

SYNC

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Academia and Industry: From Separate Paths to Shared Ground

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Foreword from Deputy Head of School (Research)

When the School of Engineering at Monash University Malaysia was established in 1998, our research journey was very different from today. In the early years, we relied largely on internal university funding to support our research activities before progressively securing government research grants to further build our research capabilities. Over time, the research landscape has changed significantly, with industry now becoming an increasingly important partner in our academic research. The School of Engineering has embraced this change. We have developed strong and productive relationships with many industries, ranging from small and medium enterprises to multinational corporations. Over the past three years, our industry grants have consistently accounted for more than 70% of the School's total research funding. Industry collaboration also provides tremendous opportunities for our students, both undergraduate and postgraduate, to work on real-world engineering challenges. This enables our students to learn not only how to generate new knowledge, but also how that knowledge can be translated into solutions that matter to society and industry.

Research should also not stop at invention or the development of solutions. We should think about how to take our discoveries and inventions further through entrepreneurship and commercialisation. At the School of Engineering, we are increasingly supporting commercialisation efforts, including licensing, startup and spinout formation. We have established a School Innovation and Enterprise Committee to focus on this area. Five start-ups have already been founded by our academic staff, and we hope to see many more success stories in the future.

At the same time, this raises a critical question: is our academic research becoming too focused on applied research at the expense of advancing fundamental knowledge? The answer is no. Fundamental research remains essential in the School of Engineering, as it provides the basic building blocks for applied knowledge and is an integral part of academic research for the advancement of science. As an engineering school, however, we cannot ignore the fact that translating knowledge into practical applications is equally important for industry adoption and societal impact. However, industry-academic collaboration must be undertaken responsibly. Industry and academia naturally have different priorities: industry often seeks timely and practical outcomes, while academics value exploration, rigour and intellectual freedom. Where an industry partner expects significant rights to the intellectual property arising from a project, we should expect the industry partner to provide funding and other contributions commensurate with those rights. Equally important, we must ensure that our students are not taken for granted in industry projects, and that the rights and legitimate interests of both researchers and students are protected. Ultimately, successful collaboration requires mutual benefit, trust and respect. Academia brings knowledge, creativity and talent; industry brings real-world challenges, resources and pathways to implementation. When these strengths come together, research can be both intellectually meaningful and practically impactful. The School of Engineering will continue to strengthen its engagement with industry in the years ahead, as this is an important part of our commitment to advancing engineering practice and creating meaningful impact.

Prof Ir Dr Chai Siang Piao

Deputy Head of School (Research)
Vice-Chancellor's Distinguished Professor
School of Engineering



Meet THE TEAM



Bottom row (from left to right):

Mohammed Aktaruzzaman Hasan (GRS) - Journalist

Dr Mohammed Ayoub Juman - Advisor

Ng Jian Yew (GRS) - Editor

Dr Tan Wen Shan - Advisor

Top row (from left to right):

Tan Wen Jian (GRS) - Journalist

Hasminah Abbas (GRS) - Designer

Noor E Hira (GRS) - Journalist

Hanin Izzeldin (GRS) - Co-editor & Journalist

Jalal Krayem (GRS) - Media & Publicity

Editor's Note

Welcome to the 17th issue of SYNC, themed "Academia and Industry: From Separate Paths to Shared Ground" As the research newsletter of the School of Engineering at Monash University Malaysia (MUM), we take pride in showcasing the groundbreaking work carried out by our esteemed academicians. We hope this edition proves as insightful for you to read as the making has been rewarding for us.

This edition traces a shift that has reshaped engineering research over the years: the narrowing distance between the laboratory and the factory floor. Industry funding has grown from an occasional supplement into a shaping force, and the effect on how we work runs deep; project scopes now arrive with commercial timelines attached, deliverables are judged against operating conditions rather than ideal ones, and questions once deferred to "future work" have become the very substance of the grant. Our faculty and postgraduate researchers reflect on this evolution through contributions on translational projects, co-funded programmes, and the practical hurdles of moving a prototype from bench to deployment. Several pieces also examine what the change asks of us as educators, and how the ties built with industry partners are giving our graduates a clearer path through the uncertain months after submission. Supervisors and students are learning to carry a piece of work past publication and into the field, an ability that no thesis chapter teaches on its own.

We have likewise spotlighted recent events, both on and off campus, hosted or attended by MUM academicians. Your ideas, suggestions, and proposals for collaboration are always welcome, and we invite you to reach out. Our committee continues to grow, and our newly launched social media channel offers another way to follow along.

On behalf of the SYNC team, thank you for your continued interest in science. We hope these pages spark fresh curiosity and offer a new vantage point on the partnership between the academy and the wider engineering world. We wish you an inspiring and productive day ahead!

Let us **SYNC - Say Yes 'N' Collaborate.**



JIAN YEOW

Editor

SYNC Newsletter

mum.sync.soe@monash.edu

Academia vs Industry: Is the *Divide* Still Real?



Prof Chan Eng Seng
MIPO Biorefinery Laboratory
Department of Chemical Engineering

Professor Chan Eng Seng is a Professor in the School of Engineering at Monash University Malaysia and Director of the MIPO Biorefinery Laboratory. His research focuses on sustainable bioresource processing and valorisation for applications in food, fuels, and renewable chemicals. Prof Chan's impact extends beyond academia into industrial translation and societal impact. He has led numerous industry-funded research projects in collaboration with multinational companies and, most recently, founded MIPO AlgaX, a climate-tech startup focused on translating bio-based innovations into real-world applications. His experience at the interface of academia, industry, and entrepreneurship provides a unique perspective on how universities can prepare future engineers to thrive in an increasingly interconnected, innovation-driven world.

What originally motivated you to pursue an academic career, and how has your perspective changed through your collaborations with industry?

Pursuing an academic career was not my first choice, as I had wanted to work in industry after graduating with a Ph.D. Unlike today, there were not many opportunities for Ph.D. graduates in industry in Malaysia during the early 2000s. After failing to secure an industry position, I decided to apply for a lecturer position at a local public university and was offered the job. Looking back, it was one of the best unintended decisions I have made in my life. Working in academia has not prevented me from collaborating with industry; rather, it has enabled me to do so while giving me the freedom to pursue my research interests. I now enjoy the best of both worlds!

Do you think the traditional boundary between academia and industry is becoming less distinct? What factors are driving this change?

Academia and industry are two different worlds, and the boundary between them will always remain distinct. There have been tremendous efforts and incentives from both governments and universities to promote university-industry collaboration. These initiatives certainly help, but to me, the key lies with individual academics: the ability to balance and manage differing expectations, a deep understanding of industry needs, strong business acumen, and other essential skills. Grit also matters, as industry engagement is often a less-travelled path for academics. Building successful collaborations takes time, persistence, and a willingness to step beyond the traditional boundaries of academia.

What skills should engineering students and young researchers develop if they want to thrive in both academia and industry?

First things first, get your basic research skills right! Then, go beyond theory and learn about the industry - its business, its challenges, and the areas where you can contribute. Be curious and coachable, and always be willing to learn, adapt, and contribute. These qualities will help you thrive in both academia and industry.

Looking ahead, how do you envision universities and industries working together to create greater societal impact?

I cannot agree more. By combining the knowledge, research capabilities, and innovation potential of universities with the practical expertise, resources, and real-world challenges of industry, we can accelerate the translation of research into solutions that benefit society.

If you could give one piece of advice to postgraduate students who are unsure between academia and industry, what would it be?

Choose what motivates and interests you. Working life is not a 100-metre sprint; it is a marathon. Regardless of the path you choose, be willing to continuously improve yourself and strive to be the best in what you do. Success, and money, will follow.



ES Pilot Plant



DPM Australia Visit



MIPO Pilot Lab launch: The new MIPO Pilot Lab, officially launched by university leadership, transforms a former car workshop into an engineering makerspace.



Ir Ts Dr Ho Kok Hoe is a Senior Lecturer (Practice) in the Department of Electrical and Robotics Engineering at Monash University Malaysia. With extensive experience spanning industry and academia, his expertise includes mechatronics, robotics, automation, smart manufacturing, and Industry 4.0. Passionate about engineering education and innovation, he advocates bridging academic knowledge with industrial practice to prepare future engineers for an evolving technological landscape.

Having spent many years in industry before transitioning into academia, what motivated this career shift, and how has your professional journey shaped your perspective as an educator and researcher?

My transition to academia was not about leaving industry; it was about bringing industry into the classroom. After 17 years in the polymer and semiconductor sectors, I realised that an engineering degree is only the beginning of a lifelong learning journey. Industry taught me the value of continuous professional development, teamwork, and solving real manufacturing challenges. These experiences showed me that academia and industry complement one another: universities build strong technical foundations, while industry develops practical competence. As an academician, I integrate industrial case studies, simulation, robotics, and emerging technologies into my teaching so students not only understand engineering principles but also learn how to apply them to improve productivity, sustainability, quality, and innovation.

In your view, what role should industry collaboration play in engineering research and education, and how can universities strengthen these partnerships?

Industry collaboration is essential because engineering is fundamentally about solving real-world problems. Universities contribute research expertise, while industry provides practical challenges and insights into evolving workforce needs. Strong partnerships should extend beyond internships to include curriculum development, collaborative research, guest lectures, shared laboratories, and postgraduate supervision. In my teaching, I encourage students to work on projects inspired by genuine industrial challenges, exposing them to constraints such as cost, manufacturability, quality, and sustainability. At the same time, industry benefits from research-driven solutions using artificial intelligence, simulation, robotics, and data analytics. Such collaboration ensures research creates meaningful impact while preparing graduates with the skills and experience needed to thrive in modern engineering careers.

What skills and mindsets should engineering students and postgraduate researchers develop if they wish to succeed across both academia and industry?

Success in engineering requires more than technical knowledge. As technologies such as artificial intelligence, automation, and Industry 4.0 continue to evolve, engineers must embrace lifelong learning and remain adaptable throughout their careers. Beyond strong engineering fundamentals, students should develop skills in communication, leadership, teamwork, critical thinking, data analysis, programming, and project management. Practical experience and continuous upskilling through postgraduate education, professional certifications, and industrial training are equally important. Academic qualifications may open doors, but long-term success depends on the ability to solve complex problems, collaborate across disciplines, and continuously apply new knowledge to real-world challenges.

Do you believe the traditional divide between academia and industry is becoming less distinct? What factors are driving this convergence?

Yes, the boundary between academia and industry is becoming increasingly interconnected. Today's challenges in artificial intelligence, smart manufacturing, digital transformation, and

sustainability require collaboration between universities, industry, and government. Employers expect graduates to contribute from day one, while universities are increasingly focused on producing research with real societal and economic impact. Consequently, engineering education now incorporates industrial projects, entrepreneurship, digital technologies, and multidisciplinary learning alongside traditional research. Likewise, companies continue investing in lifelong learning through professional training and certifications. The engineers of the future will move seamlessly between research, innovation, and industrial practice, combining academic knowledge with practical experience to drive meaningful technological progress.

What advice would you give to students or early-career engineers who are uncertain about pursuing a career in academia, industry, or a combination of both?

I would recommend not seeing academia and industry as two separate destinations, see them as complementary environments that develop different strengths. Industry provides experience in solving practical problems under real-world constraints, while academia builds analytical thinking, research capability, and innovation. Engineers who experience both often gain a broader perspective and are better equipped to translate ideas into impactful solutions. Most importantly, adopt a lifelong learning mindset. A degree is only the first milestone, continue developing through postgraduate study, professional certifications, workshops, conferences, and practical projects. Curiosity, adaptability, and a commitment to continuous improvement will always be the greatest assets, regardless of the career path you choose.



Academia: 20 Years Ago to Now



Prof Tan Chee Pin (Edwin)
Head of Robotics & Mechatronics Programme
Department of Electrical and Robotics Engineering

Head of the Electrical and Robotics Engineering Department at MUM and world renowned in state estimation and fault diagnosis, Professor Tan Chee Pin's main research focuses on observers and their applications for numerous dynamic systems. He obtained his Ph.D. in Control Systems from Leicester University in 2002.

Can you give us an overview of your PhD experience?

I graduated with my Bachelors degree in 1998 and worked in industry for 9 months. Though I enjoyed the work, I felt unfulfilled and missed studying - in particular, I was fascinated with Control Theory and wanted to do more in that area. I had a fantastic supervisor who I felt guided me more than he was expected to. I also had the privilege of attending 2 conferences

(due to my supervisor's grant), which was very beneficial.

Was getting entry to your PhD program competitive? What about funding and scholarship opportunities?

Yes and no. My supervisor had gotten a grant to support my stipend, but I had to compete with other students for it (I know for a fact that my own classmate also applied for it - definitely competitive!)

How was your publication journey? Did you ever feel under pressure to produce publishable outcomes?

Yes, there was always that pressure. I was a UK PhD graduate, which required a viva, and the statistics weren't encouraging either - about 1/3 of PhD candidates would fail the viva and get downgraded to a MPhil; stories such as re-writing the thesis for 1 year were quite common! We were always told that if we had a journal publication, then it would be very difficult for the examiner to fail us on technical grounds, but if we wrote the thesis badly, at worst we'd just be asked to rewrite it.

What was the culture like among your research

group and peers? Do you believe it would have remained the same had you done your PhD at a different time?

I think it'll probably be quite similar. We will help each other out, and there's always the pressure/culture of publications in journals.

How stressed were you regarding career opportunities, especially in academia and tenure track availability?

I was rather stressed, in a few aspects. For one, my peers were already working and moving on in their careers/lives (buying cars, etc.), and here I was, still studying. I was stressed about getting the PhD, and then finding a job (that worry was very real!) I had to shut off the 'noise' from my head and just FOCUS on my research. I was very lucky - while waiting for my viva, I saw a Monash advertisement for a lecturer in Control - so I applied and got the position (just had to ensure I passed the viva after!). With a job in the bag, the flight back to Malaysia was sweet!





Dr Howgen Pratama Kesuma is an avid educator and all-around specialist in one-port surface acoustic wave (SAW) resonator sensors, developing advanced modules and driving innovation in semiconductor fabrication, photolithography, and wireless sensor technologies. He obtained his Ph.D. in Electrical and Computer Systems Engineering from MUM in 2022.

Can you give us an overview of your PhD experience?

It was, overall, quite an interesting journey of challenges, self-discovery, and constant questions of 'Am I on the right path?', 'Is a PhD right for me?'. What got me through this was some advice I received during a teambuilding gathering by A/P Tridib where he said a PhD isn't about grades or innate intelligence, but 'how much time you are WILLING to put in to keep tackling the problem' and that moment was a 'canon event' for me. I firmly believed that I would reach my goal, regardless of the speed, as long as I kept putting one foot forward everyday.

Was getting entry to your PhD program competitive? What about funding and scholarship opportunities?

Well I was lucky enough to join a program without any hiccups. My PhD supervisor, Prof. Narayanan Ramakrishnan, was actively looking for candidates, and the potential to

use semiconductors as sensors intrigued me. We talked a lot about the arrangement of scholarship opportunities. I was fortunate enough to receive the tuition fee waiver, and once I published my first paper I got the stipend.

How was your publication journey? Did you ever feel under pressure to produce publishable outcomes?

I managed to publish all my research findings for a total of 4 papers. I won't sugarcoat it: you will feel the pressure, especially when you see peers constantly publishing and seemingly moving forward. You will subconsciously be comparing your progress with theirs. Your supervisor can only encourage you; it's still your responsibility to publish. Once you taste that 'forbidden fruit' of the first paper, you will feel driven like never before. So, keep grinding!

What was the culture like among your research group and peers? Do you believe it would have remained the same had you done your PhD at a different time?

My research group was pretty fun. I was involved in many projects and balanced hands-on and theoretical work. We held open discussions, shared ideas, and consulted each other about issues we encountered, which gave us different perspectives to consider. Communicating ideas is a common weakness among students, so I always advise them to adopt this practice.

How stressed were you regarding career opportunities, especially in academia and tenure track availability?

It's important to have research papers in academia. There is no point in research work if there is no consideration of publishing it. Career opportunities are there, however with the current trend, publications alone are not enough. You need experience and skills to stand out. I recommend getting involved in projects and gaining exposure. Monash offers many opportunities through conferences and workshops. Be a sponge! Absorb all you can, even if it doesn't seem related to your field. Most universities have diverted from traditional teaching methods, so you have to adapt and match the current trend. I might not have the most updated news regarding tenure track, but I believe it's becoming less commonly available. Tenure can protect you and keep you comfortable, but you must keep from stagnating which, sadly, some do with the security of the position.



Shedding Light on Post-doctorate *Studies*



Dr Ervin Tiu Shan Khai

Postdoc, Department of Civil Engineering

Dr Ervin is a Research Fellow in the Department of Civil Engineering at Monash University Malaysia, specialising in cement engineering and low-carbon construction materials. He holds a PhD from Monash University Malaysia, where he investigated the valorisation of industrial by-products for sustainable cementitious materials. His current research focuses on developing magnesium-based binders as next-generation low-carbon alternatives for the construction industry. Beyond academia, he has contributed to international research collaborations across Asia, Europe, and Australia, and previously gained industry experience with a Singapore-based engineering consultancy spanning structural, geotechnical, and transportation engineering projects.

What motivated you to pursue a postdoctoral position following your PhD rather than moving into an industry role?

What motivated me to pursue a postdoctoral position was my belief that research is where innovation begins. While industry transforms ideas into real-world products, I wanted to contribute at the forefront of discovery by developing new knowledge and technologies that can eventually be translated into practical applications.

Do you currently collaborate with industry partners, or do you plan to in the future? Any experience you could share? To what extent are you engaged with industry?

Yes, I actively collaborate with industry partners because I believe research creates the greatest impact when it addresses real industrial challenges. One of my projects involves working with a recycled plastic manufacturer to develop lightweight concrete using recycled plastic waste. This collaboration has already resulted in a published paper, with more exciting developments currently underway.

How significant is collaboration with industry partners compared to maintaining your network within the academic community?

To me, collaboration with industry is just as significant as maintaining academic networks. Academia advances scientific knowledge, while industry provides first-hand insights into current challenges and emerging needs. Bringing both perspectives together ensures that research remains relevant and can deliver practical solutions with meaningful societal impact.

In what ways does your postdoctoral experience differ from your time as a PhD student, particularly regarding responsibilities and your relationship with your supervisor? Are there additional roles involved, such as securing funding or working with people outside academia?

My postdoctoral experience has been very different from my time as a PhD student. Instead of focusing primarily on a single research project, I now manage multiple projects, prepare grant applications, supervise students, and work closely with collaborators from both academia and industry. These broader responsibilities have expanded my perspective and accelerated my professional growth.

What's a common misconception about doing a postdoc that you'd like to clear up?

I believe a common misconception is that a postdoc is a temporary job with limited prospects. While often contract-based, I see it as a stage for building independence, leadership, and networks. By making the most of every opportunity, a postdoc can be a stepping stone to a fulfilling career.



Dr Ng Wen Cai

Postdoc, Department of Chemical Engineering

Dr Ng Wen Cai completed her Bachelor of Engineering (Hons) in Chemical Engineering at Monash University in 2017. Shortly after, she returned to Monash University to pursue her postgraduate research degree, and was conferred the award Doctor of Philosophy in 2022. Currently, she is appointed as a postdoctoral research fellow in the School of Engineering at Monash University Malaysia. Her primary research interests lie in renewable energy, solar hydrogen and nanotechnology. She is an active budding researcher that mainly works on the engineering design and development of efficient semiconductor-based photoelectrodes for solar-to-fuel (hydrogen) applications.

What motivated you to pursue a postdoctoral position following your PhD rather than moving into an industry role?

My long-term goal is to pursue an academic career, and a postdoctoral position was a natural next step. While industry offers pathways for technology deployment, a postdoc provides the freedom to explore new ideas, develop research independence, build collaborations, mentor students, and help translate fundamental discoveries into practical solutions with real-world impact.

Do you currently collaborate with industry partners, or do you plan to in the future? Any experience you could share? To what extent are you engaged with industry?

Yes, I collaborate with industry partners on sustainable hydrogen technologies and decarbonisation, including work with PETRONAS. This goes beyond running experiments. It includes stakeholder engagement, project discussions, and technology translation. One of the biggest lessons has been managing expectations on both sides, making sure the research stays practical, scalable, and aligned with real industry needs, without losing scientific rigour along the way.

How significant is collaboration with industry partners compared to maintaining your network within the academic community?

I'd say they're equally important, and I don't see them as competing priorities. I lean towards a tripartite view of innovation: academia generates knowledge, industry drives implementation, and government provides the strategic support that connects the two. Strong academic networks give you the ideas and rigour while strong industry ties give those ideas somewhere to go. You need both to move research from the lab bench to real-world impact.

In what ways does your postdoctoral experience differ from your time as a PhD student, particularly regarding responsibilities and your relationship with your supervisor? Are there additional roles involved, such as securing funding or working with people outside academia?

The biggest shift is independence. As a PhD student, you're primarily learning how to do research. As a postdoc, you're expected to lead it: shaping directions, mentoring students, managing projects, and contributing to funding applications. My relationship with my supervisor has evolved into a more collaborative partnership. Increasingly, my work also involves people outside academia, including industry contacts, government stakeholders, and funders, which was rarely the case during my PhD.

What's a common misconception about doing a postdoc that you'd like to clear up?

That it is somehow a lesser stage, and basically a longer PhD. It isn't. A postdoc is a professional role. One where you're actively building research independence, leadership, and collaboration skills. Think of it less as an extension of your PhD and more as the bridge to becoming an established researcher or academic.

OPINION CORNER

A Leap of Faith

From R&D engineer to researcher — choosing curiosity over certainty



Lim Yuen Theng Charissa

Department of Chemical Engineering

After spending 4.5 years in industry, what motivated you to return to academia and pursue a Master's by Research.

I developed an interest for research during my internship and final-year project in Monash, driven by my curiosity to explore the materials that God has created, which later led me to work as an R&D engineer in my previous company. When the opportunity to pursue a Master's by Research arose, I took it as a leap of faith to deepen my knowledge, upskill, and prepare for a more meaningful future.

What differences have you noticed between working in industry and conducting academic research so far?

In industry, I was exposed to a wide range of products and materials, requiring me to develop knowledge across many areas rather than specialising in one. The fast-paced environment and project deadlines meant focusing on delivering practical solutions quickly instead of investigating the underlying science in depth. In academia, I have the freedom to delve deeply into a specific research area and develop a more comprehensive understanding of the subject.

Which skills from your industrial experience do you think will be most valuable during your research journey?

Working in industry taught me how to communicate effectively with different people, learning to follow up on tasks, and adapt quickly to changing project requirements.

What advice would you give to engineers who are considering transitioning from industry to academia?

My advice would be to be clear about your purpose for making the transition, carefully consider the financial implications too, and be prepared for a different pace of work. Academia is more exploratory and less structured than industry, so perseverance, adaptability, and curiosity are essential.

Two Decades of Building, Now Researching How to Build Better

From Leading Million-Dollar Infrastructure Projects to Climate Resilience Research



MD Aktaruzzaman Hasan

Department of Civil Engineering

After nearly two decades in infrastructure and public sector engineering, what motivated you to pursue a PhD in Environmental Engineering?

Engineering has always been about solving real-world problems. After more than 19 years of working on roads, buildings, riverbank protection, environmental management, and community development projects, I wanted to strengthen my ability to contribute through research. My PhD at Monash University Malaysia allows me to explore climate resilience, waste management, and sustainable infrastructure at a deeper level while connecting practical engineering experience with scientific innovation.

What differences have you observed between professional engineering practice and academic research?

Professional engineering is highly execution-focused, requiring timely decisions, stakeholder coordination, budget control, and project delivery. Academic research demands deeper investigation, critical analysis, and patience in generating new knowledge. While the pace and objectives differ, both require discipline, problem-solving ability, and a commitment to creating positive impact.

Which experiences from your engineering career have been most valuable in your research journey?

Project management, quality assurance, risk management, and leadership have been particularly valuable. Managing large-scale infrastructure projects and leading multidisciplinary teams helped me develop structured thinking and effective planning. These skills are directly transferable to designing research projects, analysing problems, and achieving meaningful outcomes.

What achievements are you most proud of throughout your career?

I am proud of leading major public infrastructure projects, including a BDT 2 billion development project, (16.5 Million USD) achieving high project execution performance, establishing quality control systems, and contributing to climate-resilient infrastructure initiatives. I am also proud of my professional certifications, particularly PMP, and my ongoing research contributions in environmental sustainability and climate change.

What advice would you offer to engineers considering a transition from industry to research and academia?

Maintain a lifelong learning mindset. Industry experience provides practical insights that can significantly strengthen research. Be prepared to invest time, effort, and patience in developing research capabilities. Most importantly, stay focused on the bigger purpose: creating knowledge and solutions that benefit communities and future generations.

Ancora Imparo: I Am Still Learning

An industry veteran's reflections on returning to academia through a PhD by Research



Chow Chee Choy

Department of Mechanical Engineering

After dedicating so many years to the industry, what motivated you to return to academia and pursue a PhD by Research?

Life is a continuous journey of growth, and each individual follows a different path depending on what they seek to pursue. After spending many years in the industry, I saw the PhD by Research as an opportunity to further develop my critical research thinking and to challenge myself intellectually. It also encouraged me to reflect more deeply on the phrase “Ancora Imparo” – “I am still learning.” Beyond personal growth, completing the PhD may also open up new career opportunities that were not readily available to me in the past.

What differences have you observed between working in industry and conducting academic research?

Industry work is often fast-paced and results-driven. One is expected to respond quickly, create value, and

contribute meaningfully to the organisation’s objectives, as business sustainability is closely linked to performance and profitability. It also involves handling many practical challenges simultaneously and making timely decisions. Academic research, on the other hand, tends to move at a slower but more focused pace. It requires deeper thinking, patience, and persistence within a specific area of study. In many cases, researchers also need to work more independently, rather than relying on the broader organisational support often available in industry. That said, both industry and academic research demand strong mental resilience, but in different ways.

Which skills or experiences from your industrial career have proven most valuable in your research journey?

The most valuable skills from my industrial career are project management, practical problem-solving, and resilience. Project management has helped me connect the different phases of my research and manage the sequence of studies more effectively. For application-based research, industrial experience also makes it easier to relate the work to real-world needs and practical requirements. In addition, overcoming major challenges in industry has helped build the mental strength and resilience needed to navigate the demands of a research journey.

What advice would you offer to engineers who are considering a transition from industry to academia?

My advice would be to prepare financially, mentally, and emotionally. In most cases, moving from industry to academia may involve a reduction in income, so proper financial planning is important to avoid unnecessary stress. Mentally, one must be prepared to adjust to a very different working style. Academic research requires greater focus, patience, and the ability to work independently over a longer period. For those who previously held senior positions in industry, it is also important to stay humble. In academia, we are surrounded by many talented and knowledgeable individuals, some of whom may be far more experienced in their areas of expertise. This mindset helps us remain open to learning. Most importantly, one must be clear about the “why” behind the transition. Remembering the purpose, benefits, and opportunities ahead will help sustain motivation throughout the journey.

SPOTLIGHTS

Monash Malaysia's First Vice-Chancellor's Commendation for Thesis Excellence

Dr Wei-Kean Chong (Flik)

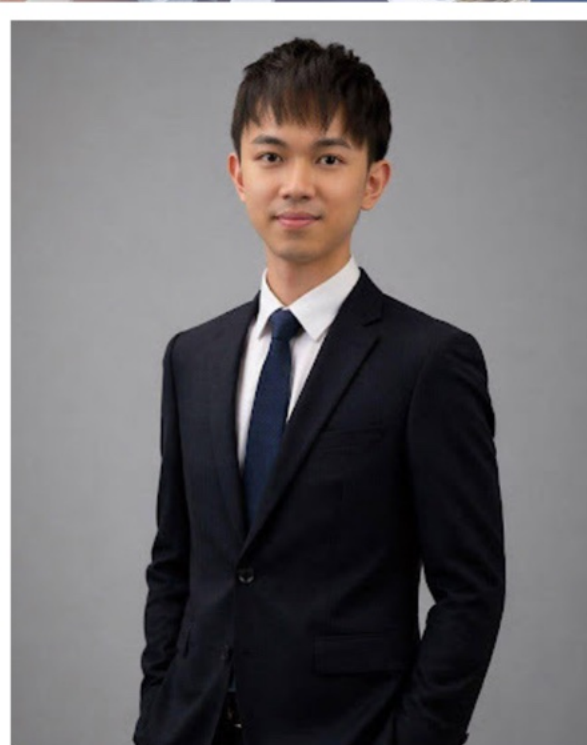
Post-doctoral Research Fellow

Department of Chemical Engineering

I am honoured to be the first recipient from Monash University Malaysia to obtain the Vice-Chancellor's Commendation for Thesis Excellence Award. This recognition is a meaningful milestone that reflects not only the outcome of my Ph.D. journey, but also the passion that has guided me throughout my research.

My Ph.D. journey has been an adventurous yet incredibly rewarding experience. My research focused on developing sustainable photocatalytic technologies for solar-driven hydrogen production. What inspired me most throughout this journey was the opportunity to contribute, even in a small way, to solve global challenges related to energy sustainability and carbon neutrality. I am deeply grateful to my colleagues, and in particular, my supervisor – Prof Chai Siang Piao, for their continuous guidance, encouragement, and support. The research environment and collaborations I experienced have played a significant role in shaping my scientific development and personal growth.

This award serves as a great encouragement for me to continue pursuing impactful research. I believe that meaningful scientific advancement comes from curiosity and the willingness to explore new ideas beyond existing boundaries. The journey of research is not always straightforward, but every challenge brings new understanding, and every discovery opens another possibility.



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To young researchers beginning your own journeys, I would encourage you to remain curious, stay persistent, and embrace every stage of the process. The research journey is not always fair, and the rewards may not come immediately. However, the knowledge gained, experiences accumulated, and lessons learned along the way will eventually bear fruit when the time is right.

Once again, I am sincerely thankful for this recognition and look forward to continuing my contribution to the development of sustainable technologies for a better future.

A Title Reserved for the *Finest*

*Prof Chai Siang Piao joins Monash's inaugural cohort of
Vice-Chancellor's Distinguished Professors*

Prof Ir Dr Chai Siang Piao **Vice-Chancellor's Distinguished Professor** *School of Engineering*

The School of Engineering proudly celebrates Professor Ir Dr Chai Siang Piao as one of 43 distinguished academics named in Monash University's inaugural VCDP cohort on 1 June 2026 — The only recipient from Monash University Malaysia in this cohort. Prof Chai's research in sustainable photocatalytic technologies and solar-driven hydrogen production has established him as a leading voice in green energy and carbon neutrality globally. His work at the intersection of chemical engineering and sustainability embodies precisely the kind of impactful research that this title was created to honour. Beyond his research, Prof Chai has long been a pillar of mentorship and academic excellence within the School of Engineering, guiding numerous postgraduate researchers in their own journeys toward meaningful scientific discovery.



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**These recipients embody the excellence that Monash University has come to be recognised for nationally and globally. Their work transcends generations, creating social and technological transformation at a global scale.
— Monash University**

ABOUT THE AWARD

The Vice-Chancellor's Distinguished Professorship (VCDP) is a prestigious title conferred annually to senior Monash University professors across its International Campus Network who demonstrate sustained international pre-eminence in research or education within their discipline.

Strengthening industry collaboration *through FMM partnership*



AT A GLANCE

Aiming to help Malaysian manufacturers transition from OEM to OBM through stronger academia-industry partnerships, enabling global competitiveness through technology and innovation.

Monash University Malaysia has entered a partnership with the Federation of Malaysian Manufacturers (FMM) through a memorandum of understanding (MoU) to support Malaysian manufacturers in transitioning from original equipment manufacturers (OEMs) to original brand manufacturers (OBMs).

The MoU was signed by Professor Anthony Guo, the Head of School for Engineering and School of IT at Monash University Malaysia, and by Mr Jacob Lee Chor Kok, the FMM President. The partnership reflects a shared commitment to helping local manufacturers move up the value chain by adopting smart manufacturing practices and advanced engineering capabilities. By combining academic expertise with industry experience, the partnership will enable Malaysian companies to compete globally through technology and high-value products.

FMM president Mr Jacob Lee Chor Kok said **“it is crucial for Malaysian manufacturers to move up the value chain by adopting smart manufacturing and advanced engineering capabilities, and that the MOU is a part of efforts to strengthen academic-industry collaboration so that Malaysian**

manufacturers can compete through technology and innovation, rather than relying solely on low-priced products”.

The signing ceremony was also attended by the Minister of Entrepreneur and Cooperatives Development, YB Steven Sim Chee Keong. **“We foresee more collaboration with universities. From FMM’s standpoint, we will work together with them to explore ways to integrate industry needs into academic curricula. We also aim to bring university students, including lecturers and professors, into the industries so that our education system becomes more industry-driven”** he said.

Professor Edwin Tan Chee Pin, Head of the Electrical and Robotics Engineering department at the university’s School of Engineering, added the importance of closer engagement between universities and industry partners in preparing future graduates and strengthening Malaysia’s innovation capabilities.

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Through partnerships such as this, the university aims to bridge academic expertise with real industry needs. By working closely with industry partners like FMM, we hope to help support Malaysian manufacturers as they move up the value chain and compete on a global stage, whilst giving early industrial experience to our students.

Through collaborations such as this, Monash University Malaysia aims to contribute to the development of a stronger research, development, and innovation ecosystem while providing students and academics with opportunities to engage directly with industry. These collaborations are expected to open new pathways for joint research, curriculum development, and knowledge exchange, benefiting both the manufacturing sector and the next generation of engineering and technology professionals.

Monash-NXP Partnership Marks New Chapter in Semiconductor Education



On 13 February 2026, Monash University Malaysia formalised a Memorandum of Agreement with NXP Malaysia, establishing the Monash-NXP Semiconductor Lab through an equipment donation valued at RM2 million. The signing ceremony, held at the university's Library Exhibition Space, brought together academic leaders, industry partners, and Selangor state representatives, including EXCO for Investment, Trade and Mobility YB Ng Sze Han.

Professor Narayanan Ramakrishnan, Director of Innovation and Research Enterprise at the School of Engineering, opened proceedings with remarks that framed the significance of the agreement. He outlined the university's existing semiconductor curriculum and detailed the longstanding relationship with NXP Malaysia, spanning guest lectures, site visits, internships, and joint projects. His introduction set the strategic context for the partnership, positioning the new lab as a natural extension of years of collaborative engagement rather than a standalone initiative. The resulting facility will strengthen teaching and lab scale

research capabilities in assembly and package measurement, complementing industry-aligned units recently introduced within the School of Engineering. Wang Soon Wei, Head of Assembly Operations at NXP Malaysia, noted that students would gain hands-on exposure to semiconductor processes, supporting industry readiness among graduates.

Professor Emeritus Dato' Dr Adeeba Kamarulzaman, President and Pro Vice-Chancellor, underscored how partnerships of this kind help develop highly skilled engineers aligned with Malaysia's semiconductor ambitions, while YB Ng Sze Han highlighted the value of coordinated efforts across government, academia, and industry.

Ramakrishnan's role in articulating the university's semiconductor strategy at the outset of the ceremony reflects his broader mandate overseeing innovation and research enterprise within the School of Engineering, bridging institutional research priorities with sustained industry collaboration in a nationally significant sector.

Bridging Research, Industry and Policy Through *Hydrogen Technology*

Monash University Malaysia has secured a USD 1 million grant from the Open Society Foundations (OSF) for the three-year project, "Industrial Decarbonisation through Hydrogen Technology". Led by **Professor Ir Dr Chong Meng Nan** from the School of Engineering and Centre for Net-Zero Technology (CNZT), the project brings together multidisciplinary expertise from the School of Engineering and School of Business to address one of the key challenges in the energy transition: making industrial decarbonisation through hydrogen technically feasible, economically viable, investable, and aligned with emerging policy and regulatory frameworks that support Malaysia's net-zero ambitions.

expertise in green finance and investment mechanisms, the project will enable stakeholders to evaluate alternative transition scenarios and identify practical, cost-effective and low-risk pathways for hydrogen adoption.

The significance of the project lies in bridging the gap between research, industry and policy to support real-world implementation. Through stakeholder engagement and co-design with industry partners, government agencies and other key stakeholders, the team will ensure that the toolkits respond to actual implementation challenges, investment requirements and evolving policy needs.



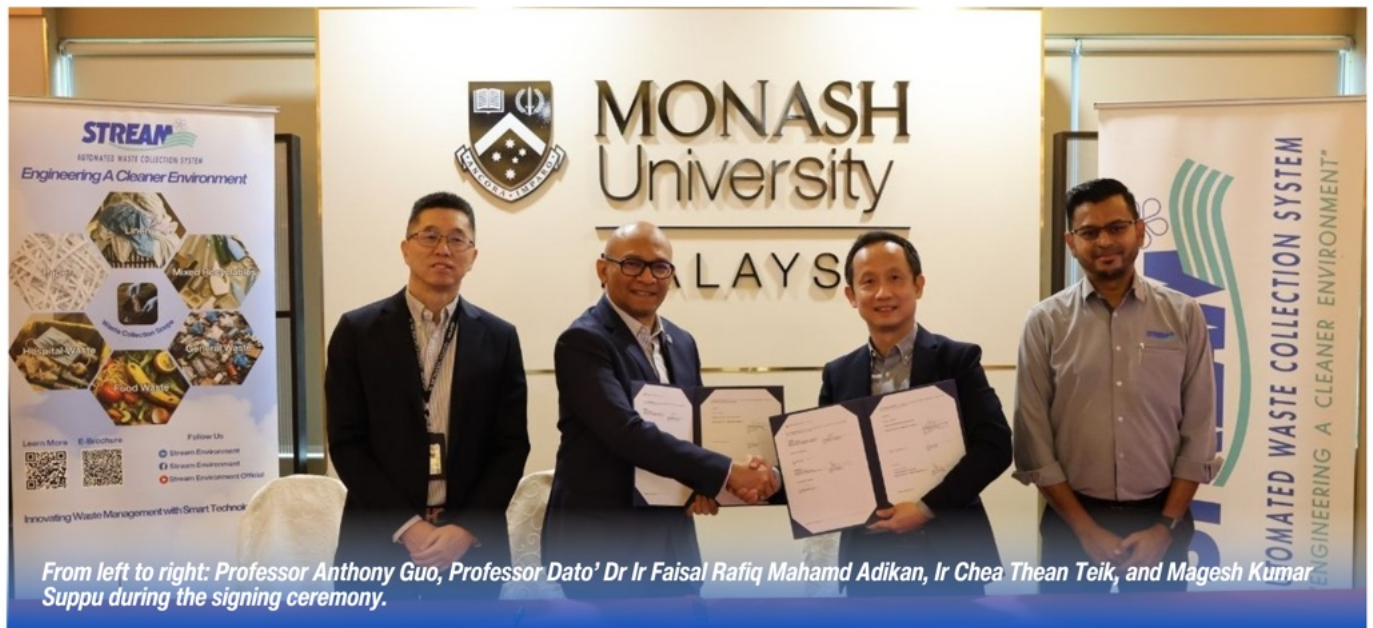
The project will develop and validate integrated hydrogen technology and financial toolkits to assess how green and blue hydrogen can support the decarbonisation of hard-to-abate industries. By combining hydrogen technologies, systems and digital modelling, life-cycle assessment, techno-economic analysis, carbon pricing and financial modelling with

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The collaborative approach will help connect scientific research with industrial priorities while providing evidence-based insights to support policymaking and regulatory development.

Ultimately, the project aims to reduce uncertainty surrounding hydrogen deployment, improve investment readiness and accelerate industrial decarbonisation. The resulting approaches and decision-support tools will be designed to be scalable and replicable across Malaysia and the wider ASEAN region, strengthening Malaysia's role in the emerging regional hydrogen economy and supporting the transition towards a net-zero future. Furthermore, the project's findings are expected to provide valuable insights for shaping future hydrogen and energy-transition policies, ensuring that research outcomes translate into practical impact for industry and society.

Monash and STREAM Industries *Formalise Strategic Partnership*



From left to right: Professor Anthony Guo, Professor Dato' Dr Ir Faisal Rafiq Mahamd Adikan, Ir Chea Thean Teik, and Magesh Kumar Suppu during the signing ceremony.

Monash University Malaysia and STREAM Industries Sdn Bhd signed a Memorandum of Understanding (MoU) and a Research Collaboration Agreement for industrial research, education, and professional development.

The partnership will create opportunities for joint research initiatives, access to industry data and infrastructure, professional development activities, staff and student engagement, and the pursuit of research funding. The organisations may also jointly deliver seminars, workshops, training activities and other programs that support knowledge exchange between academia and industry.

Professor Anthony Guo, Head of the School of Engineering, signed the MoU on behalf of Monash University Malaysia, while Ir Chea Thean Teik, Chief Executive Officer of STREAM Industries, signed on behalf of the company.

A separate Research Collaboration Agreement was signed by Professor Dato' Dr Ir Faisal Rafiq Mahamd Adikan, Vice-President (Research and Development) at Monash University Malaysia, and Ir Chea. The agreements were also acknowledged by Dr Lau Ee Von, the project's principal investigator, and Magesh Kumar

Suppu, Chief Technical Officer of STREAM Industries. Taking effect on 1 September 2026, the MoU will provide a framework for collaboration between the School of Engineering and STREAM Industries across industrial research and final-year projects.

The first research initiative under the partnership is a three-year project titled "Development of Nanocomposite Hydrogels for VOC and Odour Control in STREAM Waste Emissions". Supported by RM125,000 in funding from STREAM Industries, the project will be led by Dr Lau and conducted from September 2026 to August 2029. **"With our research, we aim to help turn STREAM's vision of pioneering automated solid waste disposal into reality and transform the way solid waste is collected, handled and disposed of,"** said Dr Lau Ee Von.



Group photo of representatives from the university together with representatives from STREAM Industries.

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From left to right: Associate Professor Edward Ooi Chien Wei, Professor Anthony Guo, Dato' Sri Haji Mad Zaidi bin Mohd Karli, Hoo Peih Yoke, and Dr New Eng Kein.

Bridging Academia and Industry: *Partnering for a Sustainable Energy Future*

Monash University Malaysia and Linde Malaysia have signed a Memorandum of Understanding (MoU) to advance collaboration in low-carbon industrial technologies, sustainability research and future-ready talent development. The partnership was announced during the Linde-Monash University Sustainability Conference 2026, held at Monash University Malaysia under the theme "Shaping Tomorrow's Energy". Bringing together representatives from government, industry and academia, the conference explored practical pathways to support Malaysia's energy transition and sustainable development goals. Through the collaboration, Monash and Linde will pursue joint research in decarbonisation and low-carbon technologies, facilitate technical knowledge exchange and gas safety expertise sharing, and create opportunities for student industrial attachments, capstone projects and mentoring. The partnership also aims to strengthen academia-industry engagement to accelerate the development and implementation of real-world sustainability solutions.

Professor Anthony Guo, Head of the School of Engineering at Monash University Malaysia, highlighted the significance of the initiative: **"This conference represents a true tripartite strategic alliance between government policy, industrial deployment, and academic research."**

Peih Yoke Hoo, Cluster Business Head, Singapore and Malaysia, and Managing Director of Linde Malaysia, emphasised the practical impact of the collaboration: **"This collaboration connects sustainability ambitions with practical industry action by bringing together technology, research and supportive policy frameworks."**

The conference also marked 20 years of Chemical Engineering at Monash University Malaysia, celebrating the University's contributions in clean hydrogen, carbon capture, biomass energy and circular engineering through research, education and industry engagement. As Malaysia continues its energy transition journey, the partnership reflects a shared commitment to transforming knowledge into impact while preparing the next generation of engineers and innovators to contribute to a more sustainable future.



The MoU signing between Linde Malaysia and Monash University Malaysia

Recognising Excellence in Research and Education

The School of Engineering celebrates the outstanding contributions of our faculty members through the Annual Excellence Awards 2026.



Open Category

Research



Winner



A/Prof Dr Chow Ming Fai

Civil Engineering Department



Commendation



Prof Dr N. Ramakrishnan

Electrical and Robotics Engineering Department



A/Prof Dr M.E Raghunandan

Civil Engineering Department



A/Prof Dr Ooi Ean Hin

Mechanical Engineering Department

ECE Category

Research



Winner



Dr Goh Kek Boon

Mechanical Engineering Department

Open Category

Education



Winner



Prof Dr N. Ramakrishnan

Electrical and Robotics Engineering Department



Commendation



A/Prof Dr Saman Ilankoon

Chemical Engineering Department

ECE Category

Education



Winner



Dr Ho Kok Hoe

Electrical and Robotics Engineering Department



Commendation



Dr Yeoh Chin Vern

Mechanical Engineering Department

Three Minutes, Three Years of Research: A Winning 3MT Journey

Derek Chan Kwan Hoe,
Department of Chemical Engineering

One of the most memorable moments came during the results announcement. Hearing my name announced as the winner of the 2026 Monash University Malaysia Campus 3MT Competition was both unexpected and deeply rewarding, marking the culmination of weeks of preparation and refinement. Beyond the award itself, the experience taught me the importance of communicating research with clarity, purpose, and authenticity. While practice was essential, the greatest lesson was developing the courage to critically evaluate myself. Feedback from others was invaluable, but meaningful improvement came from honest self-reflection. That willingness to reflect and improve ultimately made the greatest difference.



After spending three years working on my PhD research, I was challenged to explain it in just three minutes. That was the premise of the 2026 Monash University Malaysia 3-Minute Thesis (3MT) Competition, and it became one of the most rewarding experiences of my PhD journey.

As researchers, we often spend years immersed in technical details, communicating primarily with others in our field. The 3MT challenged me to step outside that familiar environment and explain my research to a broad audience in just three minutes. Distilling three years of work into a clear, engaging, and meaningful story was far more difficult than I initially expected. After advancing from the campus preliminary round to the campus finals, I spent the following week refining both my presentation slides and speech. One particularly valuable experience was receiving coaching from Harinash Rao, the previous Monash University-level 3MT winner. The support of my supervisors, mentors, and the various 3MT coaching sessions organised by the University also helped shape my approach to research communication. Through this process, I learned that effective communication is not about oversimplifying the science, but about helping others understand why it matters.

“The 3MT experience has strengthened my confidence as both a researcher and communicator, and I am grateful for the opportunity to represent Monash University Malaysia at the next stage of the competition.”



EVENT HIGHLIGHTS

Where Big Data Meets Big Ideas

Prof Wang Xin's Journey at ISBDAI 2026, Hong Kong

Attending the 5th International Symposium on Big Data and Artificial Intelligence for Education Transformation (ISBDAI 2026) at The Hong Kong Polytechnic University was an incredibly rewarding experience. The conference offered an excellent environment for meaningful discussions on the future of technology and data science. A standout highlight of the event was attending the keynote address by Prof. Ferenc Krausz, Nobel Laureate in Physics. Meeting him in person afterward was a true honor; his perspective on scientific discovery was profoundly inspiring and served as a powerful reminder of why we dedicate ourselves to research. During the symposium, I had the privilege of delivering a session keynote presentation focusing on our research team's latest advancements. It was a wonderful opportunity to share how AI can improve the precision



and efficiency of pavement crack detection and repair, while also showing how AI methodologies can be adapted for palm oil fruit ripeness detection. The feedback and follow-up conversations with peers during the session were immensely valuable and opened up exciting new perspectives for our future work. The symposium also provided a memorable occasion to formally receive my IETI Fellow medal. Having been elected to the fellowship in 2025, it was a pleasure to receive the physical medal in person from Ir. Daniel Lai, Vice President of IETI. While this is a significant personal milestone, I see it primarily as a reflection of the hard work and shared commitment of my entire research team. This recognition is both humbling and motivating, further strengthening my dedication to ongoing research and innovation.

Building Bridges Across Borders:

Monash Engineering Strengthens Academic Partnerships in Asia

I was honoured to be part of the School of Engineering delegation from Monash University Malaysia during our recent visit to Hunan and Jiangsu provinces, China. Accompanying Prof. Anthony Guo, Prof. Yew Mun Hung, and Prof. Wang Xin, I had the opportunity to engage with students and academic partners across five universities and three high schools.

As a PhD student, this experience provided valuable exposure to international academic engagement and collaboration, while allowing me to interact with students who were eager to learn more about Monash University Malaysia and the opportunities available for higher education and research.

The visit also facilitated meaningful discussions with faculty members and institutional representatives on potential research collaborations and postgraduate training initiatives, reinforcing the importance of global partnerships in advancing engineering education and innovation.



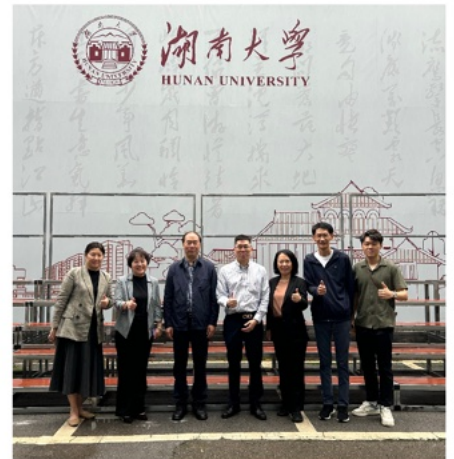
Across Hunan and Jiangsu: Strengthening Ties Through Education

Tan Wen Jian,
Department of Mechanical Engineering

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Overall, the trip was both professionally enriching and personally rewarding, and I am grateful for the opportunity to represent the School of Engineering while contributing to the strengthening of Monash University's engagement with our partners in China.

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First Winter, First Breakthroughs: A Week at University of Fukui

Nur Amirah Khairina,
Department of Chemical Engineering

Participating in the Sakura Science Exchange Program at the University of Fukui through a collaboration with Monash University Malaysia was an unforgettable experience. Coming from a tropical climate, experiencing winter for the very first time was a breathtaking moment I will always cherish.

Though the program lasted just one week, it was packed with immense academic and personal growth. I had the privilege of learning from distinguished researchers, including Prof. Satoshi Fujita and Prof. Takenori Satomura, who introduced us to cutting-edge research in nanomaterials, polymers, enzymes, and proteins. Engaging directly with experts in these fields deepened my passion for scientific innovation.

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Beyond the lectures, the highlight was the vibrant cross-cultural exchange. I built incredible friendships with peers from Indonesia, Taiwan, Thailand, and Japan. This experience through the Sakura Science Exchange Program taught me adaptability, expanded my global network, and left me with memories of snowy landscapes and lifelong connections that I will carry forward in my future pursuits.



Monash Malaysia and Ningxia University Forge New Pathways in Engineering Collaboration

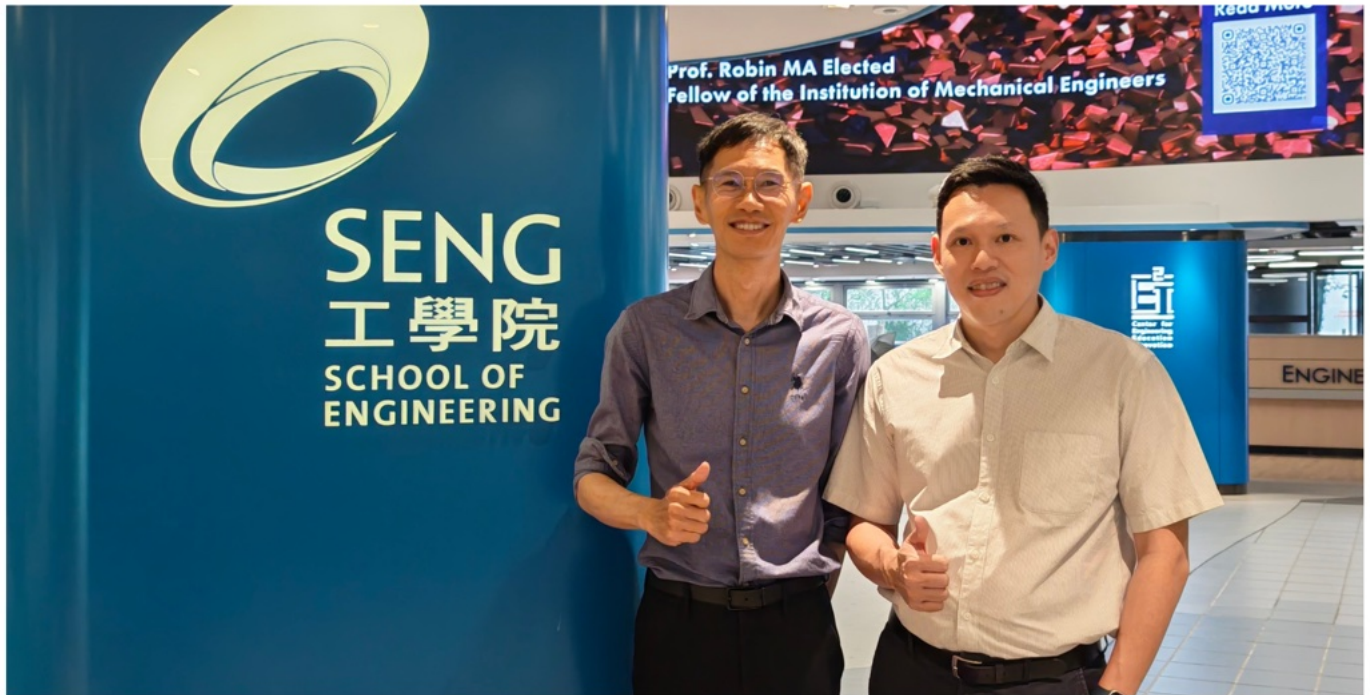
On 29 June 2026, Prof Hung Yew Mun, accompanied by Prof Wang Xin, paid an official visit to the School of Mechanical Engineering at Ningxia University. The visit aimed to deepen academic linkages and chart new directions for collaborative engagement between Ningxia University and the School of Engineering at Monash University Malaysia.

The delegation was warmly received by the School's leadership team, including Prof Yang Yongming (Party Branch Secretary and Executive Dean), Prof Zhang Bo (Deputy Party Branch Secretary), Prof Zheng Hongtao (Associate Dean), Prof Wang Yu (Associate Dean), Prof Li Hongyan (Associate Dean), Prof Jiang Xiaoxia (Head of Mechanical Engineering, Sino-Foreign Cooperative Education), and Dr Ye Wenguang (Master's Supervisor). Discussions centred on expanding academic cooperation, enhancing student exchange programmes, and exploring joint initiatives in both education and research—all underscoring a mutual commitment to fostering global partnerships in engineering.



The visit also featured focused research presentations showcasing advancements in thermal management systems and non-destructive testing technologies, alongside an introduction to the Master of Applied Engineering programmes offered at Monash University Malaysia. A particularly memorable segment was the lively exchange with postgraduate students, whose keen interest and thought-provoking questions enriched the academic dialogue and reflected the vibrant intellectual culture at Ningxia University.

The visit concluded with a heartfelt note of appreciation to the leadership, faculty, and students of the School of Mechanical Engineering for their exceptional hospitality. It is our sincere hope that this engagement will serve as a strong foundation for sustained collaboration and pave the way for future joint endeavours in engineering education and research.



Benchmarking Excellence: A Visit to HKUST

On 30 July 2026, Professor Hung Yew Mun and Professor Darwin Gouwanda from the Department of Mechanical Engineering, Monash University Malaysia, visited the Department of Mechanical and Aerospace Engineering at the Hong Kong University of Science and Technology (HKUST) for an academic benchmarking exercise. The pair were hosted by Professor Yong Chen, Head and Chair Professor of Mechanical and Aerospace Engineering, along with Professor Qing Chen and Professor Molong Duan, who shared insights from their teaching and research experience. A laboratory tour led by Mr Maisie Chow showcased HKUST's research facilities and teaching laboratories.



Academic benchmarking and collaboration are essential for driving innovation, fostering excellence, and preparing our graduates to meet the evolving needs of the engineering profession.

The visit offered an opportunity to exchange ideas on teaching and learning, academic programme management, final year project implementation, and laboratory practices – insights that will feed into Monash's ongoing efforts to strengthen its engineering programmes. Further collaboration between the two institutions is expected to follow.



MOBILITY

Global

Destination

Four researchers. Four countries. One mission.





Beijing, China

Koo Ian Keen at the Chinese Academy of Sciences, Beijing

Department of Mechanical Engineering

My three-month exchange program at the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences (RCEES, CAS) in Beijing was a highly rewarding experience that significantly broadened my academic and personal perspectives. Academically, I deepened my theoretical understanding of ion transport in polyamide nanofiltration membranes, particularly the mechanisms governing ion-ion selectivity. The program also exposed me to an efficient and results-oriented research culture. I learned the importance of balancing quality with productivity, enabling researchers to manage multiple responsibilities effectively. Furthermore, the strong dedication to research and collaborative spirit demonstrated by the local researchers inspired me to persevere through academic challenges.

Beyond research, interactions with local researchers provided valuable insights into both interpersonal values and local culture. I was impressed by the sincerity they showed toward others, which helped me develop strong interpersonal and communication skills. Through daily conversations, I gained a deeper understanding of local lifestyle, including the hobbies, culinary preferences, and current social trends among Chinese youth. Overall, this exchange enhanced my research capabilities and professional development, leaving me with valuable experiences and relationships that will benefit my future career.

Arizona, USA

Manoj Kumar at Arizona State University, USA

Department of Civil Engineering

Research often begins with a question, but sometimes it takes crossing continents to discover new ways of answering it. Being selected for the PhD Global Mobility Program at the School of Sustainable Engineering and the Built Environment, Arizona State University, USA, was a memorable milestone in my research journey. My PhD focuses on the thermo-hydro behaviour of urban vegetated slopes, and this opportunity allowed me to engage with a world-class academic environment where sustainability, innovation, and real-world engineering challenges come together.

At ASU, I was exposed to new research perspectives, advanced facilities, and meaningful academic discussions that helped me refine the direction of my work. More than a research visit, the experience strengthened my confidence as an early-career researcher and encouraged me to think beyond local challenges toward globally relevant solutions.

This mobility program also reminded me of the value of collaboration. Working across institutions and cultures opened new possibilities for knowledge exchange, research networking, and future partnerships. I am grateful to the School of Engineering and my supervisors for supporting this opportunity, which has added significant value to both my PhD journey and professional growth.





Groningen, Netherlands

Jeffrey Ruzain Md Yazid at the University of Groningen, Netherlands

Department of Chemical Engineering

My 2.5-month research exchange at the University of Groningen (UG) under the supervision of Dr. Dulce Morales, was a defining chapter in my PhD journey. I was able to explore the workings of in-situ Raman spectroscopy in electrocatalysis and to incorporate it into my own research during my time there. I was also fortunate to deepen my understanding of electrochemical research and concepts through workshops and discussions held by my host supervisor and other academics.

This exchange on a whole allowed me to experience the research culture and tight-knit network amongst colleagues present at UG, whilst also building a network with researchers in the field. Beyond the research experience, this exchange also allowed me to foster newfound friendships and connections with individuals from diverse backgrounds, while also taking in the Dutch cycling culture, by biking everyday to campus, even in winter temperatures of -5°C . Overall, the entire experience was invigorating and further motivated me for the remainder of my doctoral studies and future research career.

Torino, Italy

Suen Ji Wei at Politecnico di Torino, Italy

Department of Chemical Engineering

My short-term research attachment at Politecnico di Torino was one of the most rewarding experiences of my PhD journey. As a visiting research student, I had the opportunity to collaborate with researchers working in electrochemical engineering and computational modelling, allowing me to deepen my understanding of water electrolysis and COMSOL Multiphysics. The attachment exposed me to different research methodologies and provided valuable insights into how advanced modelling techniques can be used to optimise the design and performance of an electrolyser. The discussions with academics and fellow researchers not only strengthened my technical knowledge but also encouraged me to approach research problems from new perspectives.

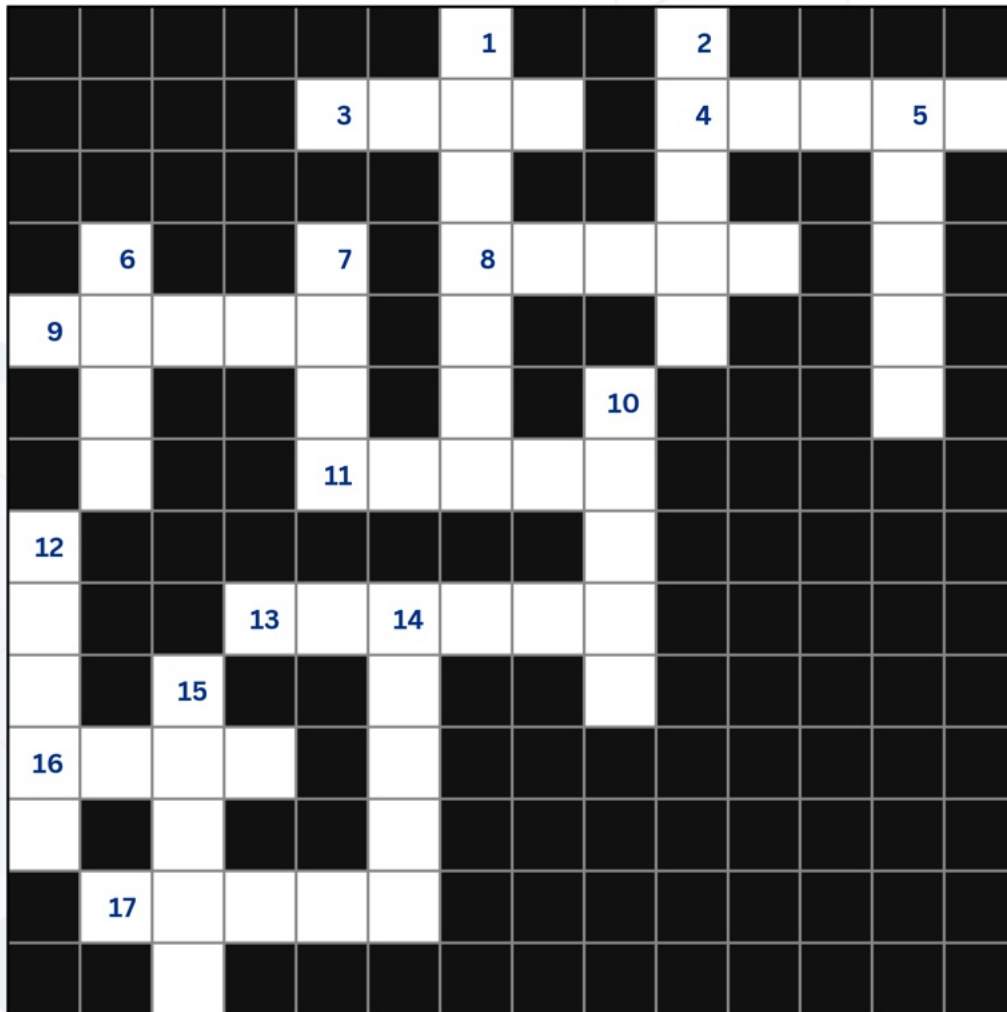
Beyond the research itself, the experience was equally enriching on a personal level. Working in an international environment enabled me to build meaningful professional connections and appreciate the value of global collaboration in addressing scientific challenges. Living in Turin also gave me the opportunity to immerse myself in Italian culture, explore its rich history, and experience everyday life in one of Europe's most vibrant academic cities. This attachment has broadened both my academic and personal horizons, equipping me with new knowledge, meaningful connections, and experiences that will continue to influence my research and future career in engineering and scientific innovation.



PUZZLE BREAK

The Engineer's Challenge

Need a breather from all that reading? Give your brain a different kind of workout with this engineering-themed cryptic crossword. Grab a pen, take your time, and see how many you can crack!



Across

- 3. Power network, or this puzzle's bones (4)
- 4. Recast early for the switch (5)
- 8. Odd sort turns things over (5)
- 9. Worth hearing, in the pipeline (5)
- 11. Odd sort to ROM drives this (5)
- 13. What builds under a deadline, or per unit area (6)
- 16. Large earnings, partly, drive machinery (4)
- 17. Way down in the mine, or a rotating rod (5)

Down

- 1. Critic's upset closes the loop (7)
- 2. Monotonous hum, unmanned (5)
- 5. Everything, plus a cry, gets mixed (5)
- 6. Way in for logic, initially (4)
- 7. Grin, supporting the roof (4)
- 10. Prepare the bird, structurally speaking (5)
- 12. Judge the reading, instrumentally (5)
- 14. What fully holds your attention, fastens metal (5)
- 15. Heat, disturbed, shapes the wood (5)

Say Yes N Collaborate

JOIN THE SYNC TEAM

Open to all Engineering GRSS

Join the **SYNC Editorial Team** and help showcase research, innovation, and student stories in the School of Engineering newsletter.

✓ Designer

- Designing the issue
- Proofread content

✓ Journalists

- Interviewing researchers (lecturers, GRSS)
- Preparing a writeup based on the interviewee's response



INTERESTED? CONTACT JIAN YEW
jian.ng@monash.edu

