SET eDigest

SUNWAY UNIVERSITY
A CLASS ABOVE

Issue 10 | March 2022

"Engineering is the art of directing the great sources of power in nature for the use and convenience of man."
Thomas Tredgold

School of Engineering and Technology

Preface

Dear Colleagues and Friends,

Welcome to the first issue of our eDigest of 2022. It is my great pleasure to again acknowledge that the year 2021 was exceptionally successful for our School. I would like again to congratulate and thank our academic, research, administrative, and technical staff as well as our numerous partners, collaborators, and supporters at Sunway University and outside it for the very significant achievements that we all should be proud of. The School of Engineering and Technology has attained indeed remarkable accomplishments practically in all aspects of our operations. It included growth in undergraduate and postgraduate student cohorts; increased teaching efficiency and introduction of new programmes; a very significant increase in volume, quality, and impact of research and development activities; solid contributions to the university governance and management; numerous social and community involvements. It was a very well-deserved happy and rewarding time when we celebrated our success in December last year. In turn, at the beginning of 2022, the Sunway Education Group supported by the Jeffrey Cheah Foundation kindly acknowledged the remarkable efforts and results achieved by the Sunway University team by providing generous bonuses and increments. Finally, just a couple of weeks back the School was overwhelmed by the great announcement of the academic and admin staff promotion results – the outstanding work of a large group of our colleagues has been recognised by promoting them to the upper steps in their professional careers. Please join me in congratulating our colleagues on their profound success and advancement. Please also join me in expressing our sincere gratitude to the Sunway Education Group and Sunway University for their very competent leadership and continuing care for all of us.

Now we are steadily progressing forward for already over three months in the year 2022 where the performance expectations are placed on new heights. It is important to acknowledge that the targets for this year are not just quantitively more extensive but also of significantly greater quality and higher calibre. We are now aiming for success in applying to the serious national and international research grant schemes, collaborating with eminent international partners, publishing in the top-ranked journals, participating in organising highly reputable regional and global academic and research events, and many more. In short, we are fast progressing towards establishing ourselves in the “premier league” of the world’s academia. It is generally not a trivial task. However, achieving fast progress today is even more challenging as we are operating in a highly demanding and fast-changing operational environment. We are gradually getting out of the restrictions imposed by the COVID-19 pandemic towards returning to a more traditional way of teaching, carrying out research, delivering required office and technical work, and getting on with our day-to-day university life. And I find it to be quite of a surprise that it is actually not easy at all to come back to the pre-pandemic mode of life and work. In fact, it was faster, clearer, and more decisive to adopt the pandemic-caused and authority-introduced “work from home” model two years ago with its entirely online teaching, research, and office support than to gradually come back to a kind of normality at the recent time and in present. From time to time, it is getting hard for all of us to see how to find a suitable and reasonable solution enabling us to continue our progress as a fast-growing and leading research-intensive School of Sunway University. Yet, as Sir Winston Churchill once said “If you’re going through hell, keep going.” And that is what I would like to ask you all – let us keep going together while supporting each other, i.e., being a team. We will certainly be able to scale new great heights on the way to truly achieving the vision of our School: To be among the world’s leading schools in the chosen areas of Engineering and Technology and a favoured choice for students.

With very best regards to you all

Professor Serge Demidenko

Dean, School of Engineering and Technology

Contents

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SET Town Hall Meeting (January 2022 Semester)

The Town Hall Meeting was held on 10 February 2022 (Thursday). The Dean shared with the School of Engineering and Technology (SET) team on the new Head and Assistant Head appointments for the Department of Computing and Information Systems (DCIS), 2022 SET Committee Chairs, student and staff statistics, Premier Digital Tech and Institution status renewal, and other important updates. The Associate Dean (Research and Postgraduate Studies), Professor Mohamed Kheireddine Aroua, introduced the School Research and Enterprise Committee (SREC) 2022 and Early Career Research (ECR) Network School Representative, and shared statistics on SET publications and postgraduate research students, research grants, research achievements, research events, research grant opportunities, and other updates. Last but not least, Associate Dean (International), Professor Lau Sian Lun, shared updates on strategies and goals in employability, engagement and internationalization.

SET Town Hall Meeting January 2022 Semester

"The benefit of an open town hall meeting is one that you get to hear a lot of different views, and two it has credibility."
John McCain

Sunway Analytics Society Low Code-a-thon 2021

BSc (Hons) Information Systems (Data Analytics)'s very own programme club, Sunway Analytics Society has successfully coordinated a Low Code-a-thon with the sponsorship and collaboration of Asia Online Publishing Group (AOPG) and Jet Workflow that was held virtually on various online platforms such as Zoom and Microsoft Teams throughout September, October, and November 2021.

As the first virtual low coding competition by Sunway Analytics Society, this competition's main notion is to present the theory of low code, introducing the concept of "Now, Everyone Can Code!" to more people as the club believes that programming and data are among the utmost crucial skills to possess in the technological era. On top of that, the competition focuses on enhancing the Sustainable Development Goals (SDGs), hence this key criterion is included in the problem statement of the competition as well.

The Low Code-a-thon 2021 kick-started with a training session provided by Jet Workflow to educate Sunway Analytics Society's Board of Directors on the main knowledge of the Jet Workflow software. Furthermore, it is also held to ensure that the Board of Directors are familiar with the functionalities of the software in order to provide guidance and assistance to the participants when the competition is announced.

Moving on, once all Board of Directors are familiar with the methodologies proposed in the Jet Workflow software, the founder of the company, Mr. Jin Chong himself, issued all Board of Directors with a certificate to indicate that everyone is equipped with the necessary knowledge before proceeding. At this point, Sunway Analytics Society swiftly announced the Low Code-a-thon 2021 to all members and further reached out to students in both Sunway University and Sunway College.

Several weeks upon announcement, the Low Code-a-thon 2021 began with a series of events: -

1. The Story of My App: How Did I Become a Software Developer Talk - hosted by Mr. Jin Chong, the founder of Jet Workflow, to share some knowledge and experience on application development.

2. Low Code-a-thon 2021's Launching Webinar - hosted by Mr. Andrew from AOPG, Mr. Jin Chong from Jet Workflow, and Professor Angela Lee from Sunway University, to launch the entire competition.

3. Jet Workflow Workshop - hosted by Sunway Analytics Society's Board of Directors, to give participants more insights on the software.

4. Not a Normal Design Thinking Workshop - hosted by Professor Lau Sian Lun from Sunway University, to give participants a better idea on how to come up with a designation for an application.

5. Pitch Perfect: The Ultimate Pitching Workshop - hosted by Ms. Cindy Chow from Sunway University, to allow participants to understand the methodologies of pitching a proposed application.

6. Low Code-a-thon 2021's Award Giving Ceremony, hosted by Mr. Andrew from AOPG, Mr. Jin Chong from Jet Workflow, and Professor Angela Lee from Sunway University, to announce the winners for the competition and mark an end to the entire series.

The entire series of events were held to introduce brand new concepts to the participants of the competition, allowing them to gain better insights towards the proper flow of proposing an appropriate designation, creating the actual application, and finally, pitching the idea. This Low Code-a-thon 2021 was intentionally designed in a way to comply with real-life scenarios to better prepare participants for the future as it displays the expectations towards them.

At the end of the competition, three winners and seven consolation prizes were awarded. Sunway Analytics Society is beyond delighted as all the winners are active members of the club, and seven out of nine winners were from the BSc (Hons) Information Systems (Data Analytics) degree programme, whereas the two remaining winners were from the Bachelor of Software Engineering (Hons) and the BSc (Hons) Information Technology, which are both from the Department of Computing and Information Systems.

The Champion is Team Purple, with the application called TescoLAB, and the team members are Silinda Lu Pey Qi, Tang Su Yee, and Lee Sin Hui.

The First Runner-up is Team Kafka, with the application called Kafka Connect, and the team members are Kelvin Lee Kean Wyn, Toh Zhenben, and Ng Siang Yee.

The Second runner-up is Team Mumbo Jumbo, with the application called Medicare, and the team members are Foo Khai Liang, Chun Hanssen, and Shabab Mahmood Areek.

Competition Announcement Post

Winners' Announcement

Top 10 academics associated with Malaysia according to the Scopus database in 2021

Despite facing the Covid-19 pandemic that came to so overwhelmingly control our lives as well as working remotely most of the time, Distinguished Professor David Andrew Bradley (Head of the Research Centre for Applied Physics and Radiation Technologies) and Professor Mayeen Uddin Khandaker have managed to publish 88 and 105 journal articles respectively over the year 2021, and emerged as among the top 10 academics associated with Malaysia according to the Scopus database (see Fig. 1). Also, an increase of more than 100% of the research citations (sourced from Scopus) since pre-pandemic year 2019 (see Fig. 2). Overall, 64%, 32% and 5% of the articles are published in the respective quartile Q1, Q2 and Q3 journals. Out of 35 journals, as can be seen in Fig. 3, articles published in Radiation Physics and Chemistry journal make up 43% of the year 2021 publications.

Congratulations, Professor David Andrew Bradley and Professor Mayeen Uddin Khandaker!

Professor David Andrew Bradley

Professor Mayeen Uddin Khandaker

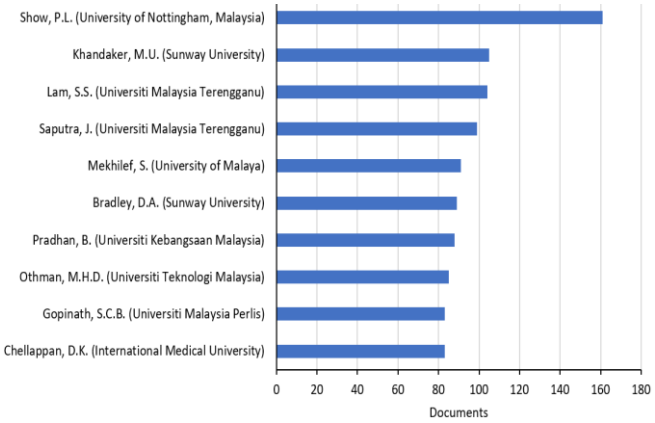


Fig. 1. *The published journal articles over the year 2021 acquired via Scopus database, indicative of the top 10 academics affiliated with Malaysia. Two listed academics,* ***Distinguished Professor David A. Bradley*** *(Bradley, D.A.) and* ***Professor Mayeen Uddin Khandaker*** *(Khandaker, M.U.), are from the Research Centre for Applied Physics and Radiation Technologies, School of Engineering and Technology, Sunway University.*

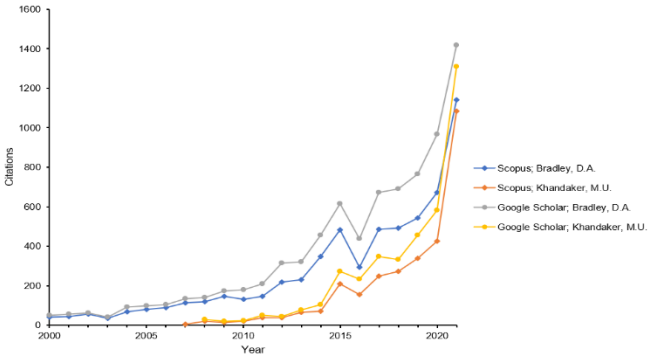


Fig. 2. *Citations per year adapted from the sources of Scopus and Google Scholar.*

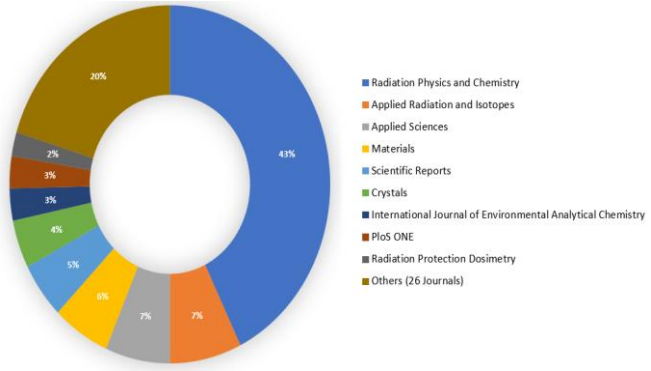
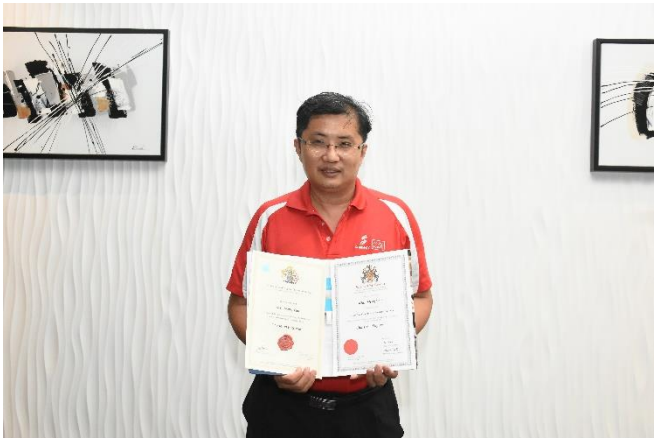


Fig. 3. *A percentage of published articles in the Scopus indexed journals.*

Professor Yap Kian Meng is now a Chartered Engineer (CEng) under the Engineering Council, UK.

Professor Yap Kian Meng is now a Chartered Engineer (CEng) under the Engineering Council and IET, UK. The Chartered Engineers (CEng) recognizes an engineer or researcher who develops solutions using the new or existing technologies through innovation, creativity and new ideas. The CEng status is technical accountability for complex systems with significant levels of risk. It is also awarded to recognize high achievements in knowledge, solving engineering problems, management and leadership, interpersonal skills and professional commitment (UK-SPEC). Professor Yap started his engineer's career from Practical Trainee, Assistant Engineer, Product Engineer, Research Assistant and Network Engineer. The title of CEng status motivates Professor Yap to continue practicing professional development and ethics in IT and Engineering. He has developed many innovative ways in sensory technology research resulting in Q1 journal publications. Professor Yap is currently a Professor at the Department of Computing and Information Systems (DCIS). He is also the head of Research Centre in Human-Machine Collaboration (HUMAC), School of Engineering and Technology (SET) at Sunway University.



Professor Yap Kian Meng

'Automated Touchless Hand Sanitizer Dispensing Device' won a Silver Award from RITEC 2021

Professor Mayeen Uddin Khandaker and his students won a Silver Award in the Research & Innovative Technology Competition 2021 (RITEC 2021) for the work entitled "Development of a Novel Design and Subsequent Fabrication of an Automated Touchless Hand Sanitizer Dispenser to Reduce the Spread of Contagious Diseases" under innovative product category. The event was organized virtually by the Faculty of Engineering Technology, Universiti Tun Hussein Onn Malaysia on 27 October 2021.

The key problem of the conventional ultrasonic and infrared-based dispensers is their malfunctioning due to the interference of sunlight, vehicle sound, etc. To overcome such problems, this work demonstrates a novel design and subsequent fabrication of a low-cost, touchless, LDR-based automated sanitizer dispenser to be used in busy public places. The overall performance of the manufactured device was analyzed based on the cost, power consumption, and environmental factors by deploying it in busy public places as well as in indoor environments, and found to be more efficient and cost-effective compared to conventional dispensers available in the market. The presented device is expected to play a key role in the disinfection of public hands in a contactless manner, hence reducing the spread of infectious diseases in society.

The details of this innovative product are available in the journal of Healthcare at https://doi.org/10.3390/healthcare9040445

"Medical physics is an applied area of physics."
John Cameron

Silver Award in the Research & Innovative Technology Competition 2021 (RITEC 2021)

"Artificial intelligence is a tool, not a threat."
Rodney Brooks

Proud of HUMAC, SET!

Professor Yap Kian Meng (Head, Research Centre for Human-Machine Collaboration) and team won another very competitive International Collaborative Grant funded by Japan's government with an amount of US$59,900. There were 21 applications from Malaysia and only 2 were successful. Congratulations for this outstanding achievement!

The project is to predict plant health mapping in Mangrove/Nipah protected area in Belawai, Sarawak, Malaysia. The technology will also be used to conduct artisanal-fishing mapping and create hotspots of where such fishing is conducted at the community level.

The joint proposal is a collaborative work of Sunway's Research Centre for Human-Machine Collaboration (HUMAC), Sarawak Forestry Corporation (SFC), AeroSense Inc. (Japan), Funlead Inc. (Japan) and University of Technology Sarawak. The work is dedicated to the importance of the best local solutions for the pressing environmental issues. Using Sensory Technology, Artificial Intelligent and imaging, the project will contribute to Planetary Health and Sustainable Development Goals 15 I.e. life on land.

The HUMAC Project Team:

Professor Yap Kian Meng (PI), School of Engineering and Technology (SET).

Assoc. Prof. Dr Lee Yun Li (co-PI), School of Engineering and Technology (SET).

Assoc. Prof. Dr Lin Mei-Hua (co-PI), School of Medical and Life Sciences.

Ir. Dr. Steven Eu Kok Seng (co-PI), School of Engineering and Technology (SET).

From top left to bottom right:

Professor Yap Kian Meng, Assoc. Prof. Dr Lee Yun Li, Assoc. Prof. Dr Lin Mei-Hua and Ir. Dr. Steven Eu Kok Seng.

UNESCO-UNEVOC Research Award Winner

Congratulations to Professor Graeme Atherton, Professor Glenda Crosling and Professor Angela Lee on winning the UNESCO Research Award Grant worth 23000 euros.

This is a multidisciplinary research team drawn from Centre for Higher Education Research (CHER) and School of Engineering and Technology, Sunway University won UNESCO-UNEVOC research grant. Project Team Leader Professor Graeme Atherton (CHER Adjunct Professor and Professor at the University of West London, UK) with team members being Professor Glenda Crosling (Head, CHER) and Professor Angela Lee Siew Hoong (Head, Department of Computing and Information Systems, School of Engineering and Technology) for the project "Creating an Online Repository on Digital Skills and Competence in TVET".

The focus of this project is to identify the digital competencies frameworks specific to TVET. The review and presentation of this outcome will be considered and approved by UNESCO for consideration on their webpage. The framework revolves around applying digital competences in work-based learning and apprenticeships, digital skills for multi-generational teachers and learners, competence design in different regions in digital technologies.

Professor Angela Lee

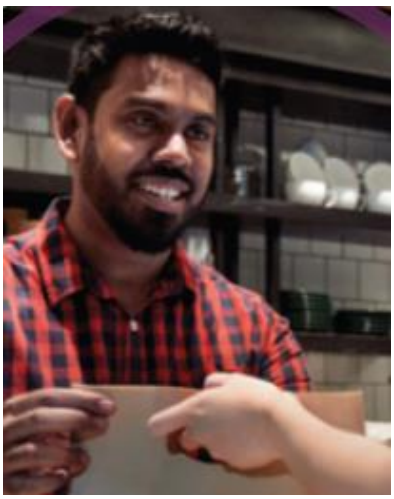
SET Alumni on the Move

My mother used to say, “Is this computer going to put food on your table? Take your books now!” 18 years later, I can proudly say, “Dearest mom, yes, that very computer puts food on my table and a shelter over my head.” The passion I had towards technology since young has moulded me to be who I am today.

I started my career journey as an intern in a company called MyTeksi, now known as Grab. Back then, MyTeksi was a start-up company - not many people knew about it and there weren’t many guides to work with. Once my internship was over, my manager waited nine months for me to complete my studies and hired me as an Associate Engineer in 2016. In 2017, I got promoted to be a Support Engineer. In 2018, I became the lead and was required to travel around Southeast Asia to train and set up new teams. Consequently, in 2019 and 2020, I was also promoted, and I am currently holding the position of Regional Manager II APEX Engineering. There are three teams consisting of 20 people altogether, working in eight different countries under my supervision. I was also honoured with the Grab CEO Award, given by Grab founder Anthony Tan. This award is for Grabbers who have exemplified Grab's company culture and principles and consistently gone the extra mile.

It obviously wasn’t a smooth sailing pathway towards where I am now. I’ve had many obstacles and challenges throughout the way. Nevertheless, those failures have always made me a stronger person and I am proud of the person I have become. To students, work hard and grab the opportunity that is given without hesitation. Don’t give up easily and always remember there’s a light at the end of the tunnel.

Source: BLAZE – The Sunway University Magazine, Issue 57, December 2021



Jagathish Velmunigan

BSc (Hons) Information Systems

Regional Manager II, APEX Engineering, Grab

Tsai Yao Cherng: Life is a Rollercoaster

Tsai Yao Cherng also known as Chip to his friends, started his tertiary education at Sunway University by enrolling into a Diploma programme in Information Technology. Upon completion, Chip enrolled in the BSc (Hons) in Computer Science, a programme under the Department of Computing and Information Systems, School of Engineering and Technology.

During his university life, Chip was always active in clubs and societies' activities. He was part of the Peer Counselling Volunteers, a peer support network for students to promote the culture of students helping their peers. He was a member of Sunway University Toastmasters Club, a platform for him to improve his communication and leadership skills. He was also involved in the Sunway University Ensemble where he enjoyed making music together and sharing that passion with the audience.

Despite graduating with First-Class honours, life has been one rollercoaster ride for Chip. Recalling his valedictorian speech where he mentioned that "Our journey ahead might not be smooth sailing..." This saying came to pass soon after he stepped into the working world when the start-up company he joined failed and ceased operations. He then joined Deloitte SEA Services and was eventually promoted to manager where he successfully introduced and implemented Robotics Process Automation (RPA) projects with high full-time equivalent savings. He also handled end-to-end projects, launched several automation projects such as the document management system, online meeting room booking system and business relationship forms to multiple business functions across several countries in Southeast Asia.

However, just when he thought everything was going great, he was tested positive for COVID and his family went through tremendous stress because of his condition. Fortunately, they were able to navigate through the tough times and he has since recovered fully. Chip loves the quote, "things may go wrong today but focus on what's going right. Stay positive and keep going".

Source: https://university.sunway.edu.my/explore/thinkpieces/Tsai-Yao-Cherng

Tsai Yao Cherng

New Appointment

Professor Angela Lee Siew Hoong

Head, Department of Computing & Information Systems

Dr Chin Teck Min

Assistant Head, Department of Computing & Information Systems

Research Collaboration

Staff Name	Department/Centre/Group	Partner/ Institution	Validity	Purpose of Scope
Professor Mohammad Khalid	Graphene and Advanced 2D Materials Research Group (GAMRG)	Teesside University, UK; North China University of Water Resources and Electric Power; Federal University of Agriculture, Nigeria; Institute for Soil Science and Agricultural Chemistry, Hungary; University Technology Brunei	Until project completion	1. Teesside was the lead applicant in a funding application named Advanced Manufacturing of Biochar in UK/China/Malaysia/Nigeria ('the project') as set out in Schedule 1; and 2. British Council has awarded a contract to Teesside to carry out the project: and 3. Teesside wished Collaborating Parties to carry out portions of the project as envisaged in the proposal to the British Council.

Grants Awarded

Project Lead	Department/Centre	Gant Scheme	Project Title
Professor Yap Kian Meng	Research Centre for Human Machine Collaboration (HUMAC)	Asia-Pacific Telecommunity (APT): International Collaborative Research (Category 1) 2022 Funded by the Government of Japan	Using drone and high-resolution imagery technology to predict plant health and artisanal fishing in mangrove/nipah and riverine ecosystems in Sarawak. Internal Start-up Funds.
Ir. Dr Steven Eu Kok Seng / Professor Yap Kian Meng	Department of Computing and Information Systems (DCIS)	SunU: Autonomous Library Shelf-Reading Robot	Autonomous Library Shelf-Reading Robot: Finding Misplaced and Missing Books
Professor Graeme Atherton / Professor Angela Lee Siew Hoong	Department of Computing and Information Systems (DCIS)	UNESCO-UNEVOC	Creating an Online Repository on Digital Skills and Competence in TVET

Staff Promotion 2022

Assoc. Prof. Dr Angela Lee Siew Hoong
promoted to
Professor
Department of Computing and Information Systems

Assoc. Prof. Dr Teh Phoey Lee Heard
promoted to
Professor
Department of Computing and Information Systems

Assoc. Prof. Dr Adarsh Kumar Pandey
promoted to
Professor
Research Centre for Nano-Materials and Energy Technology

Assoc. Prof. Dr Yap Kian Meng
promoted to
Professor
Department of Computing and Information Systems

Dr Chin Teck Min
promoted to
Senior Teaching Fellow
Department of Computing and Information Systems

Dr Muhammad Aman Sheikh
promoted to
Senior Lecturer
Department of Computing and Information Systems

Dr Muhammed Basheer Jasser
promoted to
Senior Lecturer
Department of Computing and Information Systems

Dr Richard Wong Teck Ken
promoted to
Senior Lecturer
Department of Computing and Information Systems

Aisha Rozaida Mohd Ridzuan
promoted to
Asst. Manager
- Administration
SET Admin

Angie Chin Chia May
promoted to
Senior Executive
SET Admin

Norul Hazizah Hussain
upgraded for
Executive
- Laboratory
Research Centre for Carbon Dioxide Capture and Utilisation