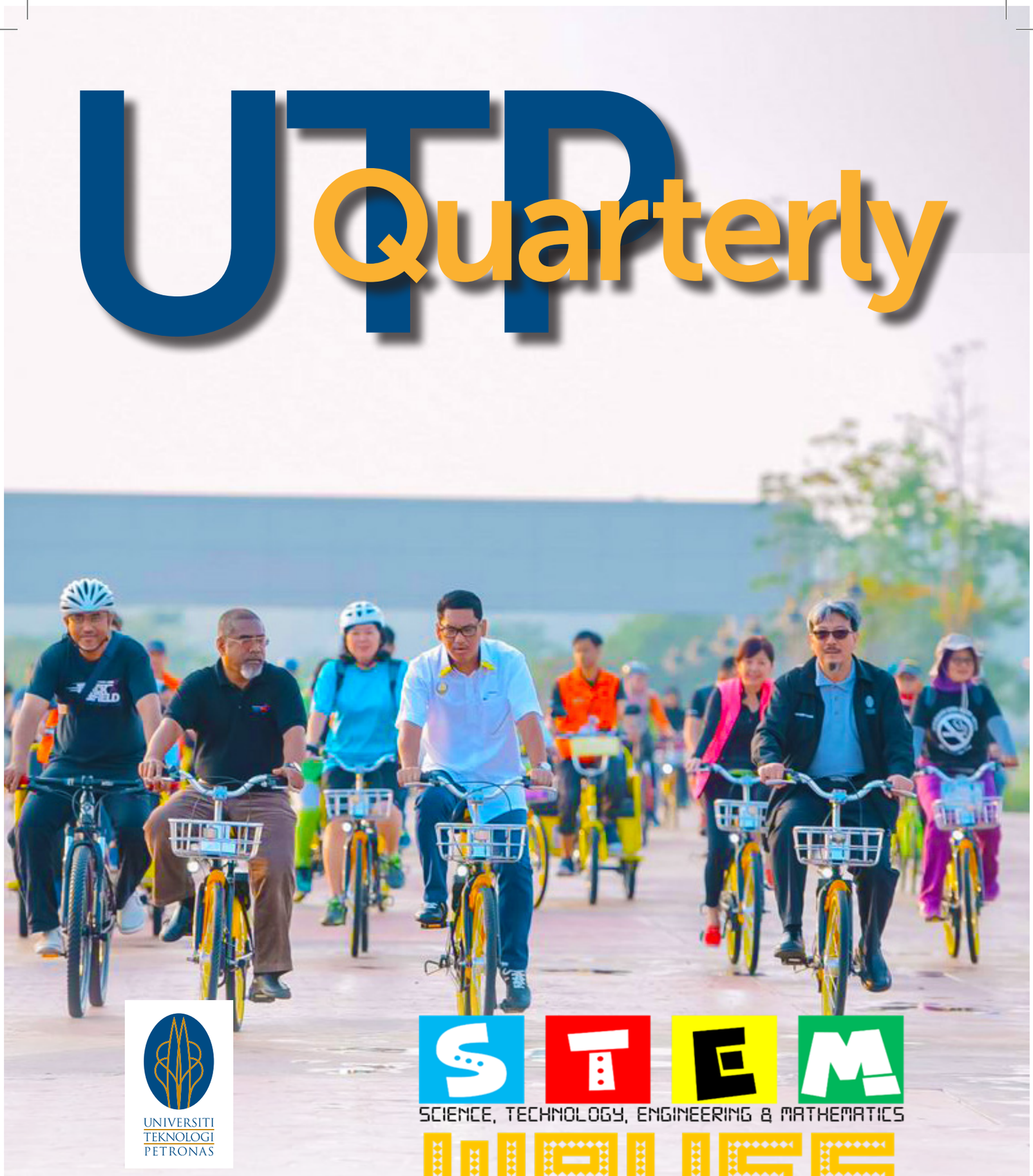
UTP Quarterly



UNIVERSITI TEKNOLOGI PETRONAS

STEM

SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

WAVES

PERAK@MAPS

Live Your Dreams!™

MOVIE ANIMATION PARK STUDIOS

IPOH · PERAK · MALAYSIA

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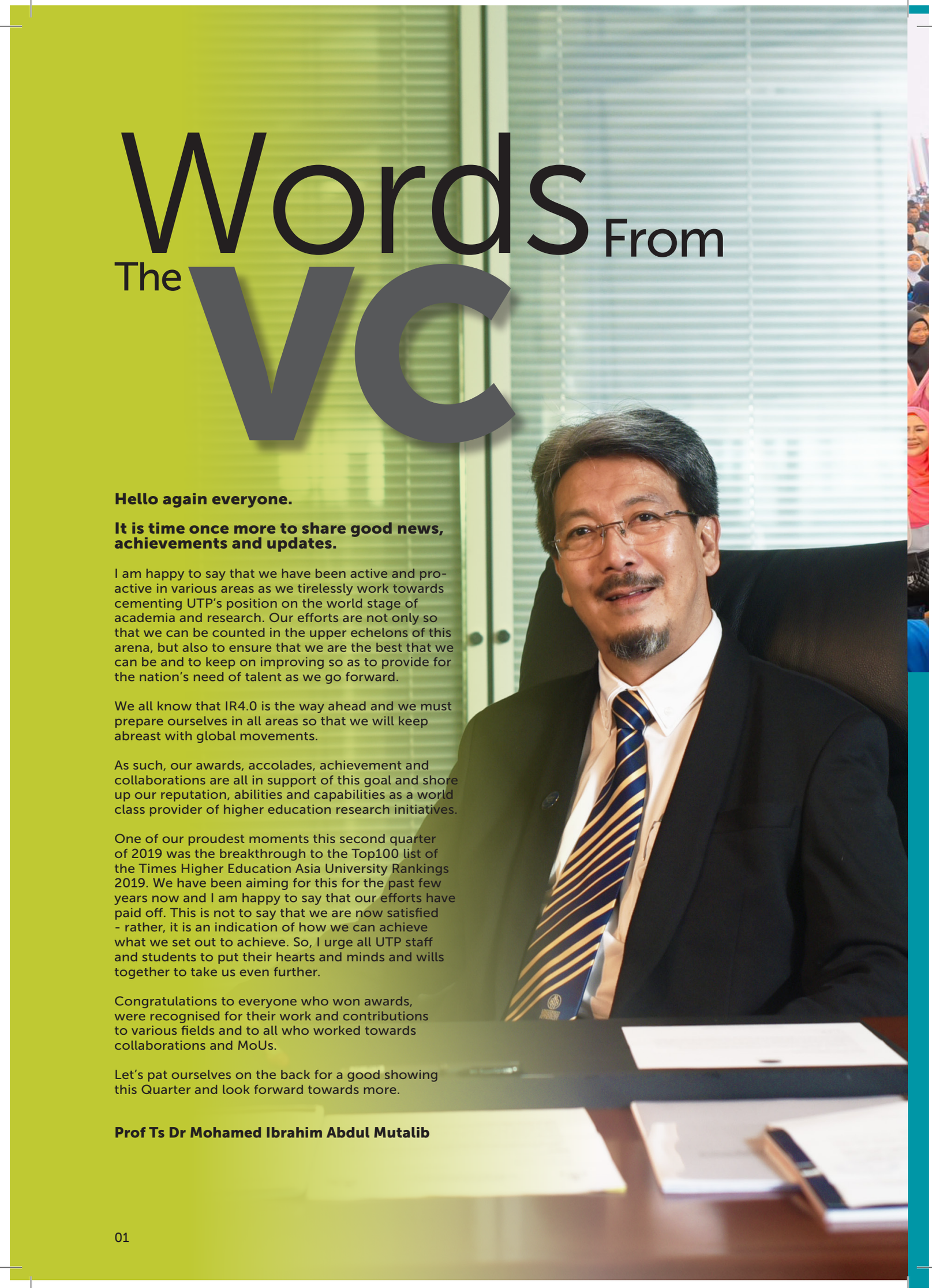
Words From The VC



Hello again everyone.

It is time once more to share good news, achievements and updates.

I am happy to say that we have been active and pro-active in various areas as we tirelessly work towards cementing UTP's position on the world stage of academia and research. Our efforts are not only so that we can be counted in the upper echelons of this arena, but also to ensure that we are the best that we can be and to keep on improving so as to provide for the nation's need of talent as we go forward.

We all know that IR4.0 is the way ahead and we must prepare ourselves in all areas so that we will keep abreast with global movements.

As such, our awards, accolades, achievement and collaborations are all in support of this goal and shore up our reputation, abilities and capabilities as a world class provider of higher education research initiatives.

One of our proudest moments this second quarter of 2019 was the breakthrough to the Top100 list of the Times Higher Education Asia University Rankings 2019. We have been aiming for this for the past few years now and I am happy to say that our efforts have paid off. This is not to say that we are now satisfied - rather, it is an indication of how we can achieve what we set out to achieve. So, I urge all UTP staff and students to put their hearts and minds and wills together to take us even further.

Congratulations to everyone who won awards, were recognised for their work and contributions to various fields and to all who worked towards collaborations and MoUs.

Let's pat ourselves on the back for a good showing this Quarter and look forward towards more.

Prof Ts Dr Mohamed Ibrahim Abdul Mutalib

Creating Waves of interest In STEM

The STEM Waves Perak Carnival was a resounding success which saw a host of fun and educational activities. Held at the Movie Animation Park Studios in Ipoh with the theme "Catalyst for a Sustainable Future," it drew in the efforts of academia, non-government agencies and industry players.

With the goal to educate school students and instill the interest for STEM among them, it encompassed forums on the Fourth Industrial Revolution, interactive games and hands-on activities. It also emphasized the importance of STEM to local communities in the bid to generate more interest for these areas as the wave of the future and the catalyst for change.

The carnival was officiated by Menteri Besar Perak, YAB Dato' Seri Ahmad Faizal Dato' Haji Azumu. It was organised by UTP's Science, Technology, Engineering and Mathematics (STEM) Exploration Centre in collaboration with Yayasan Pendidikan Kampar (YPK). It was part of the university's ongoing effort to promise STEM to Perak students through numerous outreach activities, talks, camps and competitions.

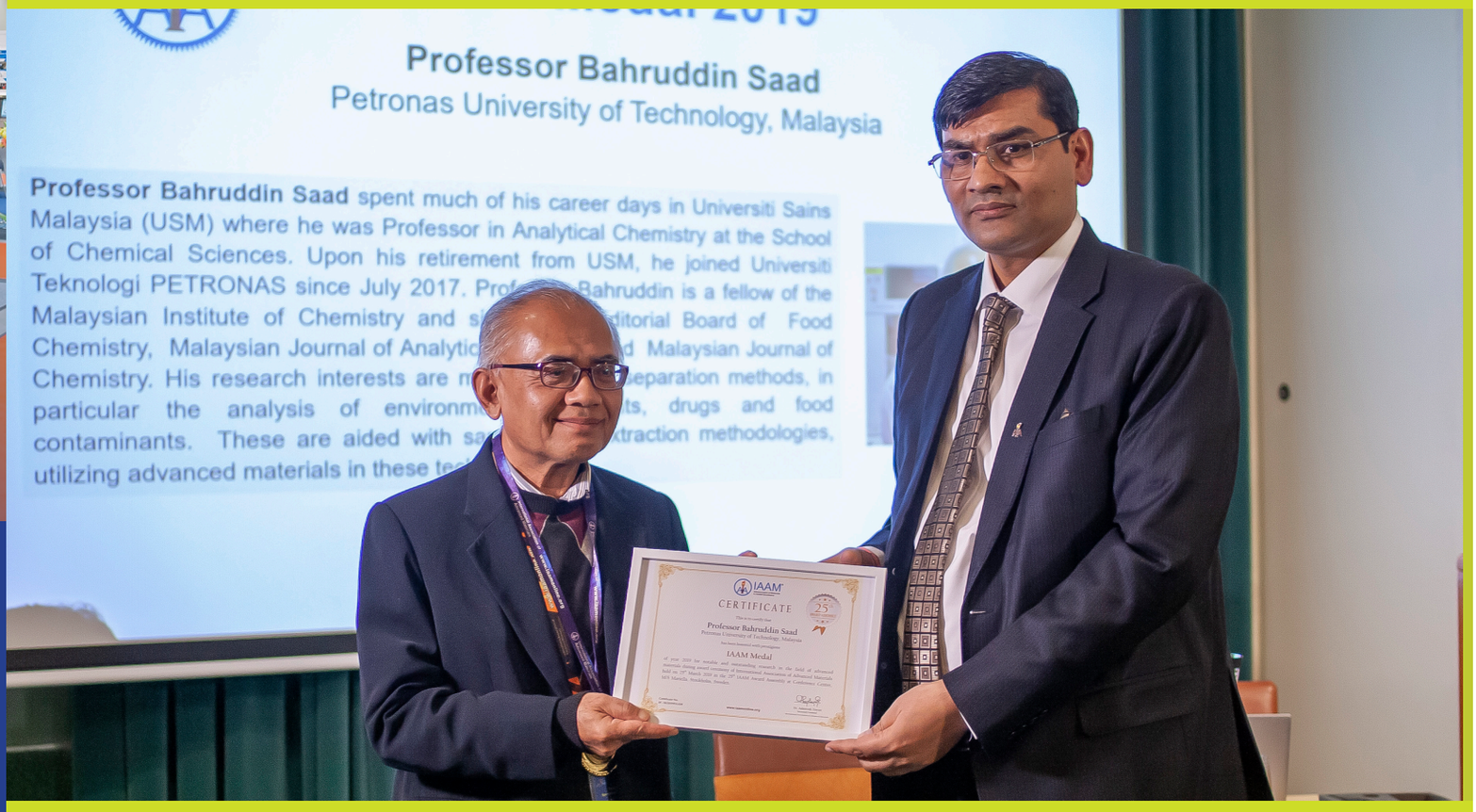
An Excellent Haul At ITEX 2019

Six gold and three silver medals fell into UTP's hands at this year's ITEX. On top of this haul, Associate Professor Dr Zahiraniza Mustaffa also clinched the Best Design Award from the Japan Intellectual Property Association for her research into "New Pervious Concrete Curb (Curbvious) in Reducing Urban Street Flooding".

Here's the list of our medal tally:

Title	Award	Lead Researcher
"SMART-EGPC: A State of the Art & Green Engineered Composite of Polymeric Materials"	Gold	Professor Dr Nasir Shafiq
"Chained-Function Waveguide Filter for 5G and Beyond"	Gold	Associate Professor Dr Wong Peng Wen
"Brain-NaviTM"	Gold	Associate Professor Dr Tang Tong Boon
"Optical Fibre Inclinometer Casing for Highway Embankment and Slope Monitoring (Smart Geo-Pipe)"	Gold	Associate Professor Ir Dr Hisham Mohamad
"PREDITACK: IOT-Enabled Device for Scanning, Forecasting and Immobilising Golden Apple Snails in Paddy Fields"	Gold	Dr Mazeyanti Mohd Ariffin
"New Pervious Concrete Curb (Curbvious) in Reducing Urban Street Flooding"	Gold	Associate Professor Dr Zahiraniza Mustaffa
"Wireless Solar Hydrogen System"	Silver	Professor Dr Norani Muti Mohamed
"Innovation on Rainwater Harvesting System: Subsequent Flushing with Vortex Diverter and Pasteurization (SVP)"	Silver	Dr Lavania Baloo
"Prediction of Petrophysical Properties for Reservoir Modelling"	Silver	Dr Maman Hermana

UTP Researcher is Honoured with **International Association of Advanced Materials Medal**



The International Association of Advanced Materials (IAAM) Sweden recently honoured Professor Dr Bahruddin Saad of UTP Fundamental & Applied Sciences Department (FASD) for his outstanding R&D contributions during the 25th IAAM Award Assembly Congress at M/S Mariella Stockholm Sweden on 25 March.

The IAAM Medal is awarded by the International Association of Advanced Materials (IAAM), a prime organisation in the field of Advanced Materials to individuals and associations for their notable and outstanding contribution towards the advancements of materials for global excellence. The organisation has over 50,000 members from 139 countries.

He received the award for his research on the introduction of simple method using advanced materials that can be used for the determination of important compounds such as food contaminants, drugs and environmental pollutants. For example, the method can be used by the Ministry of Health to survey contaminants in food that the public consume daily. Due to its simplicity and low-cost, the method allows a much larger pool of samples to be analysed.

"As an educator, one can hope that you are making an impact on future generations of scientists. This is a heart-warming recognition and I hope that it will inspire the younger generation to take up STEM education," said Bahruddin.

The 8th IBA-IFIBiop

UTP And Curtin University Malaysia jointly organised the 8th International Bioprocessing Association (IBA) International Forum on Industrial Bioprocessing (IFIBiop).

One of the most prestigious networking forums worldwide, the IFIBiop Conference, organised biennially attracts global participants with some 200 presentations at each event.

The five-day conference, held for the first time in Malaysia, featured more than 170 presentations with the theme "Bridging Sustainability and Industrial Revolution Through Green Bioprocessing". They were segmented into five areas - Bioenergy & Biofuels, Environmental Biotechnology, Food Technology & Engineering, Industrial Biotechnology and Upstream & Downstream Bioprocesses.

These are aptly in line with UTP's objectives and principles of sustainable development, pioneering new frontiers and research, developing innovative solutions and bringing mutual benefit to the environment, economy and society.

Nurturing Budding Minds

In collaboration with Institut Kimia Malaysia (IKM), UTP's Centre for Foundation Studies (CFS) organised the first ever Young Scientists Camp @ UTP 2019 over two days in April this year.

The 36 participants from 9 schools in Perak were exposed to various activities and learning opportunities to cultivate their interest and pose them to the Sciences, Technology, Engineering & Math (STEM) applications; and inspire students to choose UTP as their future university of choice.

A few of our professors and lecturers namely Associate Professor Dr Chong Fai Kait (Fundamental of Applied Sciences Department), Associate Professor Dr Izzatdin Abdul Aziz (Computer & Information Sciences Department) and Dr Belladona Maulianda Hidayat (Petroleum Engineering Department) also joined in the event and delivered career talks.

Celebrating Iftar In Of Giving

Reaching out to the needy, the month of Ramadhan has given greater meaning as we shared Iftar with 60 underprivileged folks and 177 orphans from various homes and locations surrounding our university. It was a joyous and boisterous event for the 1,000-odd guests who were in attendance.

Aside from sharing in a meal amidst warm conversation and happy mingling, our guests were also gifted with gifts of cash and kind from UTP staff, Yayasan PETRONAS and PETRONAS Human Capital Investment. These included a RM200 voucher for "baju raya," dates and other food items.

In the spirit of sharing and giving, and to promote the ideals of volunteerism, UTP staff and students also had a fun time cooking and packing 1,300 packs of "bubur lambuk" which were distributed to the university staff, students and those residing in surrounding areas.

UTP's other Ramadhan events also saw zakat presentations to 157 students from the Tabung Amanah Zakat as part of our initiatives to financially support needy and deserving students; a cheque presentation of RM1.2 million to TAZU and Sentuhan Kasih Ramadan 2019 and STEM Programme for the 177 orphans.

the Spirit & Sharing

5th Northern Malaysia Mandarin Debate

The 5th Northern Malaysian Mandarin Debate Tournament ended at Universiti Teknologi PETRONAS (UTP) on the afternoon of May 12. The Hainan University debate team won runner-up after five days of intense competition against other universities.

Organised by the debate club of UTP, the tournament aims to enhance students' critical thinking and encourage Malaysian college students to improve their Chinese language proficiency. This is the first time that international universities have been invited to join in the event, including five internationally renowned universities of Hainan University, Shanghai Jiao Tong University, National University of Singapore, University of Melbourne, University of New South Wales, and 19 local ones including the University of Malaysia.

This is also the first time for the Hainan University debate team to participate in the tournament since the team was formally established. Despite facing such problems as lack of experience in the rule of Oregon Debate, insufficient understanding of Malaysia's current situation, difficulties in information retrieval, and intensive competition arrangements, the team finally overcame these barriers, played well to reach the finals and won the second place in the 5th Northern Malaysian Mandarin Debate Tournament.

Four of our former students have been listed in the 100 Most Inspirational LinkedIn Icons in Malaysia. They are:

Kuhan Pathmathevan
Bachelor of Engineering (Hons)
Chemical Engineering
Class of 2005

Sunil Hasmukharay
Bachelor of Engineering (Hons)
Mechanical Engineering
Class of 2007

Wesley Chan / Wenzhen Chan
Bachelor of Engineering (Hons)
Chemical Engineering
Class of 2012

Ameirul Azraie Mustadza
Bachelor of Engineering (Hons)
Mechanical Engineering
Class of 2009

Our Latest MoUs & Strategic Partnerships

1

2

3

4

5

6

1. The University of Adelaide

For academic and cultural exchange activities in teaching, research and student experiences. The two institutions plan to work together in areas such as academic staff and student exchanges, joint research projects, seminars, conferences and public lectures, collaborative degree programmes at the undergraduate and postgraduate levels, joint quality assurance and benchmarking, among others.

This collaboration cements the long-standing relationship between UTP and the University of Adelaide, while extending the latter's 70-year education connection with Malaysia which started with the first Colombo Plan Scholars to Australia.

2. University of Science and Technology Chittagong, Bangladesh

To pave the way for mutually beneficial opportunities, activities and programmes, UTP and University of Science and Technology Chittagong, Bangladesh (USTC) will explore avenues to work together on teaching, research, training, academic development, and staff and student exchange initiatives.

Fostering and strengthening this collaborative relationship will benefit the two universities as they work together to further cement their positions as esteemed institutions of higher learning.

3. Hainan University

To strengthen collaboration between the two universities on scientific, technical and engineering competencies.

Hainan University (HU) is a research-intensive university that is part of China's national 211 project. It is financially supported by both Ministry of Education and Hainan Provincial Government and is the only comprehensive and key university of Hainan Province.

This partnership will see the universities working together on various exchange programmes encompassing faculty, scholars and students, academic information and teaching materials, periodicals and publications, research and conferences.

Subsequently, our VC, Professor Ts Dr Mohamed Ibrahim Abdul Mutalib, now sits on Hainan University's Advisory Board (IAB). He joins the ranks of internationally respected academics and researchers who represent a wide range of research areas and fields of education from the world over.

The IAB had its first meeting at the end of March in Haikou, Hainan, China, and it will advise the Management of HU on matters of innovation in scientific research, entrepreneurship, talent development, social service and cultural heritage.

4. Canadian University of Bangladesh

The collaboration will emphasise several fields including student mobility programme, joint facilitation and supervision of postgraduate studies, exchange of academic staff (including research attachment), joint research and teaching activities, participation in seminars and academic meetings, joint and exchange of publications, conferences and symposium as well as academic programme development.

According to Deputy Vice Chancellor Academic Prof Dr Hilmi Mukhtar, UTP is constantly expanding and growing our network and collaborative efforts knowing that one of the keys for growth is networking with the right partners. The university's goal is to become an internationally recognised partner of choice for industry and respected scientific community by the year 2025.

The signing of this MoU is an important step in maintaining a sustainable relationship with institutions in Bangladesh. With this collaboration, it will also pave the way to attract more prospective Bangladeshi students to study in UTP and the Southeast Asian countries.

5. Hadhramout University (HU) Yemen

To enhance networking between both institutions with emphasis on several fields including student mobility, staff training, development and attachment, joint research and development activities, joint advocacy including sharing of information and resources and joint organisation of seminars, conferences and workshops.

UTP hopes that this collaboration will also pave the way to attract more prospective Yemeni students to study in UTP. To date, UTP has enrolled 52 Yemeni students, of which 18 are undergraduates and the remaining 34 are postgraduates.

6. Universitas Katolik Parahyangan

Advocating the Indonesia Malaysia Industrial & Institutional Initiative (IMIII), the Reseach Collaboration Agreement between UTP and UNPAR will strive to ensure that joint research efforts are industry relevant.

This will be done through close engagement, collaboration and partnership between university and industry, while ensuring the sustainability of the two establishments in challenging times.

Designed to further develop the knowledge of both universities in the field of "Engineering and Technology", the efforts of the two institutions of higher learning will help propel the universities into the Fourth Industrial Revolution.

Night Light by the Sun

Locally-designed solar powered gen set for pasar malam traders is small and light enough to go into a backpack

For the longest time, our pasar malam traders have used petrol and diesel generator sets for lighting to conduct business. These gen sets are famously noisy, smoky, smelly and in some cases, look like they are going to burst into flames. They generate temperatures of some 180 degrees Centigrade and noise levels of some 70 decibels. They cost anything from RM300 to RM1,500, need regular maintenance and typically weigh about 20 kilogrammes. To use, it can cost about RM4 in fuel for a night at the market.

Surely there could be a better, cleaner way to light up our night markets? That was the question posed to Mohd Syaifuddin Mohd, a lecturer at Universiti Teknologi PETRONAS' Mechanical Engineering Department and researcher at the university's Centre for Automotive & Electrical Mobility. In 2011, he and his team of researchers were already working on designs for hybrid and electric cars. The high energy density batteries – the key tech in electric cars – could, they figured, be adapted to gen sets.

The idea of greener gen sets for pasar malam traders had first come from H2E Technologies Sdn Bhd, a green tech engineering startup in Kedah. With a partnership formally in place, Mohd Syaifuddin and his team matched their research to the real life problems of ordinary Malaysians.

It didn't take long to develop their first prototype, ALAM 1.0, using deep cycle batteries and after trials in 2012, H2E Technologies sold 30 units to traders in Alor Star, Sungai Petani and Penang. It was assembled in a garage-like workshop by the shareholders themselves as no workers had been hired yet. It won a gold medal at the 2012 MTE.

ALAM is quiet, and produces no smoke or odor or heat. It can be charged at any plug point (as you would a powerbank) or at a designated off-the grid solar energy source. It requires zero maintenance and a generally problem free.

"This unit is intended for the future, when obtaining energy from a solar or other renewable sources will be commonplace," says Mohd Syaifuddin. "Until then, a user can just plug into the grid, even at home."

In 2013, the Advanced Lighting Application Module (ALAM) Eco Generator was fine-tuned into ALAM Mini, a shoebox-sized unit weighing just two kilogrammes which can slip into a backpack.

A user needs to spend about 60 sen to charge it to last an eight-hour work night at the pasar. Over 100 units were sold to traders at RM990 each. It won an ITEX 2013 Gold medal.

Since then, ALAM Mini has gone on road shows and product launches with MOSTI and other agencies in pursuit of the best business model to go fully commercial.

"We have received a lot of interest and feedback," says Mohd Syaifuddin. "Traders have asked for a more powerful unit so they can use it to operate small machines like blenders and mixers at the market."

Other interested parties include agencies which need good lighting at roadblocks, guard posts, rescue operations, disaster work, and investigation in poorly lit locations. "We also heard from the construction industry. They need portable energy sources when working on high rise buildings, for tasks like welding. All are attracted by its small size and weight and good power output."

With liveable cities increasingly turning to bicycles as an important mode of transport, ALAM Mini could become a compact solution for charging stations for electric bicycles.

As an academic, Mohd Syaifuddin couldn't help but think of his colleagues whose research work takes them into remote places like the jungle, mines and to sea. Among other things, they need power for cameras, laptops and smartphones. "The applications are endless actually, especially because it can be charged by solar power and other small renewable sources."

It is this feature that places Mohd Syaifuddin exactly where his heart is. He is officially a car-loving mechanical engineer in a relationship with electrical engineering. While standing at this intersection, Mohd Syaifuddin fell in love with renewable energy. The first baby of that triangle was a green car.

New on BOARD

We welcome our new colleagues from both far and near, who joined us during the months of April to June this year and we wish you a great journey here at UTP.

Muhammad Syakir Mohd Rahim
Executive
Finance

Nur Azma Othman
Clerk
Yayasan UTP

Dr Salah Eldin Mohammed Elfakki Hassan
Post-Doctoral Researcher
Centre for Automotive Research & Electrical Mobility (CAREM)

Mohd Shauqei Mohd Shukri
Senior Assistant
Security Services

Muhammad Hilmi Said Abd Halim
Assistant
Security Services

Amran Abas
Supervisor
Security Services

Ahmad Faizal Hashim
Senior Assistant
Security Services

Dr Zulkipli Ghazali
Associate Professor
Management & Humanities Department

Noor Azahar Ibrahim
Principal Lecturer
Geosciences Department

Faizah Mat Isa
Executive
IT & Media Services

Muhammad Hir-Zun Nodion
Technologist
IT & Media Services

Zaimizi Hamdani @ Hj Othman
Director
Strategic Alliance Office

Ranked in the Top 100 for THE

Climbing 16 steps from the 114th spot, we now sit at 98th place in the Times Higher Education Asia University Rankings 2019.

This is another testament of our outstanding and continuous achievements in the international arena.

In keeping with our goal to continually excel and to reach the higher heights in the world of academia we will also introduce four new academic programmes namely Bachelor of Materials Engineering, Bachelor of Business Management, Master of Science in Corrosion Engineering and Master of Science in Industrial Environmental Engineering.

These new programmes will complement our existing cache of academic offerings and increase UTP's attractiveness as a primary choice for higher education. Simultaneously, the university will also be improving facilities with the building of new academic blocks, a student centre and accommodation facilities.

Together with its high employment rate of 90% within six months of graduation, the entrepreneurship values instilled and encouraged in students, the emphasis on creativity, innovation and the spirit of excellence, UTP continues to cement its position as a premier university, not only in Malaysia but globally as well.