interface. By entering their phone number after recycling an item, users earn points. These points are recorded in a microprocessor and sent to a counter. Users can redeem points for rewards, such as drinks, once they reach a certain threshold. Recycling with KAWA-IEEE contributes to the fight against climate change by conserving energy and reducing pollution. Using recyclables minimizes the carbon footprint and lowers unhealthy greenhouse gas emissions over time.

1st Prize
FOES Student
Knowledge Transfer
Program (KTP)
Award

IEEE STEM Mentor program

by IEEE Curtin Malaysia Students Branch

IEEE CMSB recruited 25 mentors and provided them with a comprehensive training program specializing in Arduino skills. This initiative prepared the mentors to support secondary school students participating in competitions such as the Young Innovator Challenge (YIC) and the IEEE Science Challenge during the STEM Playground event. The training equipped mentors with practical knowledge of microcontrollers while enhancing their communication and teaching skills. The program included Arduino start workshops for beginners, covering basic circuit theory, Arduino usage, and sensor applications. These sessions were designed to be inclusive, catering even to students with no prior electrical knowledge.

Each mentor received an Arduino kit with a detailed guidebook and learning module, enabling them to effectively apply their skills in real-world projects. The mentors played a crucial role in assisting secondary school students from northern Sarawak participating in the competition. From March to September, they maintained consistent communication with participants, offering guidance and support. They also visited schools to foster collaborative learning and conducted Arduino start workshops tailored to the students' technical proficiency. By the end of September, IEEE had reached 22 schools across Miri, rural areas, Limbang, and Lawas, empowering students with creativity and innovation. This support enabled the students to complete their projects confidently and effectively present them to the judges.

2nd Prize FOES Student Knowledge Transfer Program (KTP) Award

EcoEngineering Symposium: Bridging the Waters

by Curtin Malaysia IChemE Student Chapter

The Curtin Malaysia IChemE Student Chapter, in collaboration with the IMechE Curtin Student Chapter, has invited students from SMK Pujut, SMK Chung Hua Miri, and Pei Min Middle School to participate in a multifaceted educational event. This initiative includes a Wastewater Treatment Plant Design Contest, an AUTOCAD Contest, and a career talk session aimed at promoting Science, Technology, Engineering, and Mathematics (STEM) education. The contests will challenge secondary school students (Form 1 to 5) to design and construct a wastewater treatment plant model, incorporating core engineering principles and environmental sustainability. The event aims to foster innovation, enhance problem-solving skills, and provide valuable exposure to the fields of Chemical and Mechanical Engineering. Through this experience, we hope to inspire the next generation of engineers and equip them with a deeper understanding of sustainable engineering practices.

Figure: Group photo

Figure: Students giving their opinion on "What is Energy Engineering?"

Figure: Dr Lau giving a Knowledge Transfer session before the actual contest

Figure: Committees giving mentorships to participants during the contest

3rd Prize
FOES Student
Knowledge Transfer
Program (KTP)
Award

STEM Engagement at MRSM Bintulu

by Curtin Malaysia IChemE Student Chapter

The Wastewater Treatment Plant Model Exhibition and VR Goggles STEM Project is designed to be a transformative educational experience, blending traditional model-based learning with modern virtual technology. It aims to foster a deep understanding of environmental systems, inspire innovation in water treatment technologies, and provide a platform for students to exchange creative ideas, research findings, and practical experiences. The project will feature a physical model of a wastewater treatment plant alongside immersive VR experiences to engage students in STEM concepts through an interactive and educational exhibition. The dual approach—physical and virtual—creates a multi-sensory learning environment where students can explore real-world applications of engineering and environmental technology. This project aims to promote knowledge transfer by combining hands-on learning with cutting-edge virtual technology. Set for 2024, this initiative focuses on secondary school students and leverages creative and innovative approaches to enhance their understanding of environmental science, engineering, and technology. Through this initiative, students will not only develop STEM skills but also gain a sense of responsibility towards environmental sustainability and the potential to impact real-world challenges.

4th Prize
FOES Student
Knowledge Transfer
Program (KTP)
Award

Educational Outreach and Knowledge Sharing at Hamidah Yakub

by IEM Curtin Malaysia Student Section

In an initiative aimed at sparking curiosity and love for Science, Technology, Engineering, and Mathematics (STEM), 55 children from the Hamidah Yakub Welfare Complex were treated to an engaging educational outreach programme, filled with hands-on activities and fun learning experiences. The event, held in collaboration between the Curtin Institution of Engineers Malaysia (IEM) Student Section, IEM-Young Engineers Section (YES) Miri Branch, and the Curtin Strikers Bowling Club, showcased the power of education to transform lives.

The half-day programme saw 17 dedicated volunteers from Curtin Malaysia joining forces to deliver a memorable experience for the children. They led the young participants through exciting STEM-based activities that not only introduced them to foundational engineering concepts but also fostered critical thinking and creativity.

A highlight of the day was the series of hands-on experiments, including building a Solid Bridge using Lego, exploring the wonders of Hydropower Generation, simulating a Volcano Eruption, demonstrating the mechanics behind Gear Ratios, and launching a Water Rocket to teach physics principles. These activities, designed to captivate young minds, were met with enthusiasm as the children eagerly took part, showcasing their budding interest in STEM.

Figure: Group photo of the IEM team with children from the Hamidah Yakub Welfare Complex

Figure: Children building a Solid Bridge with Lego during a hands-on STEM activity

Figure: Water rocket demonstration by Curtin IEM Student Section volunteers

TEACHING
Excellence

Curtin Academy Inductee
Professor Tang Fu Ee

Professor Tang Fu Ee, Curtin Malaysia's Dean of Learning and Teaching, has been inducted into the Curtin Academy as an Associate Fellow. The Curtin Academy has been established to recognise, reward, enable and extend excellence in teaching at the university, nationally and internationally. The Curtin Academy is a unique and vibrant community of academics and an active and honorary network of leaders who are committed to teaching excellence and the pursuit of the scholarship of teaching and learning at Curtin University. Inductees are selected based on their proven track record of leadership in learning and teaching and evidence-based research and/or scholarship in higher education.

Outstanding Contribution to Learning and Teaching Award
Associate Professor Raymond Chiong Choo Wee

Associate Professor Raymond Chiong of the Department of Electrical and Computer Engineering won an 'Outstanding Contribution to Learning and Teaching Award (Individual, Global, Campus)'. This award, introduced in 2023, recognises teachers at Curtin's global campuses renowned for the excellence of their teaching, who have outstanding presentation skills, and who have made a broad and deep contribution to enhancing the quality of learning and teaching. Award criteria include influence on student learning and the student experience, the breadth of impact of their works, their demonstrated creativity, imagination, and innovation and their collaboration and teamwork.

TEACHING
Excellence

Award for Teaching Excellence for University Associates
Professor Sujan Debnath

Professor Sujan Debnath of the Department of Mechanical Engineering at Curtin Malaysia's Faculty of Engineering and Science won an 'Award for Teaching Excellence for University Associates', a category of teaching award introduced in 2017 to recognize teaching excellence and the contribution to student learning by Curtin's global community of university associates who teach at the university's onshore and offshore locations, including Curtin Malaysia. Recipients are selected based on their approaches to teaching and the support of learning that influence, motivate and inspire students to learn. Professor Sujan was awarded on his merits of his teaching practices, which focus on explaining engineering concepts through industrial application. Student feedback in teaching evaluation surveys have reaffirmed his excellent command of subject matter and his adeptness in making them more comprehensible to students.

LITEC – Curtin Academy iSoLT Small Grant awardee
Dr. Saaveethya Sivakumar

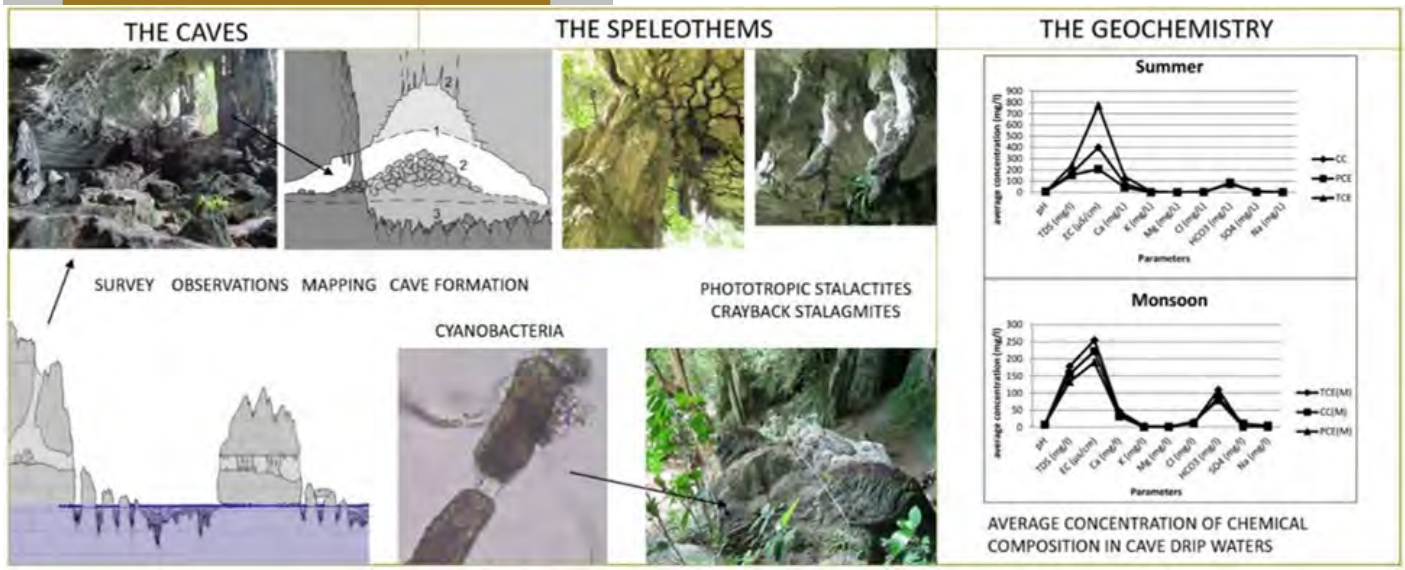
Dr. Saaveethya Sivakumar, a senior lecturer and programme coordinator for software engineering at Curtin University Malaysia (Curtin Malaysia), has been awarded Curtin University's prestigious 2024 LITEC – Curtin Academy iSoLT Small Grant in recognition of her outstanding research project titled 'Interactive Gamified Learning Platform for Curtin Global Campuses'. The LITEC – Curtin Academy iSoLT Small Grant was created to provide opportunities for projects that build capacity in innovative Scholarship of Learning and Teaching (iSoLT) for all teaching staff across all of Curtin's campuses and locations, improve the student experience, and realise the aims of the University's Vision 2030 and 2030 Strategic Plan.

Applied Geology Research at Niah (Caves, Speleothems, Geochemistry)

Curtin University Malaysia

RESEARCH

Strength & Success



Research Team

Dominique Dodge-Wan
M.V Prasanna
R Nagarajan
A Anandkumar
Deng Hui Min
Abbas MF

Research/Industry Partners

Research was conducted by academics and students in Applied Sciences Department (Curtin University Malaysia) under permit from Sarawak Forestry Corporation.

Research Description

Multi-disciplinary research carried out since 2011 using a number of methodologies: geological observation, survey and mapping above and below ground, study of speleothems including surface scraping for cyanobacteria, water sampling, drip water geochemistry.

Professor
Prasanna Mohan Viswanathan

Key Achievements

THE CAVES

- First detailed map and cross-section of Traders' Cave
- Identified wall notches at six levels, paragenetic grooves in ceiling
- Developed model of cave formation (speleogenesis)
- Mapped and described epiphreatic cave network

THE SPELEOTHEMS

- Identified and mapped cluster of crayback-like stalagmites in cave entrance
- Described various and new stalagmite morphologies
- Identified Geitleria calcarea on speleothem in Lower Painted Cave with mineral sheaths

THE GEOCHEMISTRY

- Influence of monsoon climate control the carbonate mineral-water equilibrium in the cave
- Ca-HCO3 is the most common water type, which indicate the dissolution of carbonate minerals
- Fractionation of drip water δ13C depends on the degree of degassing of water CO2 associated with cave air temperature.

Research Outcomes

[1] Prasanna M.V., Dodge-Wan D. (2024). Baseline survey of environmental parameters, radiation, and drip water hydrochemistry in Niah Caves (Sarawak, Malaysia), Environmental Monitoring and Assessment, 196, 954

[2] Dodge-Wan D. (2023) contributed to film commissioned by Sarawak Forestry Corporation, due to air on national television in 2023. She explains cave formation, speleothems and geoheritage value of the caves for general public.

[3] Dodge-Wan D. (2023) – The Outstanding Geology and Geoheritage of Niah Caves and Karst Area, Sarawak Museum Journal and invited speaker at International Conference on Niah NP for World Heritage Site Nomination (Miri, Sept 2022)

[4] Dodge-Wan D. (2018) – The Traders' Cave of Niah (NW Borneo): morphology and features as indicators of speleogenesis and karstification, Carbonates and Evaporites, 33: 315-329

[5] Dodge-Wan D., Prasanna M.V., Nagarajan R., Anandkumar A. (2017) – Epiphreatic caves in Niah karst tower (NW Borneo): occurrence, morphology, and hydrogeochemistry, Acta Carsologica, 46/2-3, 149-163

[6] Prasanna M.V., Chidambaram S., Nagarajan R., Anand Kumar A. (2016) – Monsoon climate impact on drip water geochemistry at Niah Great Cave, NW Borneo, Malaysia: Evaluating the Spatial and Temporal Trends, Journal of Climate Change, 2 (2), 89-98

[7] Prasanna M.V., Nagarajan R., Chidambaram S., Manikandan S., Elayaraja A. (2014) Drip water geochemistry of Niah Great Cave, NW Borneo, Malaysia: a base line study. Carbonates and Evaporites, 29, 41-54

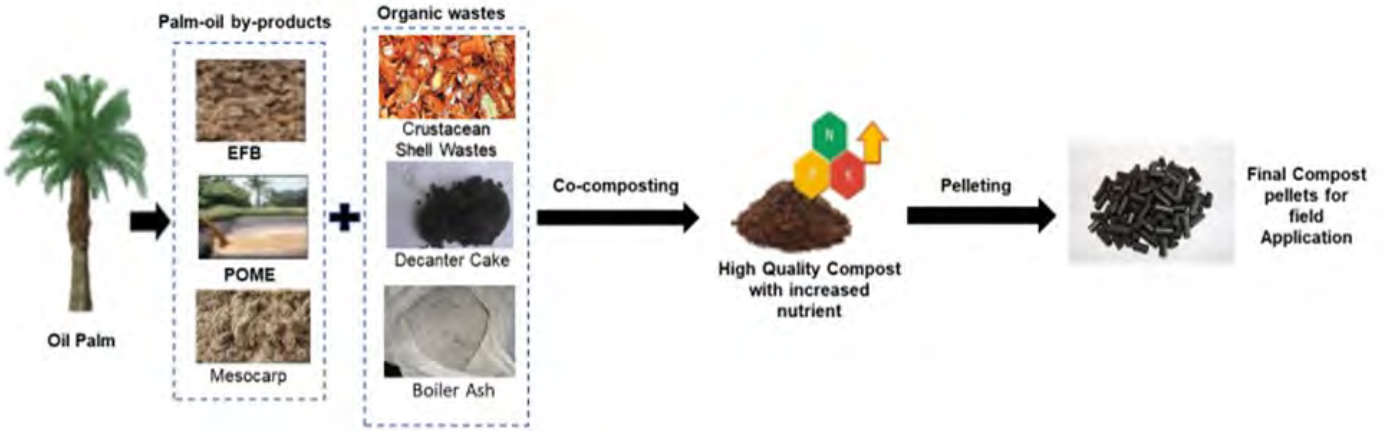
[8] Dodge-Wan D., Deng Hui Min A. (2013) - Biologically influenced stalagmites in Niah and Mulu caves (Sarawak, Malaysia). Acta Carsologica 42 (1):155-163. DOI: 10.3986/ac.v42i1.634

[9] Dodge-Wan D., Deng Hui Min A., Abbas M.F. (2012) – Occurrence and morphology of crayback-like stalagmites in the Painted Cave of Niah (Sarawak, Malaysia). Carbonates and Evaporites, 27 (3-4), 343-356

Bioconversion Towards zer0 palm wastes and wealth generation

Curtin University Malaysia

RESEARCH
Strength & Success



Research Team

Syngas projects: Hongmin Yan, Chandrasekaran, Alexandar Gorin, Chua Han Bing

Research students: Calvin Chok, Wee Siaw Khur, Bridgid Chin Lai Fui

Compost project: Chua Han Bing, Agus Saptoro, Freddie Panau, Jobrun Nandong, Aaron Goh.

Research students: Lai Jia Chi, Vivienne Sim Jie Wei, Sim Yun Kiat

Research/Industry Partners

Syngas projects: MOSTI, MPOB, Sarawak Shell

Compost project: Celtex Resources Sdn BhD and Wawasan Sedar Sdn BhD

Research Description

Curtin provided me with research seed funding in the early years of my academic appointment. My research had been stagnant in my previous employment. This funding incentive had given me a renewed impetus to reactivate my research work. My research journey began when I was invited to join the biomass gasification and syngas research team in 2006. The two ongoing projects were supported by MOSTI, MPOB and Sarawak Shell to develop the biomass gasification reactor and syngas cleaning technology. Being a biochemist by training, this research area was completely an unchartered territory for me, and my expertise was found wanting.

Associate Professor
Chua Han Bing

Figure: Combo pictures of CFBG prototype and pilot plant

Research Description (cont.)

More challenges arose when the 4-year research study took an unprecedented turn due to the premature departure of two key project leaders. I was assigned to undertake the lead, and it was 2 more long years before the projects came to an end. The period was punctuated with various issues ranging from HDR supervision, timeline constraints, project management and budget planning and progress report writing. However, with the deep commitment of the existing team members and research students, the needed administrative support from the Curtin R&D office, and exceptional teamwork, the projects were brought amicably to a fruitful conclusion. Despite the pain while going through in resolving the inadvertent issues, the knowledge and experience gained had been pivotal in extending my professional development as an all-rounder, more prudent, resilient researcher, and supervisor.

Personally, I have always dreamt of pursuing my research scholarship within my niche of expertise. Bolstered by earlier successes, I presented a research proposal to FRGS in 2011, but only to be rejected on the ground for not meeting the fundamental criteria. It was a significant setback for me and trying not to stare at the defeat, I plucked up the courage to present the research proposal to a local oil palm industry, not knowing that the failure to secure the FRGS grant was going to become a mother of success. No sooner than I had realized, a breakthrough came. The industry found favor in the research proposal, and with some mutual consultations, an MOA was drafted. MOA was signed towards end of 2011 between the oil palm industry and Curtin for the collaborative research study to analyze and optimize the conditions for high quality EFB compost production and development of the compost pellet for field applications. The research study commenced formally in 2012 based on a holistic and systematic approach involving process modelling study, physicochemical and biochemical studies including lab and field tests respectively to ensure the outcomes were scientifically substantiated and verified. A few challenges arose, including delay in the fabrication and requisition of equipment, however these issues were resolved amicably through mutual consultations with clients concerned while respecting each other's needs and requirements that were exemplified in the MOA. Towards the closure of the collaborative study, a summary of the findings and potential applications was presented to a 10-member delegates comprising of senior and managers from affiliated palm industries. The presentation also included a dialogue session to discuss how they can carry out the implementations and at the same time imparting awareness of their responsibility as global citizens to apply the eco-solutions to achieve sustainability and economic viability for the oil palm industries. I believe significant impact had been imparted to some key leaders of the oil palm community from the discussion session. Personally, the success of this research endeavor holds special significance for me as the proposal was conceived firsthand within the niche of my expertise. It brought me all the more a greater sense of achievement, purpose and fulfilment following the successful research journey. As for the future, while challenges and opportunity abound in palm-based research I believe, fostering strategic industry partnership and multidisciplinary collaborative research in valorization of palm byproducts holds the key towards net zer0 wastes and sustained wealth generation for the oil palm industries.

Key Achievements

- Demonstrating outcomes of positive impact in meeting the operational needs of oil-palm based industry partners for the quality compost production research.
- Enhancing research infrastructure and facilities with successful design and commissioning of the CFBG pilot plant, and Compost Bioreactor.
- Building research capacity and critical mass, and capability development of 6 HDR students.
- Quality research output that enhanced R&D reputation at Curtin Malaysia – producing 3 PhDs (one recipient of commendation letter from Vic-Chancellor for research excellence) and 3 MPhil graduates, with over 20 conference papers and Journal publications.

Research Outcomes

[1] Over 20 conference papers and Journal publications

Figure: Group photo during site visit to Wawasan Sedar Sdn. Bhd.
From left, Dr Chua, Sim Yun Kiat, Plant Manager, Manager, Mr Hiew, Mr Freddie

Figure: Compost Pelleting Plant

Interpreting sport science data using 3D imaging and Machine learning

Research Team

Dr Jonathan Phang Then Sien
Dr Basil Andy Lease
Dr. Saaveethya Sivakumar
Mr. Pang Po Ken
Associate Prof. Raymond Chiong Choo Wee

Research/Industry Partners

Research was conducted by academics, research fellows and research students in Computational Intelligence Centre Group under Curtin University Malaysia with the support of Sarawak Digital Economy Corporation, Malaysian Technology Development Corporation, Sarawak Sport Corporation and National Sport Institute.

Research Description

Powered by the recent advancement in machine learning and edge computing technology, a markerless-based Ai3D Computer-Aided Monitoring System (Ai3D-CAMS) is proposed to automate the process of joint kinematic data collection for posture correction and analysis during exercise. With the observation of joints information, posture profiling can be visualized to reduce the risk of injuring and increase self-awareness on one's physical performance. This product is a markerless-based human motion capturing system allowing the user performing their action in a natural manner without any discomfort of marker attachment. The setup of Ai3D-CAMS can be carried out at the indoor and outdoor environments since it requires one viewpoint setting and portable capturing device at the minimal calibration. It could extend to cover a full range of sport performance monitoring from sport training to rehabilitation.

Professor
Garenth Lim King Hann

Figure: APAC HPC-AI competition participants

Research Description (cont.)

The innovation of our product includes GPU-enabled fast inferencing deep learning model and single viewpoint standalone edge-computing device to retrieve full human object without occlusion in real-time manner. The development of mobile application enables users to view their exercise postures and performance benchmarking with experts to understand their physical performance and biomechanics profiling. The application of this product can be extended to 3D illustration software, AR/VR gaming and education field, sport arena and sport science and health sectors.

In a nutshell, this proposed Ai3D-CAMS comprises of four major elements;

(1) Frontend with web-app development and software Interface to display a biomechanics profile;

(2) Bridging with hardware to perform data acquisition using depth sensors;

(3) Backend processing using machine learning on 3D model reconstruction;

(4) Body motion analysis and co-op analysis for biomechanics science study.

Figure: Attendance to the Nvidia AI Innovation Day

Figure: Recipient of InTEX 2022 Silver Medal

Key Achievements

- Founder of Ai3D PLT
- Invention under Malaysian Utility Innovation #UI2022001881

Research Outcomes

- H-index - 21 (Google Scholar), 16 (Scopus), and 11 (WoS)
- Articles

Innovate design competitions

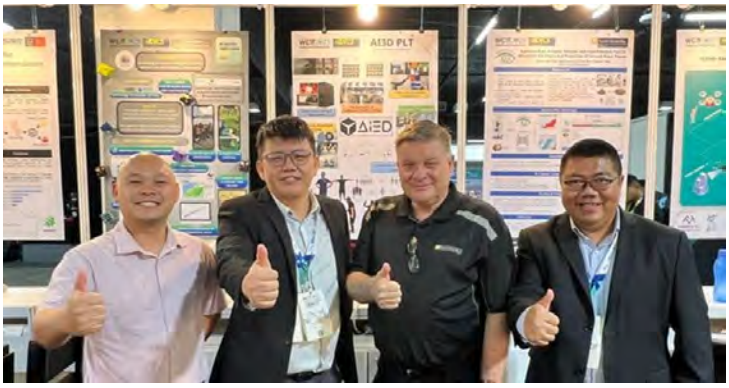
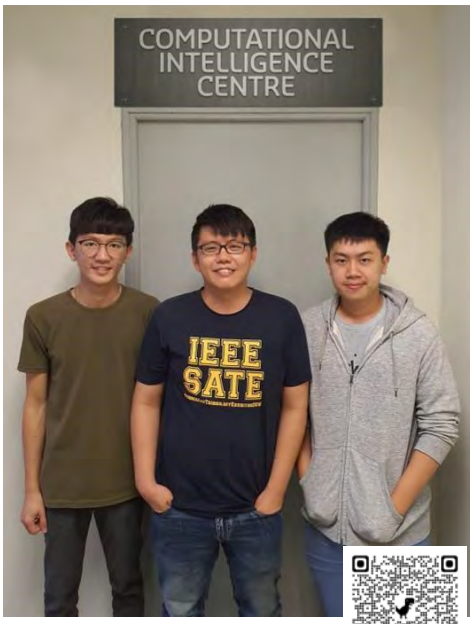


Figure: Panel Discussion: Setting the stage for research commercialization in WCIT2023



Computational Intelligence Centre

Innovate Malaysia

State and National Innovate design competitions

National Sports Technology Innovation Award (AITS) 2024

InTEX22
INNOVATION TECHNOLOGY EXPO

Intex22

Research Outcomes cont.

- Funding

⇒ **Year 2024**

Project Title: Development of Malaysia Context Large Language Model in Building Information System
Chief investigator funded by Sarawak Digital Economy Strategic Collaboration Research Grant (MYR211,000 3 years)
Project Title: A Wrist Worn Smart Sensor for Rehabilitation
Co-investigator funded by Sarawak Digital Economy Strategic Collaboration Research Grant (MYR142,930 3 years)
Project Title: Integrated 2D and 3D Deep Learning Pose Estimation Model in Personal Assistant Sport Supervision
Co-investigator funded by Sarawak Digital Economy Strategic Collaboration Research Grant (MYR185,000 3 years)
Project Title: Efficient Harvesting and Monitoring of Marine Microalgae Species using an Integrated Flotation-Flocculation Approach
Chief investigator funded by PETRONAS-Academia Collaboration Dialogue (MYR1,899,040 18 months)
Project Title: Sports E-Profiling Using Ai3D-CAMS
Chief investigator funded by National Technology & Innovation Sand Box 1 (MYR205,000 6 months)

⇒ **Year 2023**

Project Title: State Space Approach with Learning for Nonlinear Dynamical Systems
Co-investigator funded by Ministry of Higher Education (MYR 65000 2 years)

⇒ **Year 2022**

Project Title: Generative Learning Neural Model derived from Bayesian Theorem in Partial Point Cloud Reconstruction for 3D Semantic Object Segmentation and Classification
Chief investigator funded by Ministry of Higher Education (MYR 110,500 3 years)

⇒ **Year 2021**

Project Title: Sport E-profiling using AI-3DCAMS (Patent in progress) (CMRI-006034)
Chief investigator funded by Curtin Malaysia Research Institute Prototype Development Scheme (MYR 180,000 6 Months)
Project Title: Product Development and Prototyping of a Rapid, Reliable and Cost-Effective System to Detect Authenticity and Geographical Origin of Ground Black Pepper
Co-investigator funded by Curtin Malaysia Research Institute Prototype Development Scheme (MYR 200,000 6 Months)
Project Title: Estimation of Lower Extremity Muscles Activation Patterns during Walking using Wearable Wireless Inertial Sensors
Co-investigator funded by Ministry of Higher Education (MYR 122,300 3 Years)

⇒ **Year 2020**

Project Title: Development of a Rapid, Reliable and Cost-Effective Product Quality Estimation of Sago (Metroxylon sagu) based on Hyperspectral Images
Co-investigator funded by Sarawak Research & Development Council Grant Scheme (Catalyst) (MYR 171,950 3 years)

⇒ **Year 2019**

Project Title: Improving enzymes selectivity (reaction kinetics and mechanistic pathway) to increase bio-hydrogen yield from xylose
Co-investigator funded by Ministry of Higher Education (MYR 148,010 3 years)

⇒ **Year 2018**

Project Title: Development of Digital Platform for a Rapid, Cost-effective and User-friendly Detector and Estimator of Adulterants in Ground Sarawak Black Pepper
Co-investigator funded by Sarawak Multimedia Authority (MYR 100,000 2 Years)

Research Outcomes cont.

⇒ **Year 2015**

Project Title: Visual-based Computer-Aided Monitoring System (VCAMS) for Human Motion Abnormalities Correction (Project No.: 03-02-07-SF0035)
Chief investigator funded by Ministry of Science, Technology and Innovation (MOSTI) (MYR 115,500 3 years)
Project Title: Non-Linear Optimization Framework for Deep Learning Neural Network (FRGS/FASA1/2015)
Chief investigator funded by Ministry of Higher Education (MYR 75,000 2 Years)
Project Title: Design and development of a wavelet neural network architecture for wearable systems to predict kinematic gait parameters and identify pathological gait (Project no.: 0-02-10-SF0289)
Co-investigator funded by Ministry of Science, Technology and Innovation (MOSTI) (MYR 137,000 3 Years)

⇒ **Year 2014**

Project Title: Formulation of a robust, non-Gaussian algorithm used to develop adaptive soft sensors for sensing various states in industrial processing plants (FRGS/FASA2/2014)
Co-investigator funded by Ministry of Higher Education (MYR 82,000 3 Years)
Project Title: A New Logical Framework for Numerical Methods in Optimization, Nonlinear Algebraic Equations and Least Squares Problems (FRGS/FASA2/2013)
Co-investigator funded by Ministry of Higher Education (MYR 102,400 3 Years)
Project Title: Structural Settlement Sensor (Patented with PI2013001163)
Co-investigator funded by Ministry of Finance (MYR 148,000 2 Years)

⇒ **Year 2013**

Project Title: Computer Vision Algorithm Design, Development and Verification of Vulnerable Road user detection for Driver Assistance System (CSRI2013/Grants/02)
Chief investigator funded by Curtin Sarawak Research Institute (MYR 104,000 3 Years)

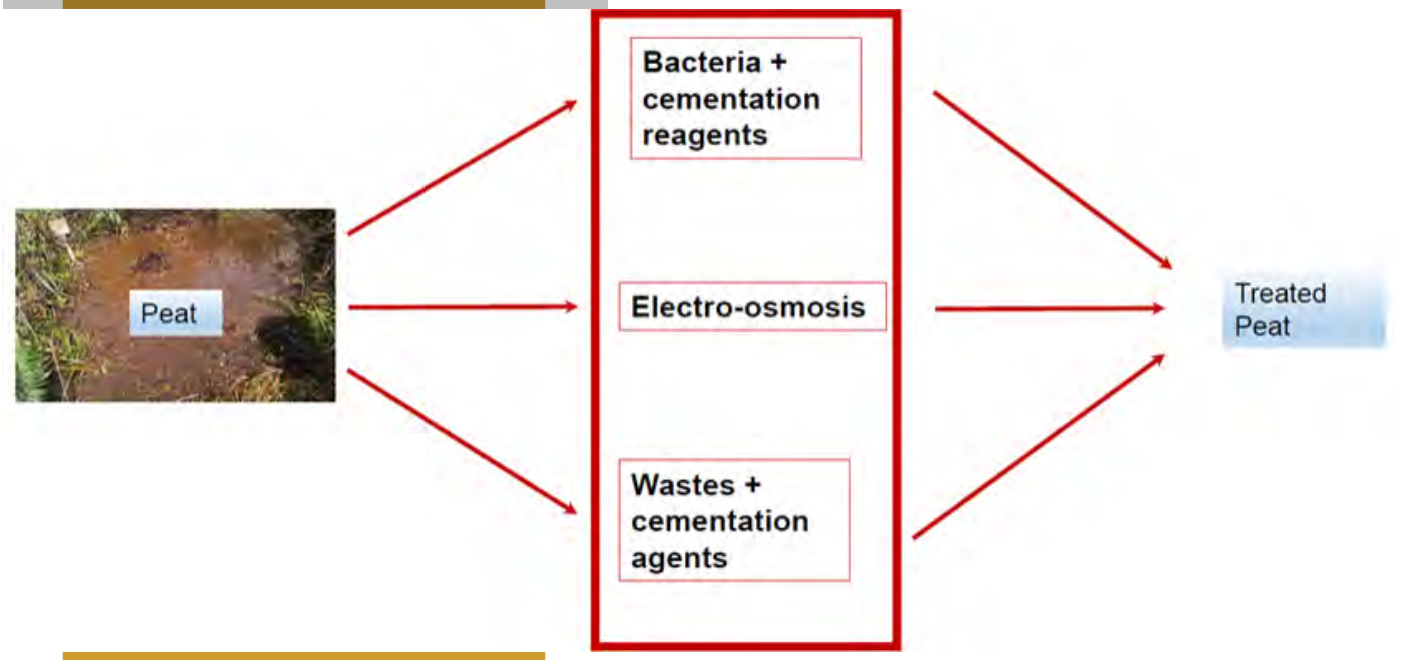
⇒ **Year 2012**

Project Title: Kinematic/Kinetic Analysis Foot and Ankle Motion using Wireless Inertial Sensors Networks for Real-time Intelligent Gait Abnormalities Identification (ERGS/1/2012/TK02/MUSM/03/2)
Co-investigator funded by Ministry of Higher Education (MYR 80,000 2 Years)
Project Title: Optimal Features Extraction for Traffic Sign Classification using Lypunov Theory-based Neural Network
Chief investigator funded by Curtin Sarawak Research Fund (MYR 10,000 1 Year)

A brief history of peatland research journey at Curtin Malaysia

Curtin University Malaysia

RESEARCH Strength & Success



Research Team

Prof. Dr. Ramasamy Nagarajan
Dr Low Wai Wah
Ms Fianita Anthony
Prof Stephanie Chan Yen San
A/Prof Dr John Lau Sie Yon
Dr Ignatius Phang Ren Kai
Dr Sharon Yee Jia Huey

Research/Industry Partners

People for Peat; JKRS, SRDC, FRGS

Research Description

- Starting involved in peatland research since 2014, supervising a PhD student working on electroosmosis treatment for peat to completion.
- Peat found in most of the towns in Sarawak is a problematic geomaterial with high compressibility and low strength. Gound improvement or replacement as well as pile embankment is needed to mitigate this problem. As a result, cost of construction increases.

Associate Professor
Wong Kwong Soon

- Considering the important of this problem, with courage, taking actions to apply and secure FRGS grant, aiming to improve the strength of peat using the bacteria from peat with the present of cementation agents. With the help of a PhD student, Dr Ignatius Phang, the methods resulted in significant improvement of strength of peat.
- To continue the journey, I apply and obtained another grant from SRDC, using industrial wastes to improve the strength of peat. This research potentially reuses the wastes and solve the problem for peat in construction.

Research Description (cont.)

- Our effort gained recognition from JKR Sarawak and SRDC, was invited to peat lab early of 2023 to discuss solutions to this problem.
- not just limited to construction, also involve in sustainability of peat as affiliate member of People for Peat, helping the stakeholders (farmers and business owners) working on peatland.
- continue working on peatland research. This is consistent with our 2030 strategic plan, to make a difference for people and planet. Currently establish collaboration with Sarawak Tropical Peat Research Institute.

Key Achievements

- In 2014, supervised a PhD student working on electroosmosis treatment on peat
- In 2015, Secured and completed a FRGS grant about peat treatment using bacteria – Project Title: Investigation on shear strength and consolidation behaviour of peat treated using microbial induced calcite precipitation
- In 2020, representing Curtin Malaysia as affiliate member for People for Peat, a coalition that represents the second component of the Sustainable Use of Peatland and Haze Mitigation in ASEAN (EU-SUPA) programme funded by European Union
- In 2021, Secured a SRDC grant about peat treatment using industrial wastes – Project Title: Use of Silicon Manganese Slag in geopolymerisation for peat Stabilization

Research Outcomes

[1] Phang, I.R.K., Wong, K.S., Chan, Y.S., Lau, S.Y. (2022). Effect of microbial-induced calcite precipitation towards strength and permeability of peat. Bulletin of Engineering Geology and the Environment 81.

[2] Phang, I. R. K., Chan, Y. S., Wong, K. S. & Lau, S. Y. (2018). Isolation and characterization of urease-producing bacteria from tropical peat. Biocatalysis and Agricultural Biotechnology Vol 13, 168-175 (ISI/SCOPUS Cited Publication).

[3] Phang, I.R.K., Wong, K.S., Chan, Y.S., Lau, S.Y., (2018). "Effect of microbial-induced calcite precipitation towards tropical organic soil" AIP Conference Proceedings 2020, 020011 (ISI/SCOPUS Cited Publication).

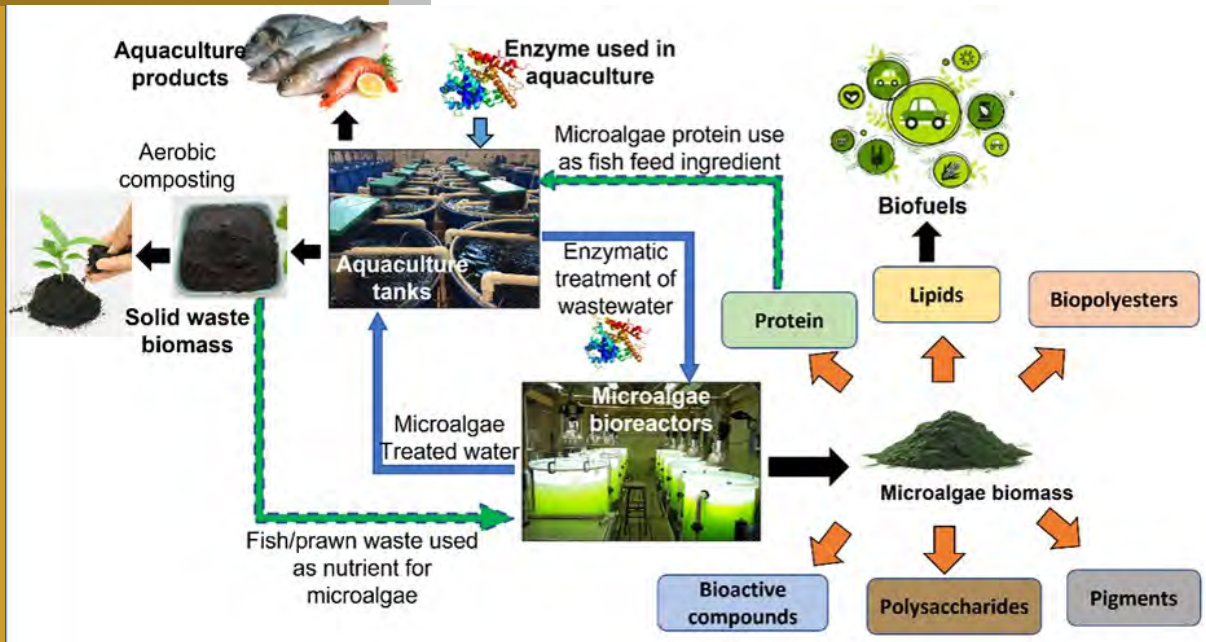
[4] Phang, I.R.K., Hwong, S.T., Wong, K.S. (2017). "Peat Stabilization with Calcium Chloride" One Curtin International Postgraduate Conference(OCPC) 2017, 10 - 12 Dec, 2017, Miri, Malaysia.

[5] Hlaing, M. M. S. & Wong, K. S. (2016). "One dimensional consolidation behaviour of peat subjected to electro-osmosis treatment" Proceedings of the 19th Southeast Asian Geotechnical Conference & 2nd AGSSEA Conference on Deep Excavation and Ground Improvement, 31 May - 03 Jun, 2016, Kuala Lumpur, Malaysia.

[6] Yee, J. H. S., Wong, K. S., Kaniraj, S. R. & Lau, H. H. (2014). "Effect of Voltage Gradient to Electro-osmotic Consolidation in Tropical Peat" Peat Technology: Opportunities and Challenges Seminar, Sibu, Malaysia, 1 Dec 2014.

Figure: Peatland in Curtin Malaysia

From Passion to Purpose: My Bioprocess Research Journey with Curtin Malaysia



Research Team

Prof. Tony Hadibarata, Dr Evelyn Chiong, A/Prof. Henry Foo, A/Prof. Tan Inn Shi, Dr. Tan Yie Hua, Dr. Jibrail Kansedo, Dr. Paran Gani

Research/Industry Partners

Prof. Azlina Harun @ Kamaruddin (Universiti Sains Malaysia)
Dr. Yap Pow Seng (Xi'an Jiaotong University)
Prof Lam Su Shiung (Univeristi Malaysia Terengganu)
Prof Show Pau Loke (Khalifah University)
A/Prof. Lam Man Kee (Universiti Teknologi Petronas)
A/Prof. Ts. Dr. Alan Ting Huong Yong (University Technology Sarawak)
Dr Derek Chan (Universiti Sains Malaysia)
Dr. Tan Toh Hii, Dr Hakim (University Putra Malaysia, Bintulu Campus)
Mr. David Kanniah (DK Global Tech Engineering Sdn. Bhd.)

Research Description

My research expedition commenced in 2013. I hold a strong enthusiasm for utilizing enzymes across a spectrum of purposes, including crafting eco-enzymes from waste materials for cleaning and biofertilizer uses. I have also delved into the synergy of enzymes with nanomaterials to enhance wastewater treatment. As of 2022, I embarked on an exciting endeavor to delve deeper into enzyme applications within aquaculture research, with the aim of enhancing sustainability and efficiency in aquaculture and microalgae co-cultivation.

Professor
John Lau Sie Yon

Throughout my research journey at Curtin Malaysia, I have received invaluable support from the Faculty and the Office of Research and Development. My initial foray into research began in 2013 when I was granted the Curtin Malaysia Research Institute (CMRI) grant, marking the commencement of my research with my first Higher Degree by Research (HDR) student. Together, we pioneered the development of a novel biopolymer-integrated enzyme for wastewater treatment, leading to the publication of three research papers. Subsequently, I took up the role of a co-investigator in various research projects.

Research Description (cont.)

In 2019, I was honoured to receive the Fundamental Research Grant Scheme (FRGS) from the Ministry of Higher Education (MOHE). This grant facilitated a comprehensive study on the fundamental kinetics of enzymes combined with nanoparticles for waste degradation, resulting in the graduation of two PhD students, the publication of seven research papers, and the receipt of three research awards.

In 2021, I was privileged to secure funding from the Sarawak State Resource Development Council (SRDC) to concentrate on wastewater treatment. This project focused on the development of a natural coagulant derived from fruit waste.

In 2022, I had the unique opportunity to collaborate with researchers from four universities, including the University Technology Sarawak (UTS), Universiti Teknologi Petronas (UTP), University Malaysia Terengganu (UMT), and the University of Nottingham Malaysia, thanks to a CMRI-matching grant totaling RM200,000. This collaborative effort aimed at creating a smart microalgae-aquaculture cultivation system.

In 2023, I obtained another grant for developing a project involving microalgae with biopolymers to remove high nitrate wastewater. This grant was awarded by the state of Selangor, allowing me to expand my research contributions beyond the state's borders. Currently, I am supervising four PhD students under these projects.
I embarked on an exploration of the potential applications of microalgae and aquatic plants in aquaculture. My efforts have encompassed a wide range of laboratory experiments, trials, and in-depth research. These have been concentrated on refining microalgae cultivation techniques at both bench-top and pilot scales, exploring diverse batch cultivation systems, and evaluating algae and plant growth under varying conditions. This research has fostered collaborations with fellow researchers from various universities, industry experts, and stakeholders. These collaborations aim to ensure that our research aligns seamlessly with the needs and demands of the community and society.

Research into enzyme application and nanotechnology within the context of aquaculture and microalgae holds the potential for a substantial positive influence on the community and society. For example, enzymes have the capacity to enhance the efficiency of aquaculture, thus lessening the industry's environmental footprint, fostering economic growth, and fostering innovative opportunities. Similarly, enzymes can elevate the yield of valuable compounds derived from microalgae, including proteins and lipids, which find applications in various sectors such as food, animal feed, and biofuels.

In my forthcoming research endeavors in the field of microalgae-aquaculture, I aim to develop an advanced system tailored to bolster production efficiency and sustainability within these industries. This could involve the identification of conversion processes that are exceptionally effective in extracting valuable compounds from microalgae, like proteins and lipids, all while minimizing waste and reducing the environmental impact. This research direction is in alignment with the United Nations Sustainable Development Goals (UNSDGs) and stands to make a significant contribution in this regard.

In summary, I am glad that Curtin Malaysia provides a supportive research environment that fosters collaboration, innovation, and excellence. The university offers state-of-the-art research facilities and equipment, funding opportunities, and industry partnerships to support researchers' work. Additionally, the university provides professional development and training programs that enable researchers to enhance their skills and knowledge.

Research Outcomes

[1] 2 copyrights
[2] 1 patent filed (under review)
[3] 80+ publications related to Nanobiocatalysts/enzyme applications in waste treatment and microalgae related research.

Figure: Extracted Food waste derived Eco-enzyme

Figure: Lab-scale microalgae cultivation

Figure: Collaboration visit to UMT

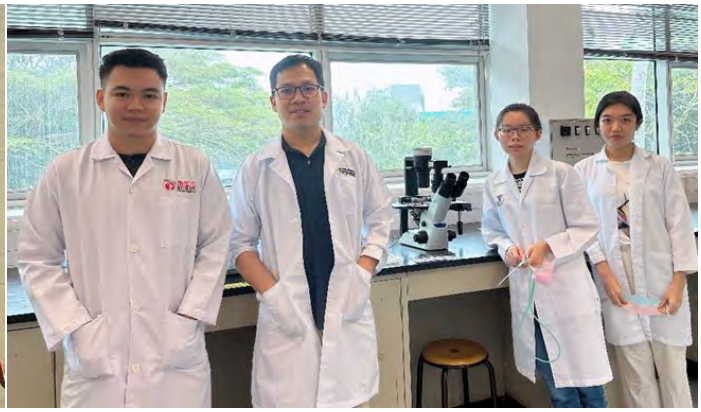


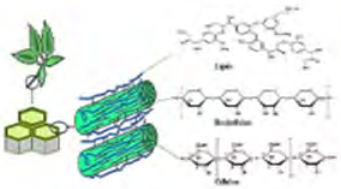
Figure: Hosting research skill transfer workshop with UPM researcher

Figure: Lunch with HDR students

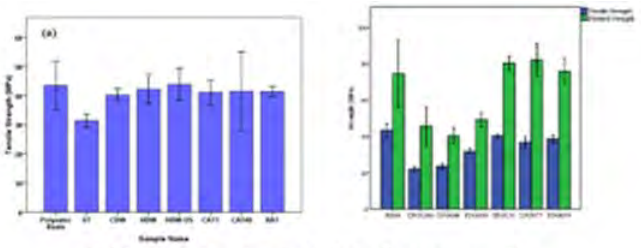
Key Achievements

- Received Yayasan Development Research Grant. Grant amount RM224,200. Principal Investigator.
- Receive Selangor State Fund (GPNS). Grant amount RM89,900. Principal Investigator.
- Award of Curtin Malaysia Research Institute (CMRI) Matching. Grant amount RM120,000. Principal investigator.
- FRGS Research Grant award 2019. Grant amount RM112,000. Principal investigator
- PECIPTA 2017 Research Award (Bronze award)
- PECIPTA 2019 Research Award (Bronze award)
- InTex2022 Research award (Silver Medal)
- PECIPTA 2022 Research Award (Gold Medal)
- CITREX 2023 Research Award (Gold Medal)

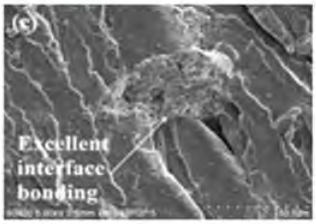
Mechanical Performance and Thermal Stability of Hybrid Composite Using Palm Oil Biomass and Carbon Nanotube

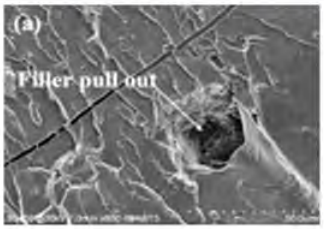


Structures of natural fiber

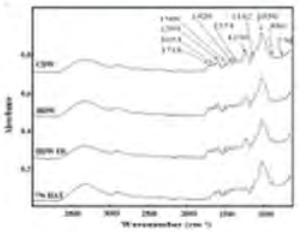


OPS powder treatment & size effect on strength

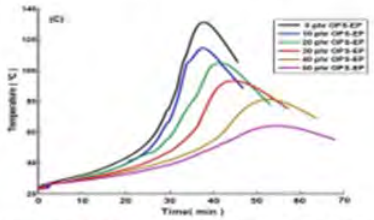




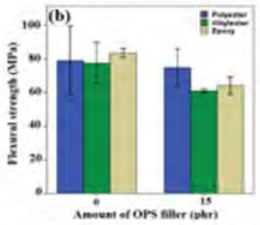
SEM Micrographs Characterisation



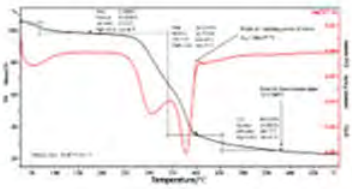
FTIR spectra of untreated and treated OPS



Untreated OPS loading on the curing reaction



OPS filler content on strength



TGA and DTG Analysis

Research Team

Omid Nabinejad
Sujan Debnath
Willey Liew Yun Hsien
Ian. J. Davies
Muhammad Ekhlasur Rahman

Research/Industry Partners

The research was conducted by the research student under the guidance of Dr. Sujan Debnath (Curtin University Malaysia), and external supervision by Dr Ian J. Davies at Curtin Australia and supported by Dr. Willey Liew Yun Hsien at University Malaysia Sabah.

Research Description

Despite the commercialization of natural fibre polymer composites, their mechanical performance currently limits their use in many industries. Nanoparticles such as nano clays, metal oxides, carbon nanotubes, and carbon nanofibers have the potential to enhance composites' physical, thermal, and mechanical properties. However, hybrid composites of natural fibres and nanoparticles have received less attention, despite numerous studies on nanocomposites and natural fibre composites individually.

Most research on natural fibres and nanoparticles has focused on nano clay, while carbon nanotubes (CNT) are less well-studied than other nanoparticles. Additionally, the development of thermoset polymer composites containing biomass from palm oil is relatively understudied compared to other biomass sources. Furthermore, the addition of oil palm shells (OPS) to natural fibre composites (NFC) or wood fibre composites (WFC) has not been investigated.

Professor
Sujan Debnath

Research Description (cont.)

This research aimed to synthesize a hybrid composite comprising thermoset resin reinforced with OPS and CNT to achieve optimal mechanical performance. Besides, the thermal stability of the composite has been quantified to determine the temperature range of application of the hybrid composite.

The specific objectives are as follows:

- To study the potential application of OPS, derived from palm oil biomass, as a filler in thermoset composite.
- To investigate the effect of filler size on the thermal stability and mechanical performance of NFC.
- To study the effect of filler content on the fabrication, thermal stability and mechanical performance of NFC.
- To develop a model to quantify the filler percentage in the NFC.
- To investigate the effect of filler treatment on the fabrication, thermal stability and mechanical performance of NFC.
- To study the effect of different thermoset matrices on the fabrication and mechanical performance of NFC.
- To study the potential application of CNT to fabricate OPS-CNT hybrid composite

Figure: Palm Oil Biomass (palm oil fiber and palm oil shell)

Research Outcomes

Book Chapter

[1] Nabinejad, O., Sujan, D., (2016) "Natural fiber reinforced polymer composites", Publisher: Wiley-VCH Veriag GmBH & Co. KGaA, of Boschstr, 12, 69469 Weinheim, Germany.

Journal Papers

[1] Nabinejad, O., Liew, W. Y., Debnath, S., Rahman, M. E., Cao, C., & Davies, I. J. (2019). Tribological behavior of unsaturated polyester hybrid composites containing wood flour and carbon nanotubes. SN Applied Sciences, 1(7), 777.

[2] Nabinejad, O., Sujan, D., Rahman, M. E., Liew, W. Y. H., & Davies, I. J. (2018). Hybrid Composite Using Natural Filler and Multi-Walled Carbon Nanotubes (MWCNTs). Applied Composite Materials, 25(6), 1323-1337. (Q2)

[3] Nabinejad, O., Sujan, D., Rahman, M. E., & Davies, I. J. (2015). Determination of filler content for natural filler polymer composite by thermogravimetric analysis. Journal of Thermal Analysis and Calorimetry, 122(1), 227-233. (Q2)

[4] Nabinejad, O., Sujan, D., Rahman, M. E., & Davies, I. J. (2015). Effect of oil palm shell powder on the mechanical performance and thermal stability of polyester composites. Materials & Design (1980-2015), 65, 823-830. (Q1)

[5] Nabinejad, O., Sujan, D., Rahman, M. E., Liew, W. Y., & Davies, I. J. (2018). Mechanical and thermal characterization of polyester composite containing treated wood flour from Palm oil biomass. Polymer Composites, 39(4), 1200-1211. (Q2)

[6] Nabinejad, O., Sujan, D., Rahman, M. E., & Davies, I. J. (2017). Effect of filler load on the curing behavior and mechanical and thermal performance of wood flour filled thermoset composites. Journal of cleaner production, 164, 1145-1156. (Q1).

[7] Nabinejad, O., Debnath, S., Ying, T. J., Liew, W. Y., & Davies, I. J. (2017). Influence of alkali treatment and nanoclay content on the properties of rice husk filled polyester composites. In Materials Science Forum (Vol. 882, pp. 89-100).

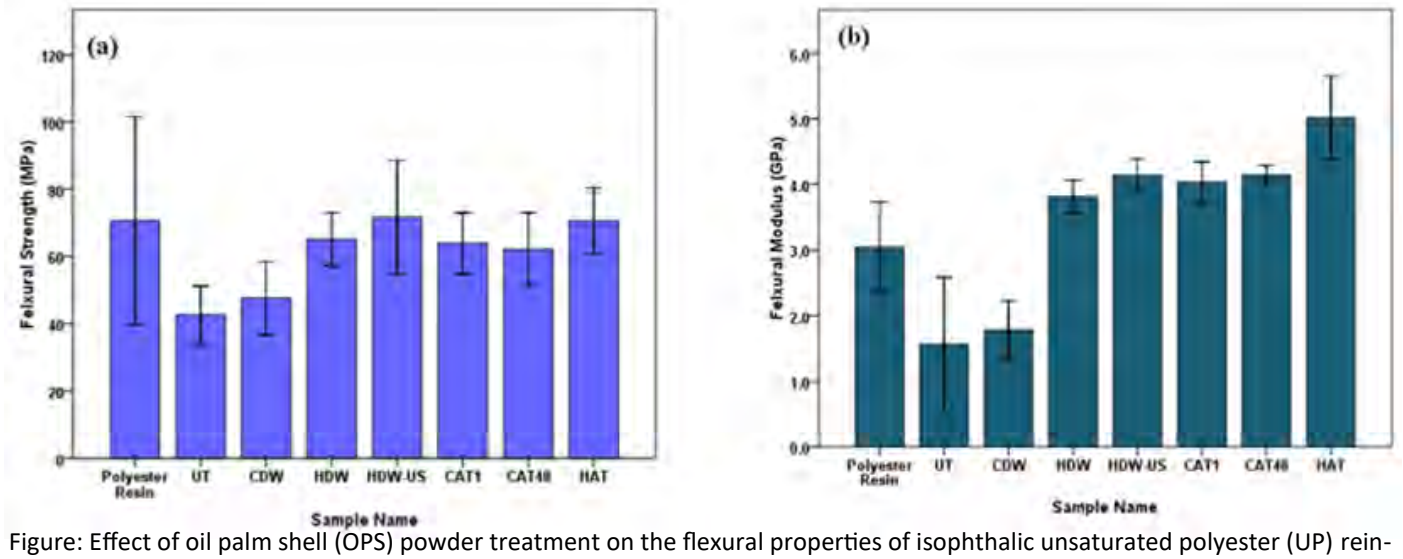


Figure: Effect of oil palm shell (OPS) powder treatment on the flexural properties of isophthalic unsaturated polyester (UP) reinforced with 5wt% of OPS: (a) strength and (b) modulus

Research Outcomes (cont.)

[8] Nabinejad, O., Sujan, D., Rahman, M. E., Reddy, M. M., Liew, W. Y., & Davies, I. J. (2014). The effect of alkali treatment of OPKS filler on mechanical property of polyester-composite. In Advanced Materials Research (Vol. 980, pp. 86-90).

Awards

- Bronze award for polymer composite research project in international conference and Exhibition on Invention by Institution of Higher Learning (PECIPTA 2017) in Malaysia.
- Best paper award, The Effect of Nanoclay on Rice Husk Particle Reinforced Unsaturated Polyester Composites, 9th CUTSE International Conference, Miri, Malaysia, 2014

Keynote/Invited Speech

- 2nd International conference on Materials technology and Energy (ICMTE2019), Curtin University Malaysia. Title, "Mechanical Performance of Natural Fibre Polymer Composites using Oil Palm Biomass".
- 8th International Conference on Material Science and Technology (ICMST2017), Hong Kong. Title, "Natural Fibre Reinforced Polymer Composites: Problems and Opportunities".
- 6th International conference on Manufacturing Science and Technology (ICMST2015), Brunei. Title, "Natural Fibre in Polymer Composites: Present Status and Future Opportunities".
- Invited speaker and resource person on the topic "Bio composite in Research", AICTE Margadarshan Online FDP on Outcome Based Education and Research Methodologies, India.

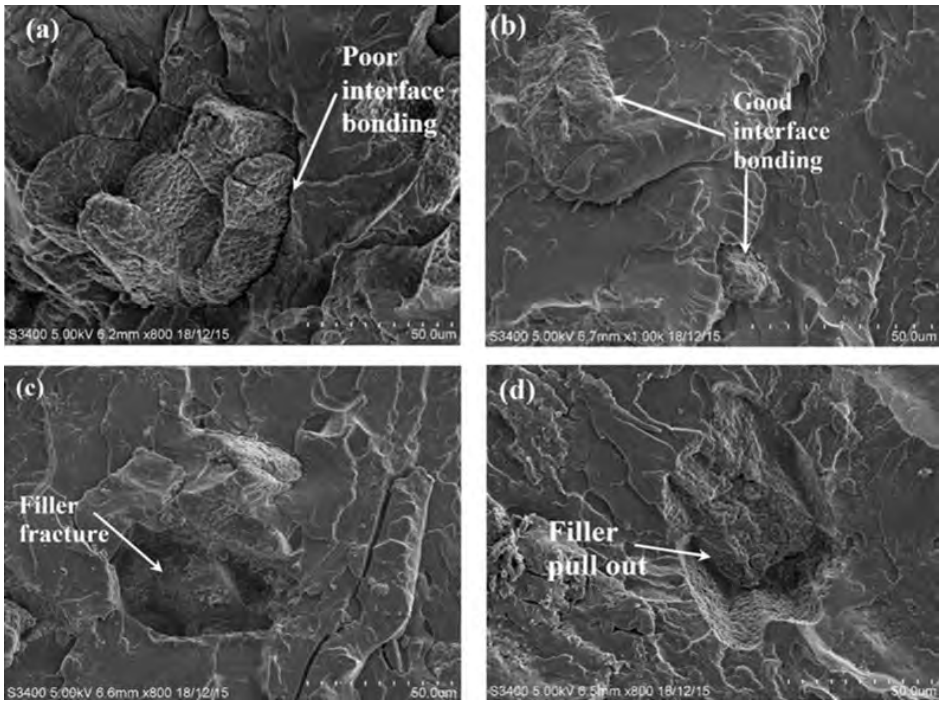


Figure: SEM image, effect of MWCTs content on the wettability of OPS powder by UP matrix (a) 0 phr (b) 0.2 phr, (c) 0.4 phr and (d) 0.6 phr MWCNTs

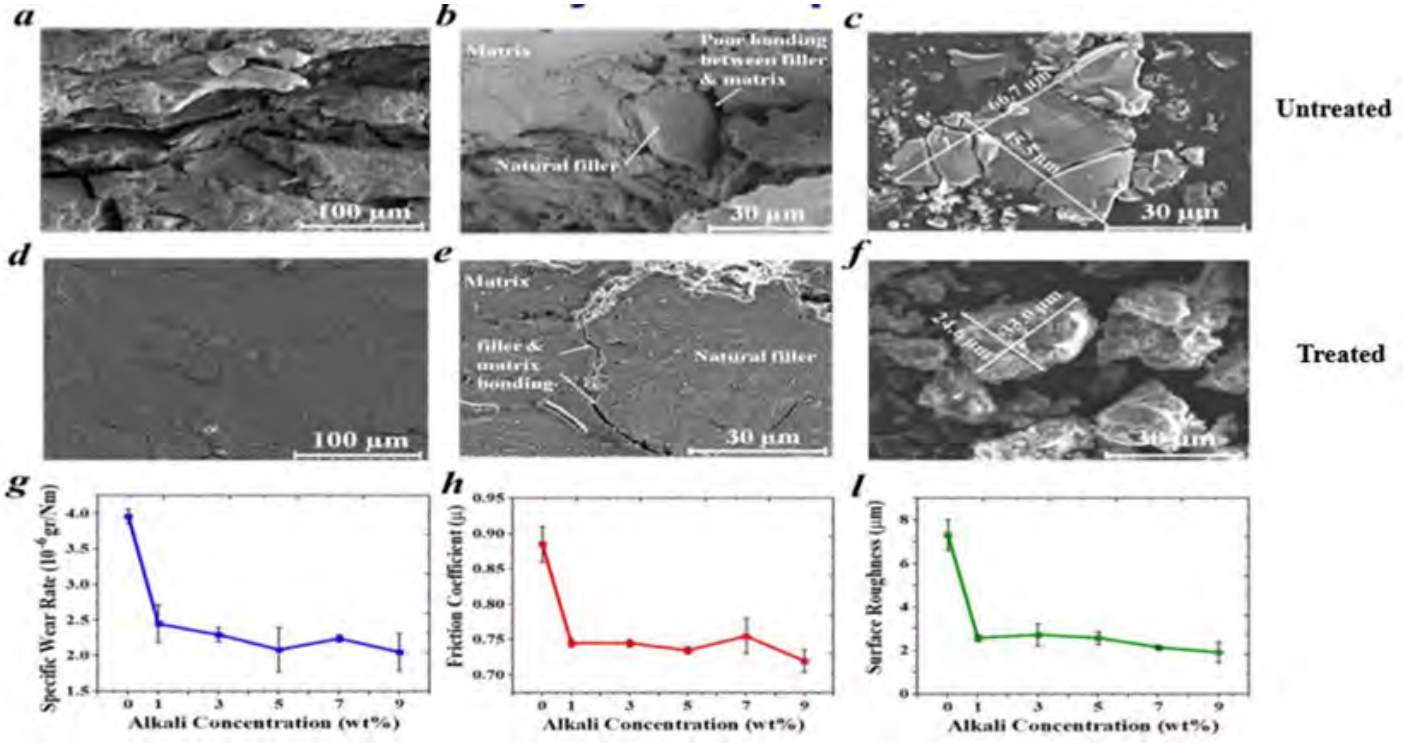
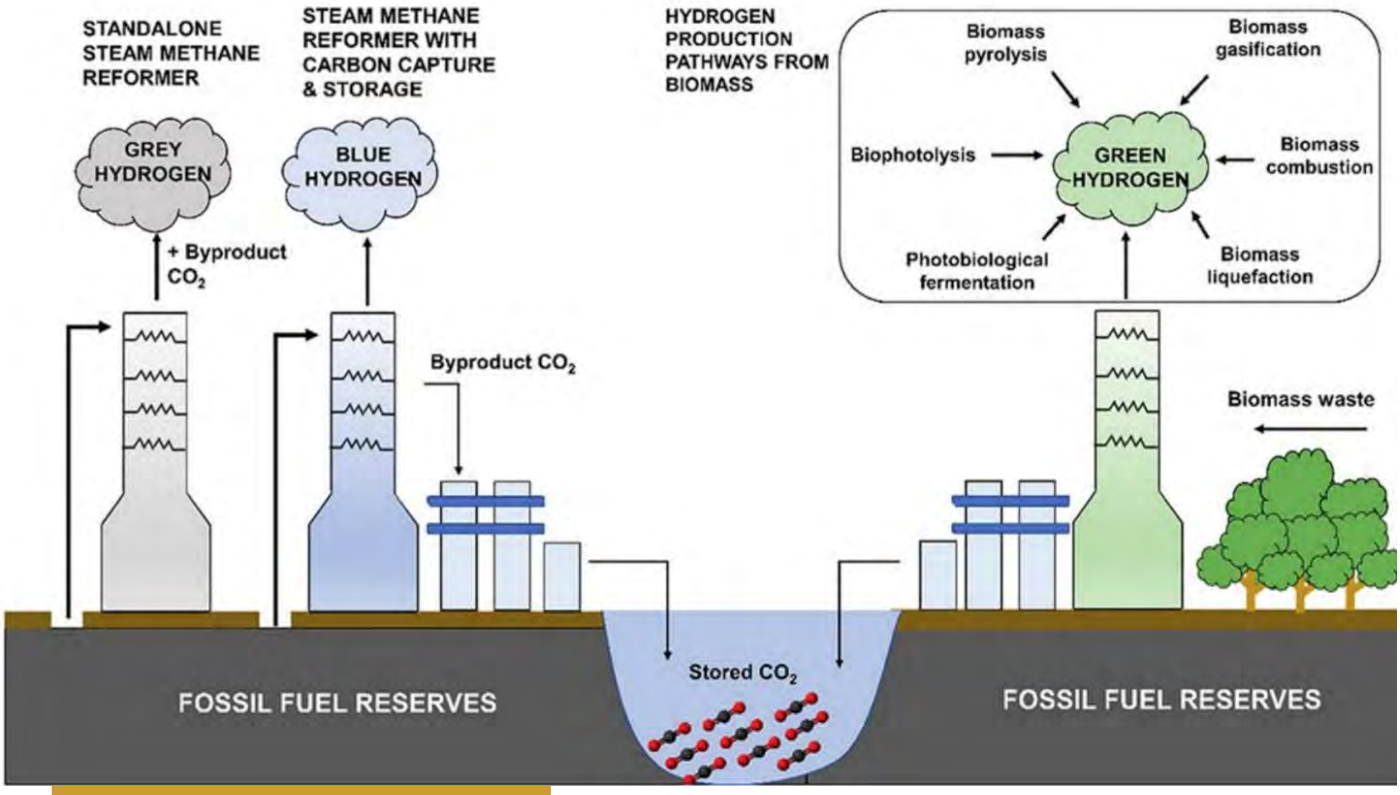


Figure: Effect of filler treatment on wear properties of palm oil shell polyester composite

Sustainable Production of Biofuels in the ASEAN Region from Oil Palm Residues



Research/Industry Partners

Tenaga Nasional Berhard Research (TNB) Research, PETRONAS Research Sdn Bhd, and Resilience Development Initiatives (RDI) Indonesia, Kumamoto University Japan, Chulalongkorn University Thailand, Silpakorn University Thailand, Mahidol University Thailand, King Mongkut's Institute of Technology Lakrabang, Monash University Australia, University Malaysia Terengganu (UMT), Teeside University United Kingdom, Universiti Malaysia Sarawak (UNIMAS), Swinburne University of Technology Sarawak campus.

Research Description

Associate Professor
Bridgid Chin Lai Fui

Dr. Bridgid Chin is an Associate Professor for Chemical and Energy Engineering Department for Curtin University Malaysia. She has successfully obtained her PhD from Universiti Teknologi PETRONAS (UTP) in year 2015. She is recognized for her creative contributions within the field of green technology particularly on the conversion of biomass and municipal solid wastes to renewable energy via thermochemical conversion which firmly focused on solving real-world problems particularly on mitigating climate change and developing clean energy. Over the years, she and her team achieved remarkable milestones. Their research had resulted more than 60 international journal publications and presented several papers in national and international conferences.

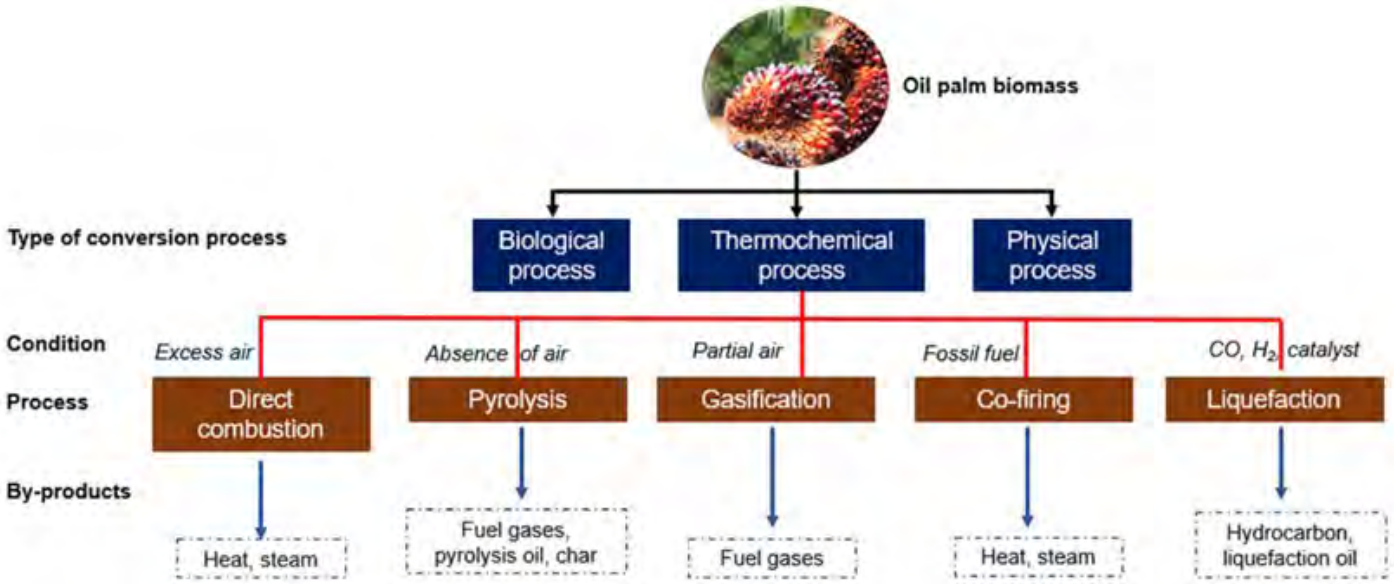


Figure: Description of overall conversion technology of biomass to biofuel.

Research Description (cont.)

She is currently collaborating with numerous international and national universities and industries such as University of Hull (UK), UTP (MY), Kumamoto University (JPN), King Abdulaziz City for Science and Technology (KSA), Resilience Development Initiatives (IDN), Chulalongkorn University (TH), PETRONAS Research Sdn Bhd (MY), Qatar University (QAT), National Center for Genetic and Biotechnology (TH), University of Phillippines Los Banos (PH), Monash University (AUS), Hamad Bin Khalifa (QAT) and others.

Dr Chin's and her team had been honored with several prestigious awards, including the Gold Award at the 25th International Invention, Innovation & Technology Exhibition (ITEX'14) for their groundbreaking work on converting plastic and agricultural waste to syngas. The accolades continued to pour in, with silver and bronze awards for their transformative research in pyrolytic oil production and syngas catalyst development.

Their journey was not just about accolades. Dr Chin's team had secured numerous research grants to continue their mission. The Japan-ASEAN Science, Technology, and Innovation Platform recognized their potential, providing funding for projects like the sustainable production of value-added products and energies from oil palm residues and plastic waste mixtures. Their work extended to upgrading bio□oil for sustainable jet fuel and catalytic fast pyrolysis of rice husk for syngas production.

Beyond research, they were active in the academic community. Dr.Chin and her team co-organized the 8th International Forum on Industrial Bioprocessing (IBA-IFIBiop 2019), a prestigious event that brought together experts from around the world to discuss advancements in bioprocessing, bioenergy, and environmental biotechnology.
Their commitment to sustainability also earned them the 10th Anak Sarawak Business Event Award in 2023. Dr Chin's team had successfully organized the IBA-IFIBiop 2019 conference, further cementing their reputation as leaders in the field of bioprocessing and sustainable energy.

In 2022, they achieved another milestone when they signed a memorandum of understanding (MoU) for research collaborations between Universiti Teknologi PETRONAS and Curtin University Malaysia. This collaboration aimed to strengthen their research efforts, fostering joint education, exchange programs, and academic conferences.
Dr. Chin's journey was a testament to the power of collaboration, innovation, and unwavering commitment to a sustainable future. Together with her dedicated team and supportive partners, they were on the path to revolutionizing the ASEAN region's energy landscape, one biofuel breakthrough at a time. Their work was not just research; it was a legacy of hope for future generations, a beacon of light in the quest for a cleaner, greener world.

Key Achievements and Research Outcomes (cont.)

(A) Awards and Grants

Research Awards

1. Sarawak Women in Innovation and Technology Award (2024), Sarawak Women's Day 2024, Kuching Malaysia, 3rd August 2024.
2. First Prize and Gold Award, EcoSynterra: In-Situ Transformation of Plastic and Agricultural Waste into Syngas, Miri Creativity, Innovation & Technology Exhibition (MCITeX), 16th October 2023 (2023).
3. Gold Award, In-Situ Conversion of Plastic and Agricultural Waste to Syngas (W2E) invention, 25th International Invention, Innovation & Technology Exhibition (ITEX'14), Kuala Lumpur Malaysia, 16-17 May 2014.
4. Silver Award, Fueling Sustainability: Transforming Waste to Pyrolytic Oil with Empty Fruit Bunch (EFB and Surgical Face Mask (SFM) Catalytic Co-Pyrolysis, Innovation Technology Exposition and Conference (InTEX23) 2023, Kuching Malaysia, 23-24 August 2023.
5. Bronze Award, Fueling the Future: Unlocking the Potential of Hydrochar Catalyst for Syngas Production, Innovation Technology Exposition and Conference (InTEX23) 2023, Kuching Malaysia, 23-24 August 2023

Research Grants

Title: Upgrading Microalgae Derived Bio-oils to Jet Fuel using Commercial Catalyst and Microwave-Assisted Fast Co-Pyrolysis Technology
Granting body: PETRONAS Academia Collaboration Dialogue 2023 grant (Co-Investigator) 2024-2026

Title: Click Chemistry for Smart Biodegradable Bioplastics using Bacterial Cellulose: Enhancing Control and Sustainability
Granting body: Fundamental Research Grant Scheme (FRGS) (Co-Investigator) 2024-2027

Title: Sustainable Utilisation of Sarawak Bamboo-Biowaste Derived Activated Carbon for High Performance Supercapacitor and Soil Remediation
Granting body: Sarawak Research Development Council (SRDC) (Principal Investigator) 2023-2026

Title: Sustainable Production of Value-Added Products and Energies from Oil Palm Residues and Plastic Waste Mixtures in the ASEAN Region (Principal investigator), 2023-2024.
Granting body: Japan-ASEAN Science, Technology, and Innovation Platform

Title: Upgrading of Bio-Oil Targeting Sustainable Jet Fuel Range and Its Implementation Study in ASEAN Japan (Principal investigator), 2021-2022.
Granting body: Japan-ASEAN Science, Technology, and Innovation Platform

Title: Sustainable Production of High-Quality Bio-Oil from Different Agriculture Wastes in the ASEAN Region through Catalytic Fast Pyrolysis (Principal Investigator), 2019-2020.
Granting body: Japan-ASEAN Science, Technology, and Innovation Platform

Title: Sustainable Production of Biofuels in the ASEAN Region from Oil Palm Residues (Co-Investigator, 2018-2020)
Granting body: ASEAN Science and Technology Innovation Fund (ASTIF) Grant

Title: Immobilization of Plastics-Degrading Enzymes on Carbon Nanotubes for Efficient Degradation of Microplastics in Aqueous Environment (Co-Investigator), 2021-2023.
Granting body: United International College Grant

Title: Upgrading of Bio-Oil Targeting Sustainable Jet Fuel Range and Its Implementation Study in ASEAN Japan (Co-Investigator), 2020-2023.
Granting body: Yayasan Universiti Teknologi PETRONAS (YUTP) Grant

Title: Catalytic Fast Pyrolysis of Rice Husk for Syngas Production (Co-Investigator, 2017-2020).
Granting body: International Foundation of Science

(B) Successfully co-organised 8th International Forum on Industrial Bioprocessing (IBA-IFIBiop 2019) in collaboration with Universiti Teknologi PETRONAS (UTP) and International Bioprocessing Association (IBA) on the 1st-5th May 2019

The 8th International Forum on Industrial Bioprocessing (IBA-IFIBIOP 2019) is an international conference focuses on developments in the areas of industrial bioprocesses and biotechnology. Themed "Bridging Sustainability and Industrial Revolution through Green Bioprocessing", this conference brings together scientists, engineers and experts to deliberate on developments in the fields of bioenergy and biofuels, food technology and engineering, industrial biotechnology, environmental biotechnology and upstream and downstream bioprocesses. The conference aims to provide a platform for participants from various industries and academic institutions to share thoughts and views on the bioprocesses and biotechnology, while developing research connections and networking. Initiated in 2004 when the first conference was held in Clermont-Ferrand, France, it is one of the world's most prestigious networking forums, attracting participants from across the world. This is the first time the international conference will be held in Malaysia, specifically in Miri, Sarawak. The five (5) days conference had attracted an average 179 participants from over 25 countries worldwide. Also present at the conference were Mayor of Miri Adam Yii, UTP Vice-Chancellor cum patron of IBA-IFIBiop 2019 Professor Mohamed Ibrahim Abdul Mutalib, Curtin Malaysia Dean of Research and Development Professor Clem Kuek, International Bioprocessing Association (IBA) President Professor Duu Jong Lee, IBA International Coordinator Professor Ashok Pandey, IBA-IFIBiop 2019 chair Professor Suzana Yusup, IBA-IFIBiop 2019 co-chair Dr Bridgid Chin Lai Fui, and Acting Dean of Curtin Malaysia's Faculty of Engineering and Science Associate Professor Vincent Lee Chieng Chen.

Technical Workshop

IBA-IFIBiop 2019 Conference

C) Won 10th Anak Sarawak Awards 2023 for successfully organising IBA-IFIBiop 2019 conference

Winner, 10th Anak Sarawak Business Event Awards – Convention of Excellence Award, 27th April 2023 (2023) for co-organizing 8th International Bioprocessing Association (IBA) International Forum on Industrial Bioprocessing (IBA-IFIBiop 2019) conference with Universiti Teknologi PETRONAS. The five-day IBA-IFIBiop 2019 was attended by 165 delegates from 27 countries and featured seven keynote speakers, 48 invited speakers and more than 170 presentations. With the theme 'Bridging Sustainability and Industrial Revolution through Green Bioprocessing', IBA-IFIBiop 2019 was divided into five tracks, namely Bioenergy & Biofuels, Environmental Biotechnology, Food Technology & Engineering, Industrial Biotechnology and Upstream & Downstream Bioprocesses.

D) International Research Collaborations in Thailand and Philippines

Figure: Research Networking and Workshop session organised by International Foundation of Science (IFS) and Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) in year 2017.

Figure: Research collaborations with researchers in Malaysia (Prof Ir Suzana Yusup, Dr Adrian Loy Chun Minh, and Dr Bridgid Chin Lai Fui), Thailand (Dr Pornkamol Unrean, Indonesia (Dr Elisabeth Rianawati), and Philippnes (Prof Menandro N. Acda) and meeting at National Center for Genetic Engineering and Biotechnology (BIOTEC) (Thailand) in 2018.

Figure: Physical participation in the 8th JASTIP-WP2 Annual Workshop on the 9th January 2023 in National Science and Technology Development Agency (NSTDA), Thailand. Dr Bridgid Chin was invited as an invited speaker for this workshop.

Figure: Courtesy Visit to Chulalongkorn University Thailand and research progress update on JASTIP-Net grant (8th January 2023)

Figure: Having brainstorming research session with Prof Menandro N. Acda from University of in Los Baños, Philippines and attending he workshop session on mentoring in collaborative research organised by Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) on 20-21 November 2018.

Figure: Renewable Energy team for the International Foundation Science research grant

E) Successfully signed MoU for research collaborations between Universiti Teknologi PETRONAS and Curtin University Malaysia on 8th August 2022

The collaboration includes joint education and research activities, staff and student exchange programmes, exchange of academic materials and publications, and joint organising of academic and scientific conferences and symposia.

The virtual signing ceremony hosted by UTP's Vice Chancellor Prof. Ts. Dr. Mohamed Ibrahim Abdul Mutalib and Curtin Malaysia's Deputy Pro Vice-Chancellor Prof. Vincent Lee Chieng Chen, representing Pro Vice-Chancellor, President and Chief Executive Prof. Simon Leunig, signing the document on behalf of their respective universities.

Signing as witnesses were UTP's Chief Strategy Officer Zaimizi Hamdani and Curtin Malaysia's Dean of Faculty of Engineering and Science Prof. Tuong-Thuy Vu.

Figure: MoU signing virtually between Universiti Teknologi PETRONAS (UTP) and Curtin University Malaysia.

F) Recent Research Awards

Figure: Award recipients from Curtin Malaysia in Innovation Technology Exposition and Conference (InTEX23) 2023, Kuching Malaysia. Dr Bridgid was awarded a silver and a bronze on her research invention in InTEX 23 in Kuching Malaysia.

Engagement
And Partnership

Alumni Gathering

MOU with PETROS

2nd Borneo Infrastructure Symposium 2024

Engagement
And Partnership

Hydrogen testbed and refuelling station project

GECOST 2024

Amazing Videos

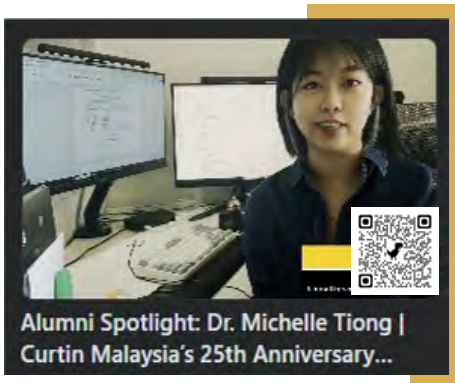
INTRODUCTION: Celebrating 25 Years of Excellence

Amazing Videos

ALUMNI SUCCESS

Alumni Spotlight: Sajina Ujan

Alumni Spotlight: Fabliha Bushra

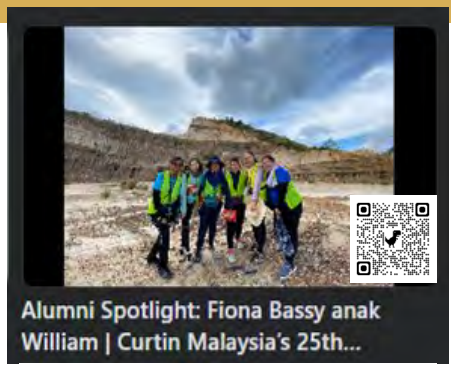


Alumni Spotlight: Dr. Michelle Tiong

Alumni Spotlight: Jerin George Thomas

Alumni Spotlight: Gerald Prawira

Alumni Spotlight: Nadzim Al-Rash bin Putit



Alumni Spotlight: Fiona Bassy anak William

Amazing Videos

STUDENT ACTIVITIES AND COMMUNITY OUTREACH

SEB Tree Planting and Student Engagement

Sarawak Energy Berhad Tree Planting

STEM Trailblazers

Tech-O-Wheel & STEM Playground highlights!

STEM Playground

Transform plastic waste into eco-bricks with Curtin Malaysia's IChemE Student...

Transform to eco-bricks

EXTERNAL ENGAGEMENT

Flashback to the International Conference on Energy Transition and...

The Flash on Energy Transition

External Engagement

Amazing Videos

LEARNING AND TEACHING

Celebrating 25 Years of Excellence in Applied Sciences at Curtin University...

[Applied Sciences]

[Futuristic Leaders]

[Curtin Malaysia's Lab Facilities]

[Capstone Computing Power]

[Commitment to Quality Education]

Environmental Engineering at Curtin Malaysia | Curtin Malaysia's 25th...

[Environmental Engineering]

Insights into Learning and Teaching Excellence at the Faculty of Engineerin...

[Insight Learning and Teaching]

Exploring Educational Innovation: Dialogue on Inclusive Learning

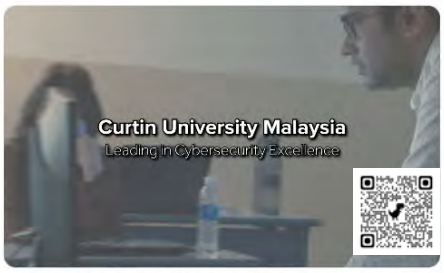
[Inclusive Education]

Amazing Videos

RESEARCH AND DEVELOPMENT

[Advance in Energy Transition]

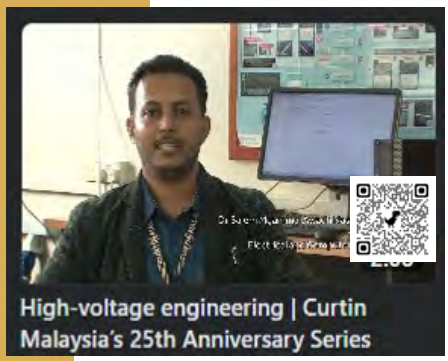
[Peatland Tackle Expert]



[Cybersecurity Initiatives]

[Innovations in Sustainable Technology]

[Breakthrough #AI3D]



[High-Volts Engineering]

Every contribution to
this newsletter is highly valued

Thank You!