

SST *eDigest*

SUNWAY
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A CLASS ABOVE

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School of Science and Technology

Preface



Dear Sunway Colleagues, Students, Collaborators, Visitors and Guests,

I have found it not easy to write this message to you all to welcome to this third issue of our School quarterly eDigest. This is because of the very rapid and dramatic changes that have happened since the beginning of the year 2020 and culminated at the end of the first quarter of the year. We started this year with great enthusiasm and energy. They were based on the overall success of the School in the year 2019. Based on that solid foundation we have been developing our plans and new initiatives. The aim was to further advance our growth in student numbers, teaching quality, postgraduate supervision, research outputs, physical infrastructure, facilities and equipment, academic programs development and introduction, staff capacity building and career promotions, professional and social activities and many more. By fulfilling our plans and achieving our personal and group aspirations we would propel all of us to new heights in our professional careers as well as to reassure the continuation of the upward trajectory progression our School enjoyed in the past years. In turn, it would also help to achieve the very challenging tasks and performance indicators expected from us by the University at large in 2020.

The results of the first quarter of this year were very solid in practically every aspect: from growth in the student numbers to elevated research performance, new awards, new events – it is such a pleasure to read about them in this e-Digest!

Unfortunately, within a short period, the local coronavirus outbreak has developed to become the global pandemic affecting the majority of the world's countries including Malaysia. It is easy to realise now that the on-going COVID-19 pandemic has already changed the overall social, academic, economic, etc., environment not just in Malaysia, but around the globe dramatically. It would be right to say that we are already living in a new reality, and the changes and overall life landscape will be even more different once the world would have managed to come through this "plaque". We are lucky and privileged to work in these turbulent times for strong and dynamic Sunway University solidly backed by the Tan Sri Jeffrey Cheah Foundation as well as by the entire power of the Sunway Group. However, there are no doubts that we as the School will face serious challenges and obstacles on our way ahead while adjusting to new realities, learning and employing new modes of operation. And I sincerely wish success to all of us. To achieve it, devotion to the profession, loyalty to the institution and our students, flexibility and creativity, persistence, energy and ability to walk an extra mile, and many more will be required. It will not be a short journey. However, if once we move forward as a team – we surely will be there. The African proverb says: "If you want to go fast, go alone. If you want to go far, go together."

I wish you and your families to get well through the calamity of the on-going pandemic. I do hope we will be up to the tasks in the forthcoming semester and beyond it while delivering our reliable performance and traditionally strong results.

Yours sincerely,

Professor Serge Demidenko

Dean

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The SST eDigest Editorial Team:

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Happening @ SST

Talk on “Neuropsychology of the Mind”

One of the most difficult questions are: what to eat for lunch? Why do we have late night snacking habits? We have answers from Dr Azlina Amir Kassim, a senior lecturer from Bangor University, UK.

She presented a talk hosted by the Department of Psychology at School of Science and Technology, Sunway University on ‘Neuropsychology of the Mind’ on 14 January 2020.

The talk was coordinated by Ms Kimberly Liew, Business Development Executive from United Kingdom Education Centre (UKEC), who opened the session. Dr Wo Su Woan of the Department of Psychology then introduced Dr Azlina, to the audience comprised of academic staff and psychology students.

During her insightful talk, Dr Azlina expounded on the wonders of the human brain and exposed students to state-of-the-art equipment available at Bangor University that are used to study the brain. This equipment included the Transcranial Magnetic Stimulation (TMS), electroencephalography (EEG) and functional Magnetic Resonance Imaging (fMRI). Dr Azlina also shared neuropsychology research using these experimental techniques and their clinical implications.

TMS is a non-invasive and painless method that has potential to treat depression. By ‘zapping’ a part of the brain with a weak electric pulse, the stimulation may activate parts of the brain that have decreased activity during depression. TMS was also used to investigate factors leading to indecisiveness, e.g. thinking what to eat for lunch. Dr Azlina explained that research participants were asked to make choices based on what they prefer, or based on their sensory need, while researchers intensified or reduced the information flow between the prefrontal cortex located and the parietal cortex using TMS. When information flow between the two brain regions was disrupted, participants became more indecisive on preference-based decisions. There was, however no effect on sensory decisions. This finding has clinical implications – TMS method can help patients who suffer from a high degree of impulsiveness and indecisiveness that can be due to brain disorders.

Dr Azlina also shared a research finding on late night snacking using fMRI. Researcher used MRI to measure how people's brains respond to high- and low-calorie food images at day and evening times. The results showed that high-calorie food images can generate spikes in brain activity, however these brain responses are lower in at night. As such, people tend to overeat at night because getting satisfaction from food is more difficult during night time, and therefore people tend to eat more at supper to experience satisfaction that they usual feel earlier in the day.

When a student asked if TMS can be made more cost effective for therapy and research, Dr Azlina answered that it is possible when more research is conducted to prove its usefulness and when there are more TMS users (e.g. neuropsychologist). She hopes that more psychology graduates would pursue areas in neuropsychology for their postgraduate degrees.



Lecturers from the Department of Psychology pose with Dr Azlina and Ms Liew.

From left: Dr Lee Ai-Suan, Dr Wu Shin Ling, Dr Azlina, Dr Wo Su Woan, Dr Elizaveta Berezina and Ms Liew.

Psychology lecturer, Dr Lee Ai-Suan, was coincidentally PhD coursemates with Dr Azlina at the University of Nottingham Malaysia, remarked that “it was great to catch up and reflect on our PhD journeys, and see how we have grown as academics since graduating”. Dr Wu Shin Ling was impressed with the equipment in the Psychology laboratory in University Bangor. Dr Elizaveta Berezina mentioned that “Dr Azlina has presented recent research in neuroscience that demonstrated the complexity of processes in brain circuits that explain our executive cognitive functioning. Her talk was inspiring for students who aim to pursue a career in clinical or neuropsychology and provided some guidance on academic pathways to achieve their goals”.

Some of the Year 1 Psychology students who were there, commented that they had not thought about how knowledge in neuropsychology can be so practical and relevant to their daily activities. They added that they now look forward even more to their second and third year where they will be learning more about how psychology is applied. Postgraduate psychology student, Brenda Sim summarized “Through this talk we are able to unfold and gain knowledge on the alternative medical equipment that exist but were less known by many, and it would be great that years down the road it will be something that is accessible for the members of the public, which in a way making mental health equally important as physical health.”



Dr Azlina and the audience after her very insightful talk.

The talk ended with a photo session with audience, and Dr Wo Su Woan thanking Dr Azlina with a token of appreciation. It was truly an informative session and the Department of Psychology would like to thank UKEC for helping to coordinate this talk that gave us the opportunity to host Dr Azlina.

[Source: <https://news.sunway.edu.my/articles/university/department-psychology-hosted-dr-azlina-amir-kassim-bangor-university-uk-talk>]

Talk on "Public Opinion Mining: Analysing Comments and Reviews"

Assoc. Prof. Dr Teh Phoey Lee from Department of Computing and Information Systems shared her research on 13 February 2020 at Lancaster University, UK. Her talk which also via live stream is on sentiment analysis (which also known as opinion mining or emotion AI), where natural language processing, text analysis, computational linguistics are applied. A particular focus of Assoc. Prof. Dr Teh's research is the understanding of sentiment in different countries, where different languages and cultures have enormous implications for understanding sentiment.

Assoc. Prof. Dr Teh Phoey Lee was giving talk at Lancaster University, UK.



Talk on "Waste to Wealth based Porous Nanoparticles for Satisfying Energy-Water-Health Sector"

A research talks on Waste to Wealth based Porous Nanoparticles for Satisfying Energy-Water-Health Sector by Professor Gurumurthy Hegde, Professor at B.M.S College of Engineering, India and the Head of BSN Centre for Nano-materials & Displays was held on 24 February 2020. The talk was organized by Graphene & Advanced 2D Materials Research Group. The talk was about waste to wealth is the need for the day. Due to ever-growing human advancement, left unavoidable waste stuffs behind the atmosphere. Improper handling of these wastes created lot of environmental pollutions and several breathing related diseases. The efforts is to target such area of the society where one can able to work on waste materials specially biowastes materials and convert them in to useful products.

Grant Writing Workshop for University Staff

Professor Abhi Veerakumarasivam (Head, Department of Biological Sciences) and Assoc. Prof. Dr Yong Min Hui (Department of Psychology) jointly conducted a grant writing workshop on the 31 January 2020. Thirty participants from different research areas From Sunway University participated in this workshop. This workshop focused on the different aspects to focus on when applying for grants offered by the Malaysian Government with a special focus on FRGS, PRGS, TRGS and LRGS. A grant-writing clinic was also offered to give personalized advice to participants who were interested to obtain feedback.



Professor Abhi and Assoc. Prof. Dr Yong Min Hui with participants of the workshop.

[Source: Department of Biological Sciences e-Bulletin - January 2020 issue]

Biological Science Lecture Series - "Genetic modification of plants in response to climate change"

Department of Biological Sciences had the pleasure of having Dr Ulrike Bechtold from the University of Essex to speak to us about "Genetic modification of plants in response to climate change" as part of the Biological Science Lecture Series on 12 February 2020. Dr Bechtold is a plant molecular biologist with a special interest in understanding the effects of stress on plant resilience. Such research, as she highlighted is getting more important especially in this era of climate change. The abiotic factors against which she aims to find the ideal genes equipped with suitable responses include harsher draughts, floods and winters. Other than her research interests, Dr Ulrike also shared information regarding the different graduate programs with the School of Life Sciences in the University of Essex, such as MSc in Biotechnology, Health Genomics, Tropical Marine Biology, Cancer Biology and Molecular Medicine. This event was co-hosted by the Sunway Biological Society (SBioS) and the Department of Biological Sciences.



From left: Dr Chen Jit Ern, Dr Ulrike Bechtold and Professor Abhi

[Source: Department of Biological Sciences e-Bulletin – February 2020 issue]

Visit of Professor Kang Ming of Hebei University

Professor Kang Ming, a visiting professor from the College of Life Sciences at Hebei University, China visited Sunway University on the 3 January 2020. His visit was part of a research collaboration with Department of Biological Sciences, where two Masters students from Hebei University, Ms Lee Jing and Mr Shan Shiwei are currently conducting research under the supervision of DBS staff (Professor Jeff Tan, Dr Yow Yoon Yen and Dr Jane Gew) for a period of three months. During his visit, Professor Kang Ming gave a talk on his research that focuses on understanding the characteristics of the Chlorovirus genome (a double-stranded DNA virus that infects green algae).

Prof. Kang Ming gave a talk on his research

[Source: Department of Biological Sciences e-Bulletin - January 2020 issue]



BioScience Exploration Program

Department of Biological Sciences members and laboratory staff jointly conducted the BioScience Exploration program for the AUSMAT students on the 16 January 2020. This was a science outreach program to expose the pre-university students to the diverse areas of research carried out within the department. Students were rotated between three hands-on experiential stations; A) Pathogens: tiny but not trivial, B) Cockroaches: Friend or Foe? and C) HIV: Envelope complex. The department look forward to engage with the next generation of biological scientists!



Department of Biological Sciences staff with AUSMAT students.

[Source: Department of Biological Sciences e-Bulletin - January 2020 issue]

“BootCamp” in Wildlife Study Design and Data Analysis

The Department of Biological Science hosted the 45th Wildlife Study Design and Data Analysis Workshop conducted by BCSS (Biodiversity Conservation Society of Sarawak). This edition of the 2-week long workshop saw 35 participants, from Malaysia as well as neighbouring countries such as Bangladesh, Cambodia, Indonesia and India. Mike Meredith (from UK) and Dr Ngumbang (from Sarawak) were the lead facilitators of this course. This workshop is being held for the third time in Sunway University, and coordinated by Assoc. Prof. Dr Goplasamy Reuben Clements and Assoc Prof. Dr Shyamala Ratnayake.

Participants of the Wildlife study design and data analysis boot camp receiving their certificates of completion.

[Source: Department of Biological Sciences e-Bulletin - February 2020 issue]



Awards and Achievements

Publication in High impact Journal

Professor Saidur Rahman (Head, Research Centre for Nano-Materials and Energy Technology) in collaboration with researchers from Australia, Bangladesh, Saudi Arabia, Germany, Japan, China, South Korea published a paper entitled “One-dimensional Sn(IV) hydroxide nanofluid toward nonlinear optical switching” in Materials Horizons with an impact factor 14.356.

The team had developed a new synthetic route for the preparation of metal hydroxide-based nanofluids. Their nanofluid system has high stability and remarkable thermal conductivity. After investigating its nonlinear optical (NLO) properties, they found that the nonlinear phase can be reversibly switched from positive Z-scan (convex lens) to negative Z-scan (concave lens) as the laser power is tuned from 500 mW to 1000 mW. Here “liquid” nanofluidic optical switching materials demonstrate superior degree of flexibility for these applications, while functioning at relatively low-power (green laser).



Professor Saidur and team published paper in High Impact Journal.

Advance Higher Education Fellowships

Head of Academic Enhancement Division, Annyza Tumar, and Elaine Yong, Teaching Fellow at the Department of Psychology, were recently awarded fellowships by Advance HE, previously known as Higher Education Academy (HEA) in the United Kingdom.

Annyza and Elaine were respectively awarded the Senior Fellowship (SFHEA) and Fellowship (FHEA). The Fellowship from Advance HE is awarded to scholars of teaching and learning who have demonstrated competency in the ability to advance teaching and learning approaches in higher education that contributes to high quality student learning. Both Annyza and Elaine are the first two Sunway University recipients of this prestigious fellowship.

[Source: <https://news.sunway.edu.my/articles/university/annyza-tumar-and-elaine-yong-awarded-fellowships-advance-higher-education-uk>]



Elaine Yong and Annyza Tumar awarded with Advance HE Fellowships.

Article Published in The Chemical Engineer

An article written by the Head of Research Centre for Carbon Dioxide Capture and Utilization, Professor Mohamed Kheireddine Aroua [Associate Dean (Research)] and his collaborator from University of Malaya, Professor Ir. Dr Mohamed Azlan Hussain appeared in The Chemical Engineer magazine (Issue 942/943 - December 2019/ January 2020) published by IChemE. The article explains on how a natural disaster led to demonstration and further development of a mobile self-cleaning water filtration unit that impacted communities in remote areas in peninsular Malaysia and the State of Sarawak.

Winning Research Grants

Sunway University Internal Grant 2020

Principal Investigator	Project
Professor Abhimanyu Veerakumarasivam	ASEAN Landscape of Responsible Conduct of Research: Understanding the Underlying Factors that Influence Attitude and Practice
Professor Angela Ampawan	Mode Division Multiplexing in Free-Space Optics for Internet-of-Things in Smart Cities
Dr Ayaz Anwar	Design, Synthesis and Application of Hypoxia-responsive Nanomaterials to Target the Tumor Microenvironment
Dr Chew Jacty	Unveiling the Antibacterial Activity of Malaysian Green and Brown Seaweeds
Ms Elaine Yong	Well-being, Cyberbullying and Resilience among Adolescent Social Network System Users
Dr Farihahusnah Hussin	Low-cost Renewable Material Derived from Plastic Waste as a Potential Adsorbent for Carbon Dioxide Capture: An Alternative Way to Solve Severe Plastic Wastage Problem
Assoc. Prof. Dr Gopaldasamy Reuben Clements	Securing the Future of the 'King of Fruits': Elucidating the Pollination Ecology of Durian (<i>Durio zibethinus</i>) across Peninsular Malaysia
Professor Jeff Tan Kuan Onn	Combinatorial Cancer Therapy Mediated by Adenovirus, Tumor Suppressors and Chemo-drugs Targeting Cancer Stem Cells
Dr Lee Ai Suan	What's in a Face? Identifying Salient Information in Judgements of Health, Attractiveness and Recognition in Faces using Eye-tracking
Dr Lim Hui Xian	Development of Synthetic Peptide-based Vaccines against Dengue
Dr Lim Wei Ling, Audrey	Neuroprotective Potential of Polygonum Minus Extract against Glutamate-induced Toxicity and Neurodegeneration in Vitro

Dr Ling Mee Hong	Blockchain-based Decentralised Trust Model for Clustering Schemes in Distributed Cognitive Radio Networks
Dr Matthew Teow Yok Wooi	Connecting Visual Impairment Society with Artificial Intelligence of Things: An Image Captioning Approach
Prof Mohamed Kheireddine Aroua	Converting Microplastics to CO2 Capturing Agents
Dr Mohammad Tahir	Cooperative Game Theory based Learning Algorithms for Energy-efficient Operation in an Ultra-dense HetSNet in 5G network
Dr Mohd Ishtiaq Anasir	Development of Novel Structure-based Antiviral Peptides against Dengue Virus
Assoc. Prof. Dr Teh Phoey Lee Heard	Mining Public Opinion on Plastic Usage and Reduction from Tweets using Sentiment Analysis & Sequential Mining Approach
Dr Tommy Tong Yuh Koon	Characteristics of Envelope Genes Cloned from Hiv-1 Infected Plasmas with Potent Neutralizing Response.

Welcome New SST Members



Assoc. Prof. Ir Abdul Aziz Omar
Associate Professor
Department of Computing and
Information Systems



Dr Lingenthiran Samylingam
Research Fellow
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