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UNIVERSITI MALAYSIA SABAH



Transformation towards
**UNIVERSITY
INDUSTRY 4.0**



FACULTY OF ENGINEERING NEWSLETTER

JULY TO SEPTEMBER
2020 ISSUE
Q3 EDITION

Content Features 5 Key Categories



Administration



HEPA



Presentation/Talk/
Conference



General



Research, Development & Innovation

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Message From The Dean

Assalamualaikum and Salam Harmony FKJ, Faculty of Engineering, UMS and to all respected readers. It is my pleasure to welcome you to our third quarter (July – Sept) year 2020 FKJ Newsletter.

Congratulations to the new students for being part of the Faculty of Engineering (FKJ), Universiti Malaysia Sabah (UMS). This month begin with the start of the new semester for all FKJ students. Due to COVID-19 pandemic, the teaching and learning activities are opted to be conducted virtually at a moment. We understand that this is not easy and can be very challenging for students especially those who did not have stable internet connections at their place. However, I hope that we all be diligent to seek knowledge and if you have problems with your teaching and learning activities, do let us know and we will try our best to help. I am very pleased to officially launch this third edition newsletter and I hope that you will find this newsletter informative.



The third issue of our newsletter starts with an article on the faculty human resource management updates, followed by the diploma student university registration in new norms, the faculty implement the first online examination and many more. There are five key categories featured in this issue which is administration, HEPA, Presentation/Talk/Conference, Research, Development & Innovation, and General. Some of the highlights found in the Presentation/Talk/Conference category is the articles on Material and Energy Colloquium 2020 (MEC2020) and The 2nd IEEE International Conference on Artificial Intelligence in Engineering and Technology (IICAIET2020). More articles can be found and divided into different categories to be read. We hope that you will find great value in its content and through our upcoming issues, we will continue to provide updates on the many activities in which the faculty are involved. I like to take this opportunity to sincerely thank all members for the contribution given in making the newsletter successful despite many challenges faces. To the readers, we always welcome your feedback and suggestion to help us improve.

In the meantime, stay safe and healthy!

Together we are stronger.

With warmest regards,

Associate Professor Ts Dr. Ismail Saad
Dean of FKJ, Faculty of Engineering, UMS

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FKJ Human Resource Management Updates

Reported by En. Azmi Bin Jumat, Saverin @ Sayerine Binti Vun Sang.

A. New Staff Reporting Duty

Congratulations and welcome to the newly reported staff as follows:

Name	Position	Program	Date
Dr. Lim Kit Guan	Senior Lecturer DS51	HK88	07/09/2020
Dr. Tan Min Keng	Senior Lecturer DS51	HK02	07/09/2020
Dr. Norsuhadat Nordin	Senior Lecturer DS51	HK88	21/09/2020
Ts. Dr. Norzilawati Mohamad	Senior Lecturer DS51	HK88	01/10/2020

B. Service Ended

Many thanks to the Faculty of Engineering members who have completed the service as follows:

Name	Position	Program	Date
Dr. Harimi Djamila	Senior Felo	HK01	31/08/2020
Dr. Khong Wei Leong	Senior Lecturer DS51	HK02	02/09/2020

C. Promotion to Senior Lecturer DS52

Name	Date
Dr. Choong Wai Heng	02/09/2020
Ir. Dr. Chua Bih Lii	02/09/2020
Dr. Farm Yan Yan	02/09/2020
Dr. Yoong Hou Pin	02/09/2020

D. Appointment of Permanent Job Position

Name	Date
Ir. Dr. Habib Musa bin Mohamad	02/09/2020

E. FKJ New Appointment

Name	Position	Duration
Tuan Haji Bacho Piong, Chief Executive Officer, PETRONAS Carigali Sdn. Bhd	FKJ Adjunct/Industry Professor	1 Year from Report Duty Date
Prof. Ir. Ts. Dr. Mohd Rizal Arshad, Deputy Vice Chancellor (Academic & International), UniMAP	External Examiner	2 Years from Report Duty Date
YBhg. Datuk Ir. Ts. Dr. Siti Hamisah Bt Tapsir, Secretary General, Ministry of Science Technology & Innovation (MOSTI)	Visiting Professor	1 Year from Report Duty Date



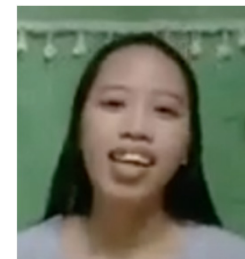
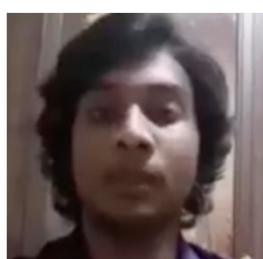
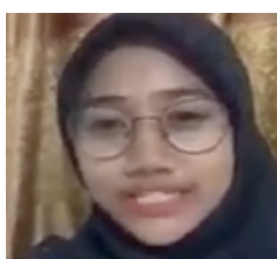
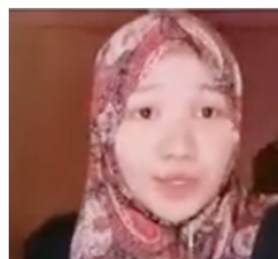
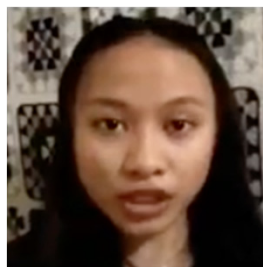
Diploma Student University Registration In New Norms

Reported by Pn. Nurhani Sugianto.

10 ogos 2020 - Faculty of Engineering (FKJ), has received a total of 28 new students of the Diploma in Process Engineering (Oil and Gas Operations) program in the academic session 2020/2021. This is the third cohort intake of this program which shows a slight increase compared to the previous year. New student registration for this session is slightly different where the university registration activities, course registration as well as teaching and learning (T&L) are held online without the need for students to attend campus. It is one of the new norms to curb the spread of the COVID-19 epidemic. In a welcome speech in conjunction with a briefing for new students held online, Associate Professor Ts. Dr. Ismail Saad, Dean of the Faculty of Engineering urged all students to use the opportunity being in the University to study hard. He also reminded all students to be wise in time management, attend all lectures and assessments, often ask questions if they do not understand what is being presented, and contact their respective academic advisors if there are problems about their studies.



Apart from the Dean speech, an introduction to the Diploma in Process Engineering (Oil and Gas Operations) program also was presented by Dr. Chiam Chel Ken as Program Coordinator. Also present in the event was Puan Nurhani Sugianto, Senior Assistant Registrar, FKJ Academic Affairs Section. Finally, the event ended with a photo session.





FKJ Implement The First Online Examination

Reported by Pn. Nurhani Sugianto.

The Faculty of Engineering conducting online examinations for the first time in the history of the Faculty and Universities. The final online examination was held following the outbreak of the Covid-19 epidemic which prevented students from attending face-to-face to participate in any teaching and learning activities (T&L) including examinations. In the implementation of this examination, the Faculty of Engineering is very careful in



making any decision and takes into account various aspects including guidelines issued by the Engineering Accreditation Council (EAC). The Faculty has also set up a Special Committee to draft special Examination Implementation Guidelines for the Faculty of Engineering as an additional reference document in addition to the guidelines issued by the University. This document is important and acts as a reference for the EAC panel of assessors during the accreditation visit.

The examination using the Smartv3 platform was held for two weeks from July 27 to August 12, 2020 involving a total of 36 courses and about 600 students. It makes the Faculty of Engineering the largest faculty to conduct examinations online compared to the other two faculties. The faculty has also provided an operating room as an examination center to all lecturers involved during the examination period. Technical support was also provided.

YBhg. Professor Dr. Rasid Mail, Deputy Vice Chancellor (Academic and International) during his visit to the examination center on the first day of the examination was very satisfied with the preparation and smoothness of the examination.

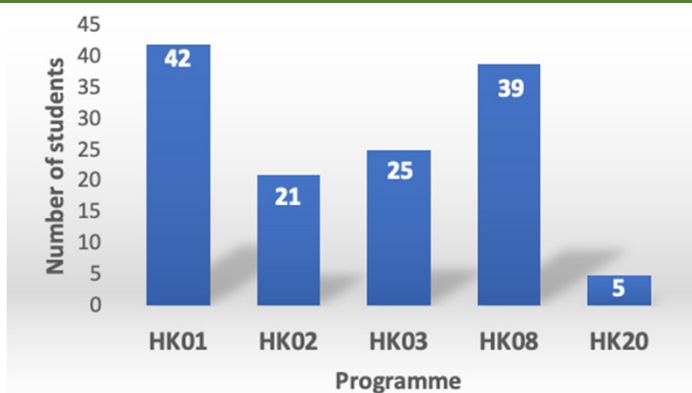




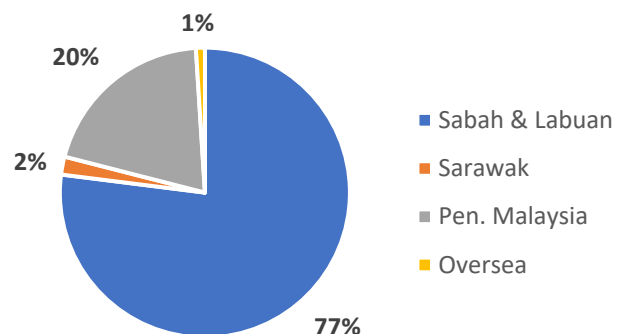
Industrial Training 2019/2020 : Practical In A New Norm

Reported by Industrial Training Committee of FKJ.

The annual 10-week industrial training was held starting on 03 August until 09 October 2020. Amid on-going Covid-19 pandemic, many challenges occurred that hinders 42% of the third-year undergraduates from getting their industrial training placements. In this 2019/2020 session, 132 students were undergoing their industrial training in the new normal environment. All industrial trainings were located within Malaysia, except for one international student (Brunei). A few of them were working from home, in line with the practice of their attached companies. Nevertheless, students were exposed to operations and hands-on at the site with strict SOP during the recovery movement control order (RMCO). With good work shown, a student from Chemical Engineering was offered a job to continue working in their laboratory.



Number of students undergoing industrial training according to different engineering programmes



Composition of industrial training locations



Student checking actual measurement against drawing during pre-concreting of segmental box girder (Picture Courtesy of Dayang Nur Hidayati, HK01)



Maintenance work at Dewan KPSU Mukah (Picture Courtesy of Gabriel Mcvalencia, HK02)



Site visit to process and non-process area of Sabah Oil and Gas Terminal (Picture Courtesy of Gan Siew Cu, HK03)



A three-story vertical pump at SOGT (Picture Courtesy of Stanley Ka, HK08)



During loading ULG95 from bunker to Tanjung Manis Oil Terminal (Picture courtesy of Mohd Milzam, HK08)



Wearing bunny-suits, booties and glove in a FAB area (Picture Courtesy of Jayasree A/P Thangaveeranan, HK20)



Survey: Students Level of Internet Accessibility During Movement Control Order

Reported by Academic Advisor Committee FKJ.

A survey was conducted from 30 April – 17 June 2020, in order to investigate the level of accessibility, students of Faculty of Engineering (FKJ), Universiti Malaysia Sabah (UMS). The objective of this survey is to check students' level of preparedness in non-Face to Face teaching and learning session during Movement Control Order. A total of 1086 students from Civil (HK01), Electrical and Electronic Engineering (HK02), Chemical (HK03), Mechanical (HK08), Electronic (Computer) (HK20), Oil and Gas (HK88) Engineering Programme, and Diploma in Process Engineering (Oil and Gas Operations – H2451) responded to the survey.

Fig. 1 shows the result of tools availability in order to access internet. Those answered with no tools have been contacted, and their problems are solved.

Fig. 2 shows that the students are majorly using computer as their device for online learning session. Furthermore, the students are mainly utilizing Whatsapp, Schoology, Smart2UMS, SMARTv3, Google Meet, Zoom, and Youtube as their platform for online learning session.

Have tools to access internet for online learning process
(laptop, smart phone, etc.)

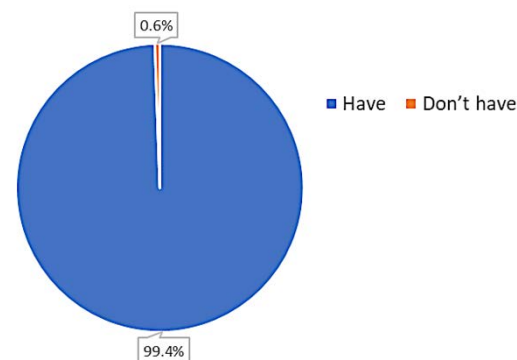
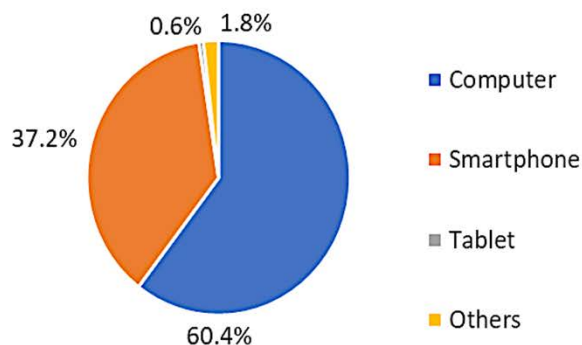


Fig. 1

Device used for online learning session



Platform used for online learning - Multiple answers

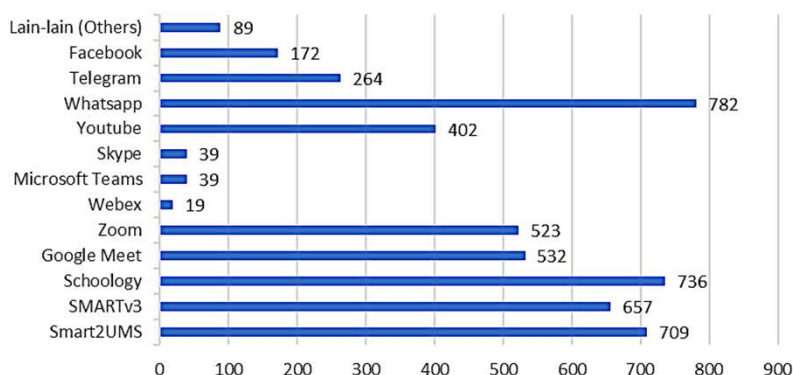


Fig. 2



Fig. 3 shows the accessibility level of FKJ students. Overall, their accessibility level is satisfactory, with most of them are having Level 3 accessibility. Most of them are using prepaid data for their internet access.

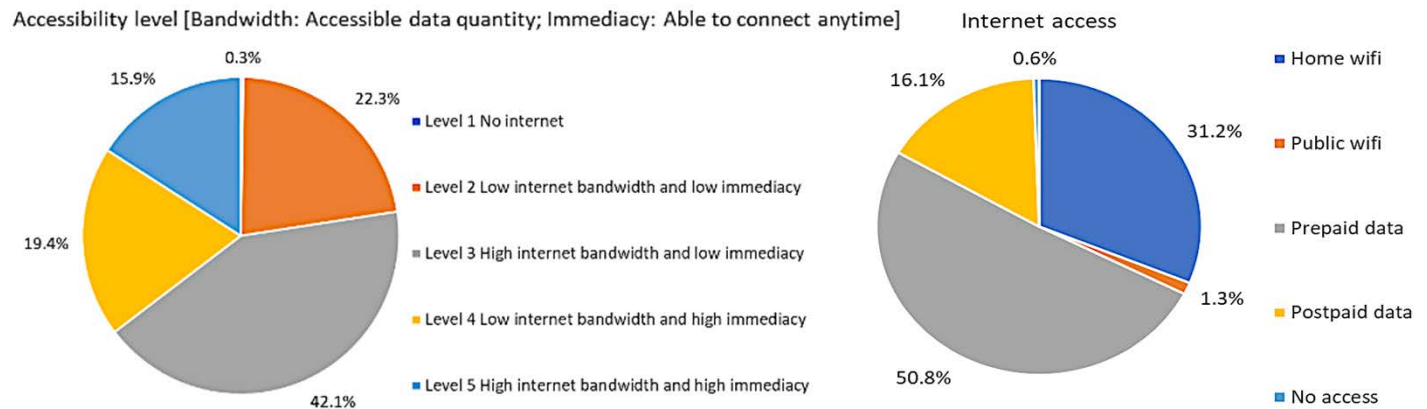


Fig. 3

Fig. 4 shows that over 60% responded that they are not having financial problem in order to obtain internet/data access. Moreover, the students are accessing the contents for online learning mostly from rural and sub-city area.

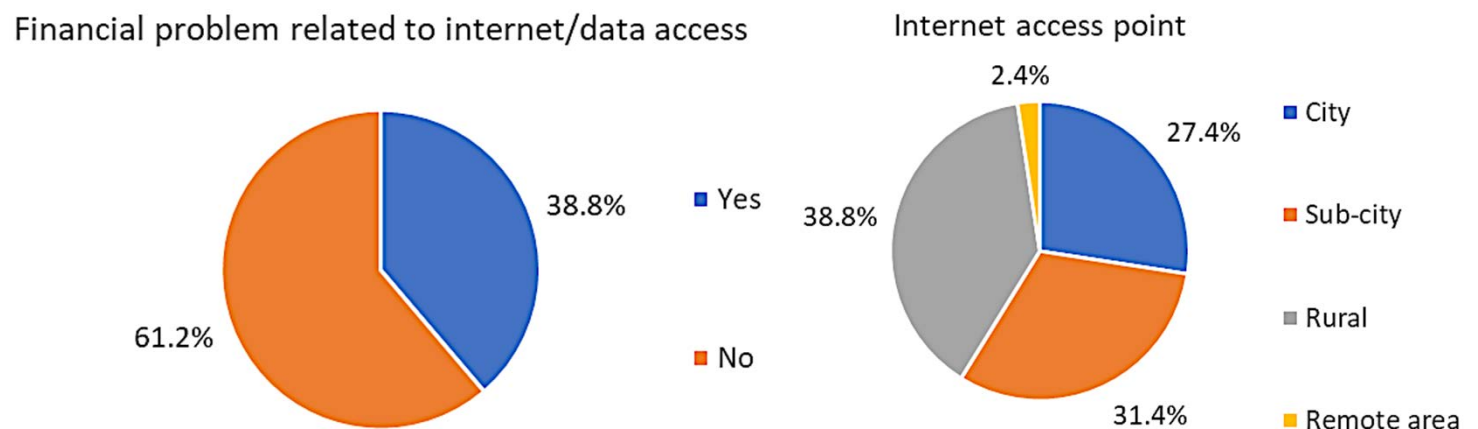


Fig. 4

As a summary, most of FKJ students are able to get satisfactory level of accessibility, in order to go through non-Face to Face teaching and learning session. Some of the constraints that the students are facing, shall be improved with the concern and attention from the respective lecturers.



UMS Civil Engineering Student Enliven The Traditional Ethnic Clothes Virtually

Reported by Sr. Dr. Asmawan Mohd Sarman.

A total of 60 students from Universiti Malaysia Sabah (UMS) taking Bachelor's Degree in Civil Engineering has conducted a study regarding the construction of various traditional ethnic houses as one of their second year's individual assessment project for the course subject of Engineering Survey. Apart from allowing the student to focus on the structural elements of the traditional houses' construction, this project also emphasized the student to recognize and learn the history or the background of each chosen ethnic. Some of the traditional ethnic houses that has been chosen as their case study were Bagan House, Iban Longhouse and Rungus, Brunei and Kedayan Traditional House, Bugis Traditional House, Bajau, Bisaya, Lundayeh, Murut, Iranun and Dusun. Moreover, Chinese Traditional House, Limas and Rumah Adat Toraja also listed as the chosen house.



Sr. Dr. Asmawan Mohd. Sarman believes this way of teaching and learning is very efficient to foster the morale of unity among the students in respecting the variety of ethnicity along with the cultural value in Malaysia, while appreciating the tradition elements that highlight the uniqueness of each ethnic. Besides from studying the tradition, the project's presentation was enlivened as the students were wearing their traditional ethnic clothes while presenting their project via Google Meet in which it complies with the study's theme and also in conjunction with the month of Malaysia Independence Day.

Farzana Waily, one of the Civil Engineering students shared that this project with the theme of traditional cultural heritage indirectly has been given exposure to the student about the richness of our country's cultural heritage and she was also impressed by the uniqueness of various valuable traditional ethnic. "Scope of the research includes 10M elements: 1) Main Area Functions and History, 2) Materials, 3) Manpower, 4) Machineries and Tools, 5) Methods of Construction, 6) Maintenance, 7) Money and Budget, 8) Management, 9) Measurement and lastly 10) Modelling. The 10M elements are very vital since each of them help to ease us, as the student, to complete our task more systematically and it was assigned by our lecturer Sr Dr. Asmawan." said Azmira Rosli another student of Civil Engineering.

Such project research can keep our cultural heritage and can be an example in planning any activities or academic assessments either it is a face to face learning or online learning. Wearing traditional clothes symbolizes our plural society in this country and therefore it is a must for us to keep it so that our various traditional ethnic will continues to thrive and bloom throughout the ages.

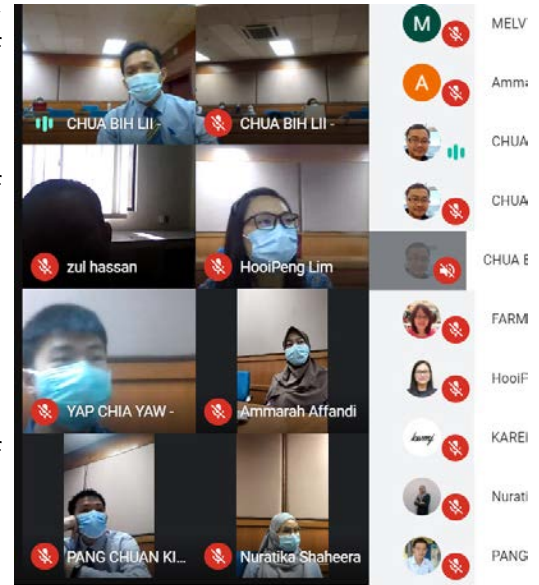


Material and Energy Colloquium 2020 (MEC2020)

Reported by Dr. Melvin Gan Jet Hong.

Material and Energy Colloquium 2020 (MEC2020) was successfully conducted on 03 September 2020, virtually and a small group of face to face session. The colloquium was organized by Mechanical Engineering Program, Faculty of Engineering (FKJ), Universiti Malaysia Sabah (UMS) with the support from Research and Innovation Management Centre, UMS and the Management of FKJ, UMS.

The goal of this colloquium is to highlight the diversity of research studies in material and energy related fields, under the theme "Material and Energy Engineering for Sustainable Advancement". A total of 17 papers were presented, with participant from the lecturers and postgraduate students of Mechanical Engineering Program (FKJ), Civil Engineering Program (FKJ), and Faculty of Science and Natural Resources, UMS. The participants from the related fields were able to communicate and discuss, to exchange ideas, and share the interest in the latest research trends.





The 2nd IEEE International Conference on Artificial Intelligence in Engineering and Technology (IICAET2020)

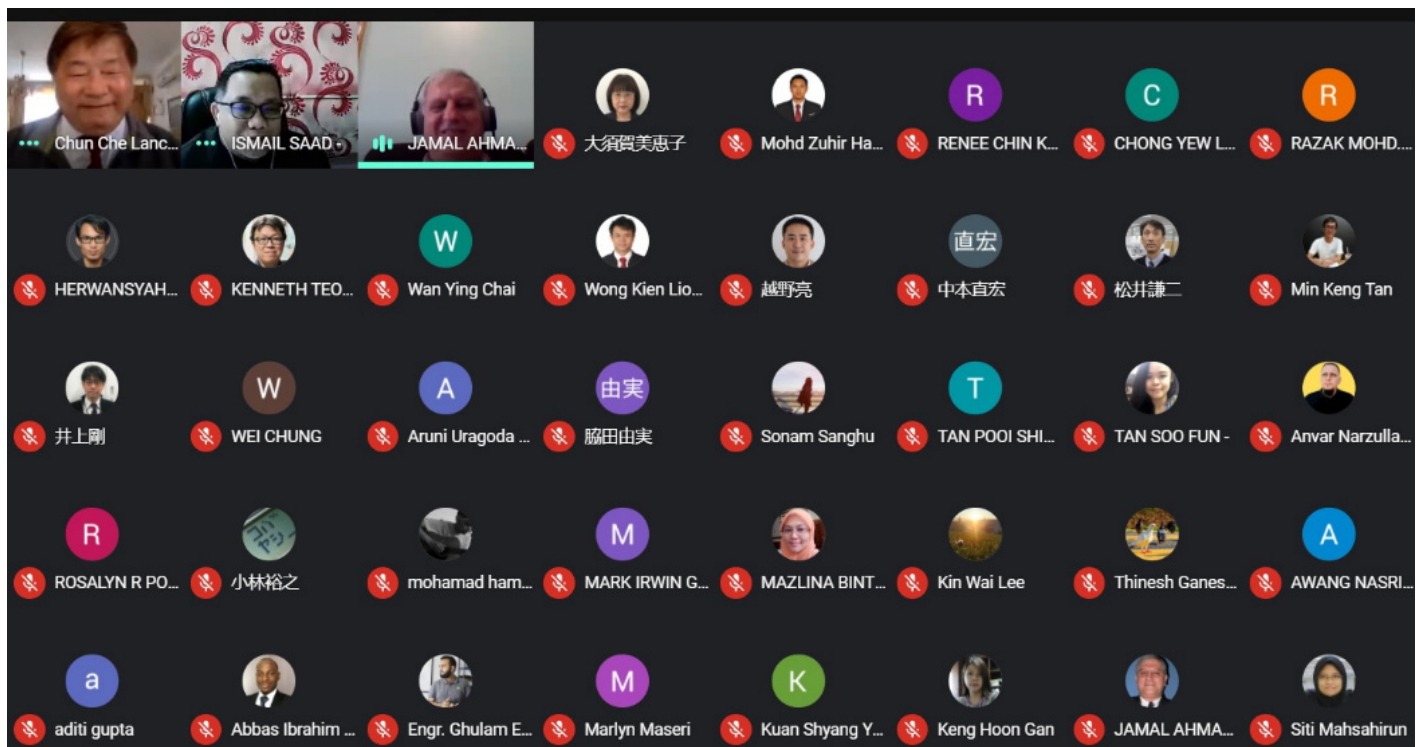
Reported by Dr. Yew Hoe Tung.

The 2nd IEEE International Conference on Artificial Intelligence in Engineering and Technology (IICAET2020) was the first virtual flagship conference of IEEE Sabah Subsection held on 26 & 27 September 2020. It was co-organized by Artificial Intelligence Research Unit, Faculty of Engineering, Universiti Malaysia Sabah and Faculty of Robotics and Design, Osaka Institute of Technology Japan. This year the theme of the conference is “*AI for the benefit of humanity*”. This conference provides an excellent platform for world class scientists, engineers, academicians, young researchers, and students to exchange their knowledge on the recent achievements in the areas of Artificial Intelligence.


IEEE

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大阪工業大学
 OSAKA INSTITUTE OF TECHNOLOGY


The conference received 88 valid submissions, and 54 papers were accepted and presented at the conference. We have participants from Malaysia, Japan, Bangladesh, Saudi Arabia, the Philippines, Australia and the USA. Next year, the 3rd IEEE International Conference on Artificial Intelligence in Engineering and Technology 2021 (IICAET2021) will be held at Kota Kinabalu, Malaysia from 13 to 15 September 2021. All the accepted and presented papers will be submitted for publication in IEEE Xplore (Scopus Indexed).



IICAET2020 Guest of Honour

Professor Datuk ChM. Dr. Taufiq Yap Yun Hin, Vice Chancellor, Universiti Malaysia Sabah

IICAET2020 Keynote Speakers

- Emeritus Professor Dr. Lance Chun Che Fung, Murdoch University Australia
- Professor Dr. Hiroyuki Kobayashi, Osaka Institute of Technology Japan
- Associate Professor Dr. Makoto Koshino, National Institute of Technology Ishikawa College Japan
- Associate Professor Ts. Dr. Ismail Saad, Universiti Malaysia Sabah.

IICAET2020 Organizing Committee

Chairs:

- Associate Professor Ts. Dr. Ismail Saad
- Professor Dr. Mieko Ohsuga

Vice Chairs:

- Associate Professor Dr. Jamal Ahmad Dargham
- Professor Dr. Yumi Wakita

Secretary: Dr. Yew Hoe Tung

Finance Chair: Dr. Chin Kim On

Technical Chairs:

- Dr Renee Chin Ka Yin
- Professor Dr. Hiroyuki Kobayashi

Publication Chairs:

- Dr. Razak Mohd Ali Lee
- Dr. Rosalyn R. Porle

Local Arrangement Chair: Associate Professor Dr. Jamal Ahmad Dargham

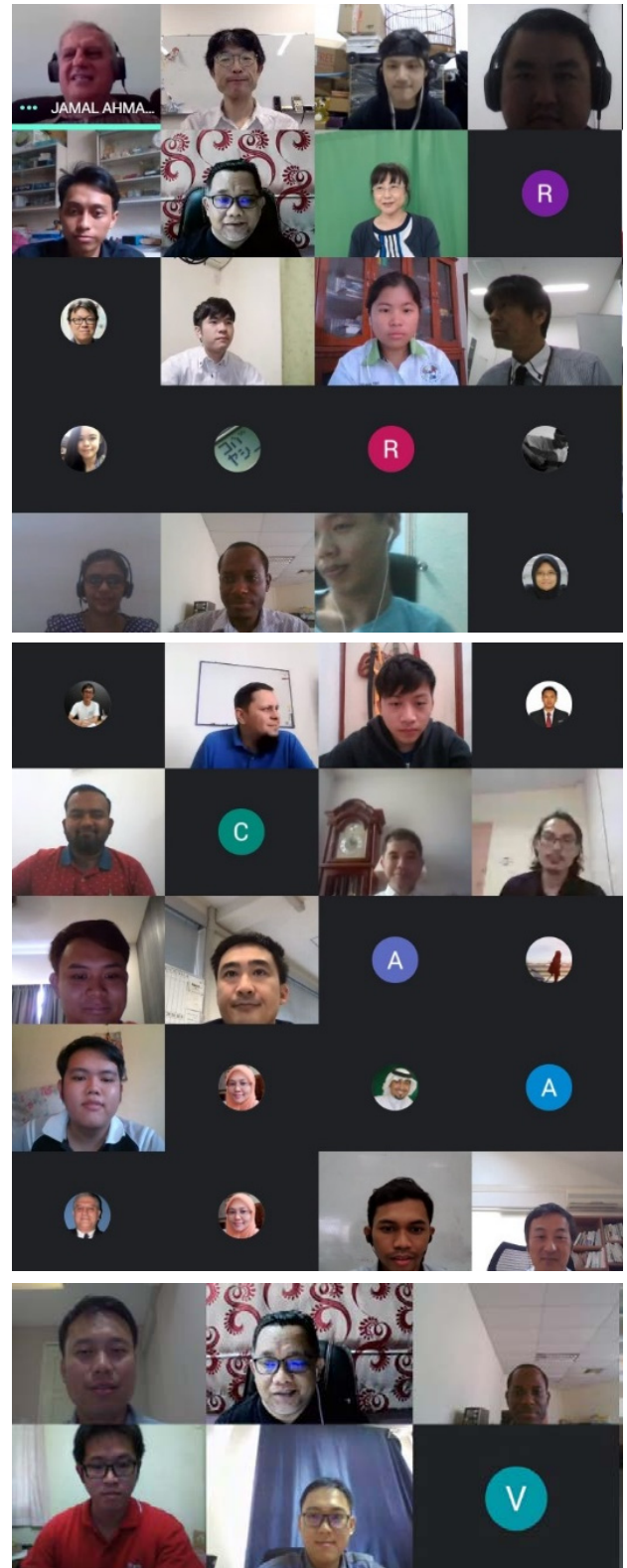
Publicity and Social Program Chair:

- Dr. Leau Yu Beng
- Associate Professor Dr. Tsuyoshi Inoue

Web & IT Manager :

- Dr. Tan Soo Fun
- Professor Dr. Akira Inoue

Registration Chair: Dr. Herwansyah Lago



Introduction to Machine Vision with Python

Reported by Joyce Lu Kuan Yee (Executive Publicity, IEEE Student Branch UMS).



On 29 April 2020, the first *IEEE Sabah Technical Training with Python* was organised successfully during 2020 Malaysia movement control order. The training was conducted by Mr. Tang Nyiak Tien, a UMS HK02 alumnus (First Class Honour), who is also a partner of IOT Control Solution Sdn. Bhd, through Zoom online meeting software.

Participants	No. of attendee
Speaker	1
Admin	6
UG Students	26
PG Students	5
Total	38

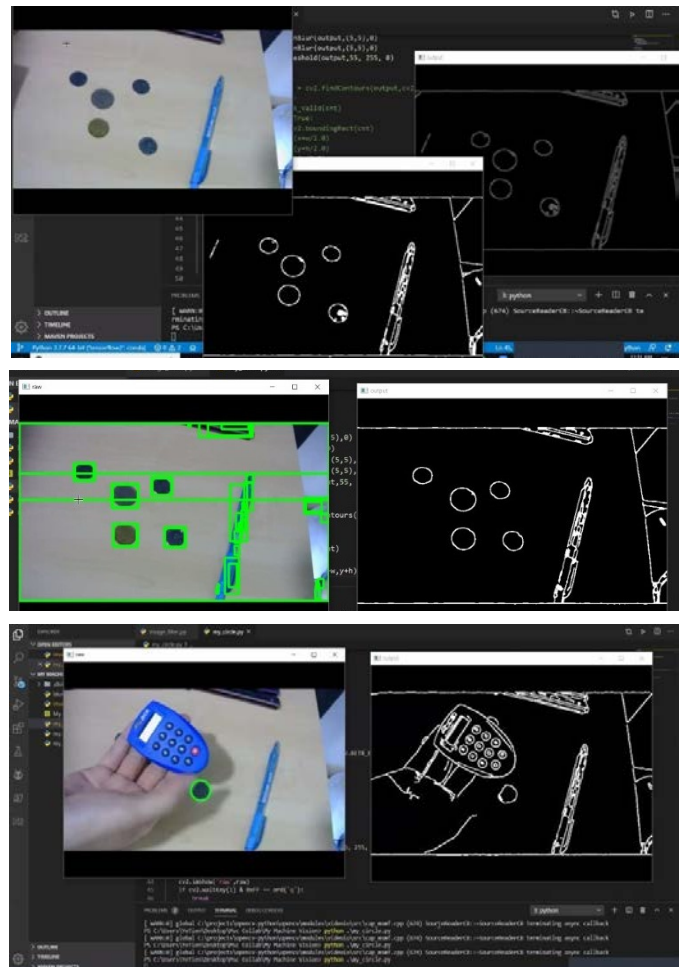
The event was attended by 6 admins from Universiti Malaysia Sabah (lecturers) and IEEE Sabah ExCom (education), 26 undergraduate registered members of IEEE along with 5 post-graduates. The session had garnered attention from the IEEE student branch of UMS, and 4th year HK02 programme, who is in their Final Year Project, finding the knowledge beneficial and insightful.

The speaker had shared vital information and tips in Python-based image processing, especially in the techniques of filtering, masking, blurring, thresholding, background subtraction and locating contours. Through examples (images on the right), Mr. Tang demonstrated the Python algorithm and functional coding while explaining the syntax and errors.

During the training, practical errors were explored and debugged together.

The students were encouraged to actively share their answers and opinions, which some were brought into further discussions and knowledge deepening.

This event has sparked a new interest in online programmes due to the effective multi-cultural and multi-destination interactions among lecturers, alumni, and participants.



The speaker explained on errors that can be expected during the process of imaging with Python. Mr. Tang elaborated on the process to rectify the errors and changing the area of imaging to correct the errors occurred due to the angle of imaging. The screenshot above demonstrated one of the possible errors where the hand is incorrectly rendered, showing incomplete image during the process.

2020 IEEE-UMS Electrical & Electronic Engineering Project Exhibition

Reported by Nico Maxmillan Majakin, Joyce Lu Kuan Yee (Executive Publicity, IEEE Student Branch UMS).



The first online project exhibition: Sharing of ideas among professionals and industrial linkage.

IEEE Student Branch (UMS) has organized the first-ever online **2020 IEEE-UMS Electrical & Electronic Engineering Project Exhibition** on 13 August 2020 via Zoom and Google Meet platforms. This annual exhibition for HK02 EEE program has used to be held in the Faculty of Engineering, Universiti Malaysia Sabah. This year, the exhibition went online and provides a platform for idea sharing and valuable interactions among current students, lecturers, IEEE members, UMS alumni and industrial panels.

Total 16 invited judges and guests from industrial and overseas attended this event.

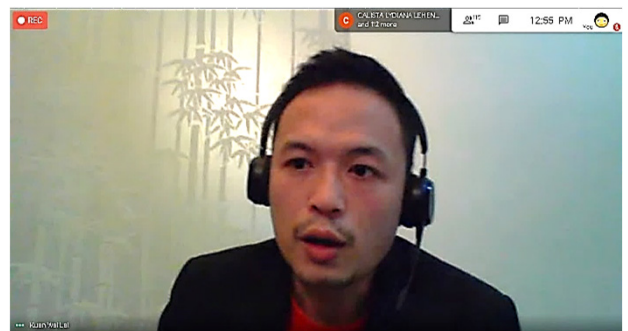
The exhibition began with parallel sections of (A) *Integrated Design Project Competition*, and (B) *Final Year Project Poster Presentation*, followed by (C) *Industrial Talk* on “*Opportunities and Challenges of Electrical & Electronic Engineering in Industry (IR4.0)*”.

Project Exhibition (08:30 a.m. – 12:30 p.m.) (A) <i>Integrated Design Project Competition</i> (B) <i>Final Year Project Poster Presentation</i>	
Total Attendees	176
Industrial Talk (13:00 p.m. – 14:00 p.m.) (C) <i>Talk: Opportunities and Challenges of EEE in Industry 4.0</i>	
Total Attendees	126

With the wide diversity in the background of the attending judges, the participants were fortunate to be exposed to a variety of constructive criticisms and multiple instances of introduction to some of the standards of requirement from both locally and overseas.

The participants and viewers also gained substantial valuable knowledge and information regarding the latest technological advancements within the industry, shared by the attending guests.

The event was closed with the announcement of 3 best presenters for section (A) and 4 winning projects for section (B).



The talk was presented by EEE alumni, Mr. Lai Kuan Wai, General Manager of Ascertain Tech Automation & Solutions Sdn. Bhd. on Google Meet.

Invited speaker Mr. Lai shared about the challenges that fellow EEE students will face as they go through the transition into the working environment. He also shared about his early life after graduating UMS, other than advices and tips regarding the industry. The topic had received abundant interests and questions from the audience for Mr. Lai to further share his experience and expertise in the Q&A session.



The winning projects.

2020 IEEE-UMS Electrical & Electronic Engineering Project Challenges

Reported by Baslizatun Asania binti Alli, Joyce Lu Kuan Yee, Lisa Azieyan Binti Zulkefflee (Executive Publicity, IEEE Student Branch UMS).



IEEE Student Branch (UMS) has organized the first online **2020 IEEE-UMS Electrical & Electronic Engineering Project Challenges** on 13 August 2020 from 9:00 a.m. – 12:30 p.m. through Zoom platform for parallel sections (A) *Integrated Design Project Competition*, and (B) *Final Year Project Poster Presentation*.

Section (A) showcased 10 innovation projects featuring Green Technology and Assistive Technology to solve real-life problems, which were evaluated in 2 breakout rooms, judging by lecturers and industrial panels.

(A) Integrated Design Project Competition (10 Projects)	
Participants	No. of attendees
EEE students	46
Industrial judges	7
EEE judges	2
IEEE committees	18
Visitors	20
Total	93



The design projects introduced automatic pet feeder, medication reminder, self-sorting recycle bin and other highlights. 4 projects have been awarded for their excellent performance in Section (A).

Project Category	Award	Project Title
Assistive Technology	1st Place	Medical Monitoring Automatic Medicine Dispenser (Group 2)
Assistive Technology	2nd Place	Gesture Controlled Traffic Light System (Group 10)
Assistive Technology	3rd Place	Camera based Angle and Distance Finder (Group 4)
Green Technology	3rd Place	Plant Monitoring System (Group 8)

Section (B) evaluated and showcased 44 projects, which had been grouped into 5 breakout rooms with judges according to categories, featuring power system, control and signal, communication system, microelectronics, electronics and instrumentation.

(B) Final Year Project Poster Presentation (44 Projects)	
Participants	No. of attendees
EEE students	44
Industrial judges	5
Alumni (IEEE) judges	5
EEE judges	10
IEEE committees	11
Visitors	20
Total	95

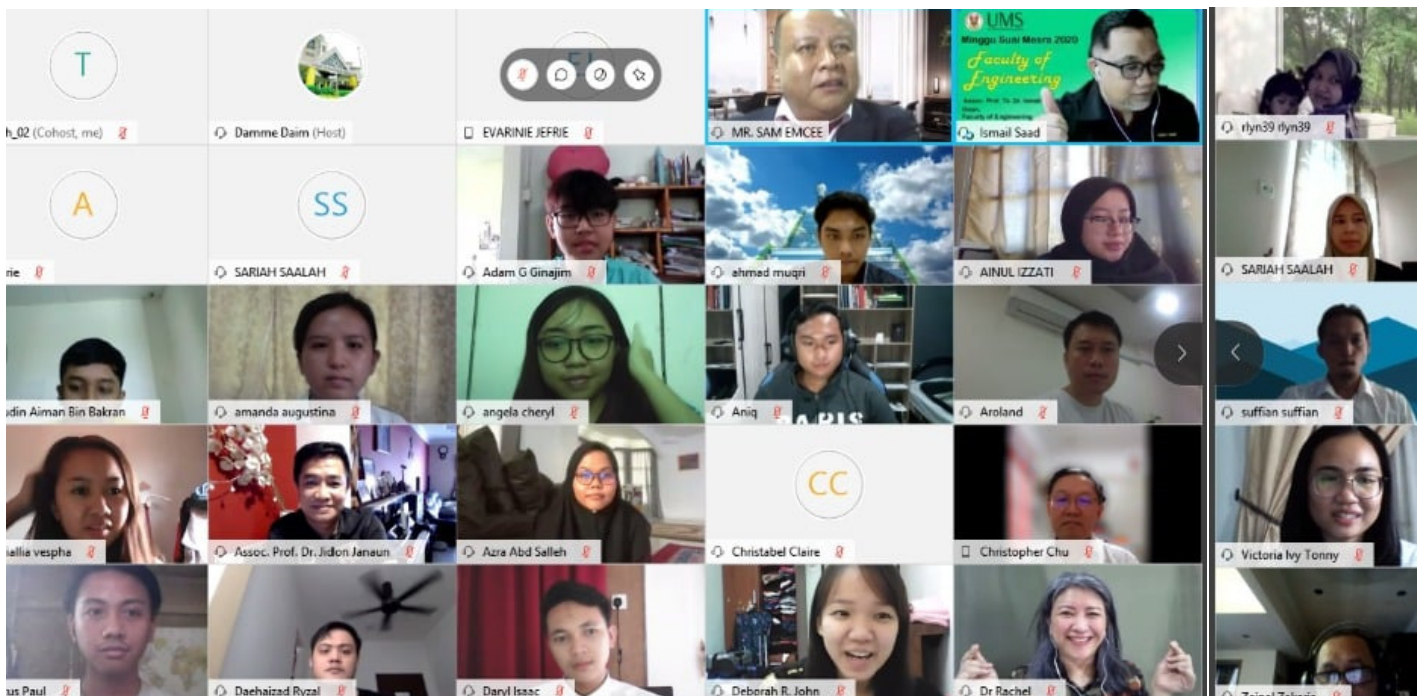
Prior to the event, all judges were provided with project video to optimise the time taken for the presentation so that more time can be spent for Q&A session. 3 best presentations had been awarded in Section (B).

Project Category	Best Presenter
Communication System	Teh Ke Wen <i>Enhanced Multi-hop Mechanism in Vehicular Communication System using Swarm Algorithm</i>
Electronics and Instrumentation System	Habib Firdaus Habib Mohamad <i>Design of Microwave Sensor for Chlorine Content Detection in Tap Water</i>
Power System	Loo Chun Chong <i>Improved Energy Extraction in Tidal Current Technology using Evolutionary Algorithm</i>

"Minggu Suai Mesra" FKJ Session 2020/2021

Reported by Dr. Mohd Kamel Wan Ibrahim.

"Minggu Suai Mesra" or orientation day Faculty of Engineering (FKJ) for session 2020/2021 was successfully launched and officiated by the Dean of FKJ, Associate Professor Ts. Dr. Ismail Saad on 8th October 2020. The Dean welcomes the arrival of all students virtually and hoped that all students are eager to start their studies. After the welcoming speech from the Dean, it followed by a speech from Prof. Ir. Ts. Dr. Zainal Zakaria, Deputy Dean (Academic & International) FKJ, Tuan Bacho B Pilog, Chief Executive Officer, PETRONAS Carigali Sdn. Bhd. also appointed as Adjunct Professor / Industry FKJ, Dr. Mohd Kamel Wan Ibrahim Deputy Dean (Students & Alumni) FKJ, and Khairul Anwar Bin Saman, FKJ Alumni of 2009. There is a total of 306 new FKJ students for this session.



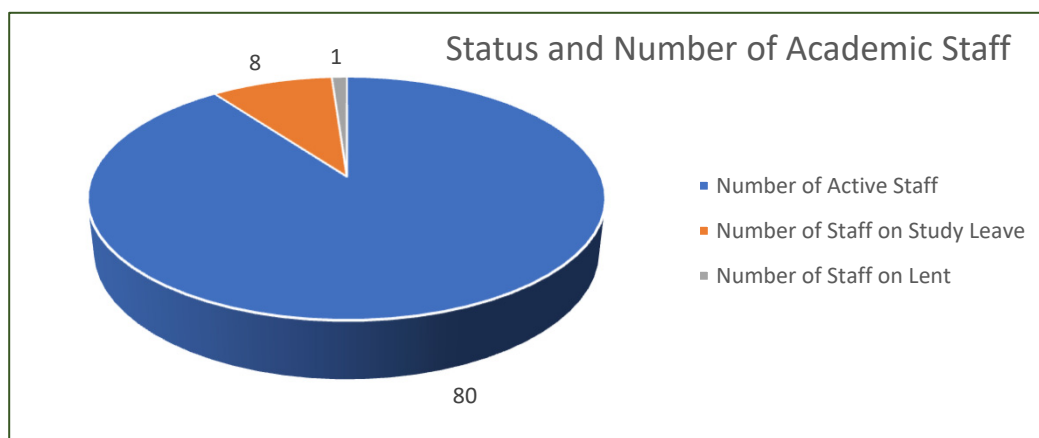
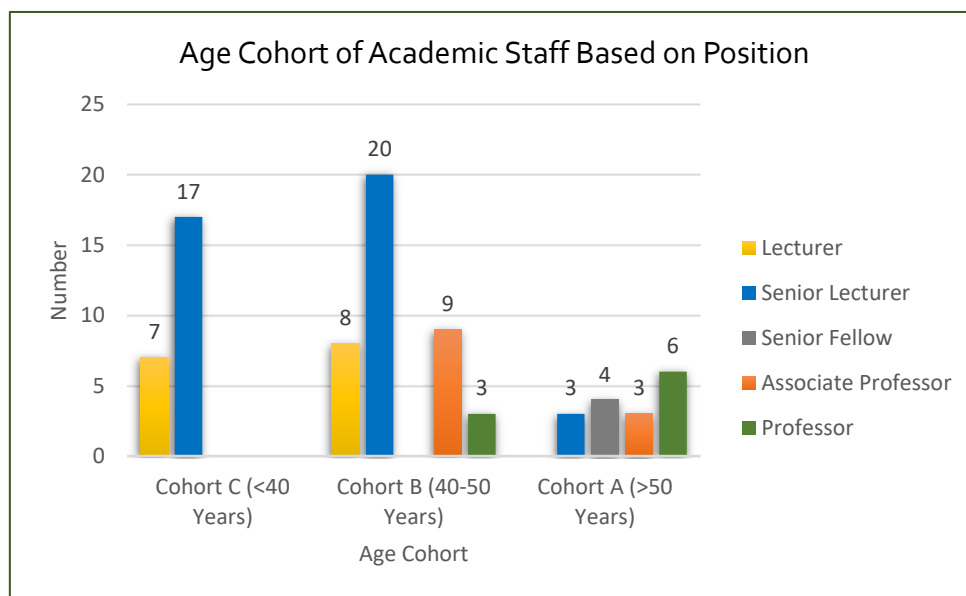


FKJ Research & Innovation Report Updates

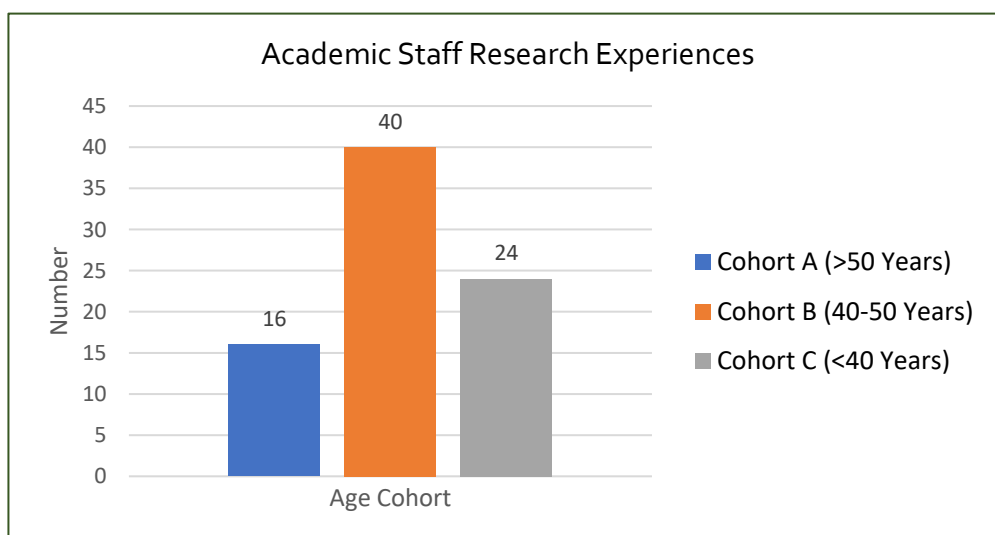
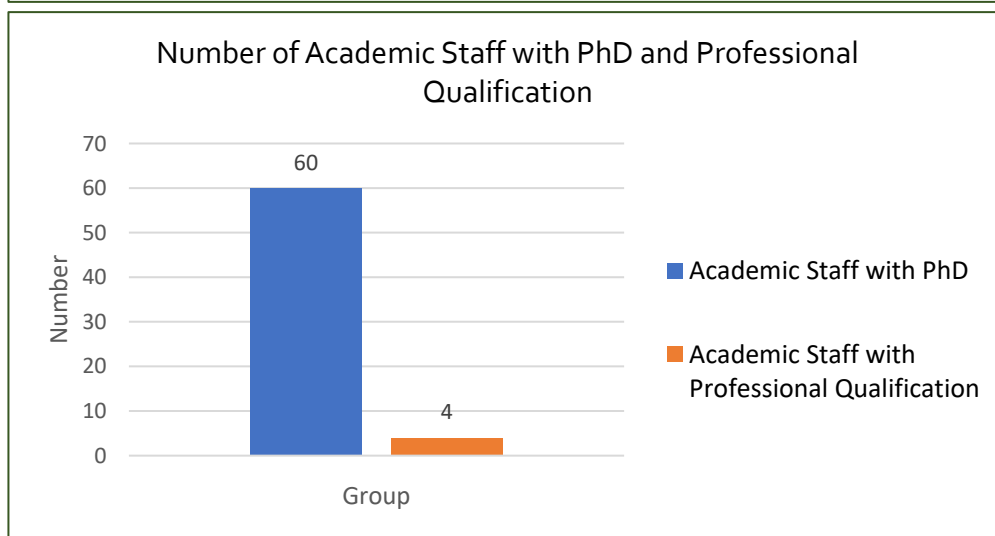
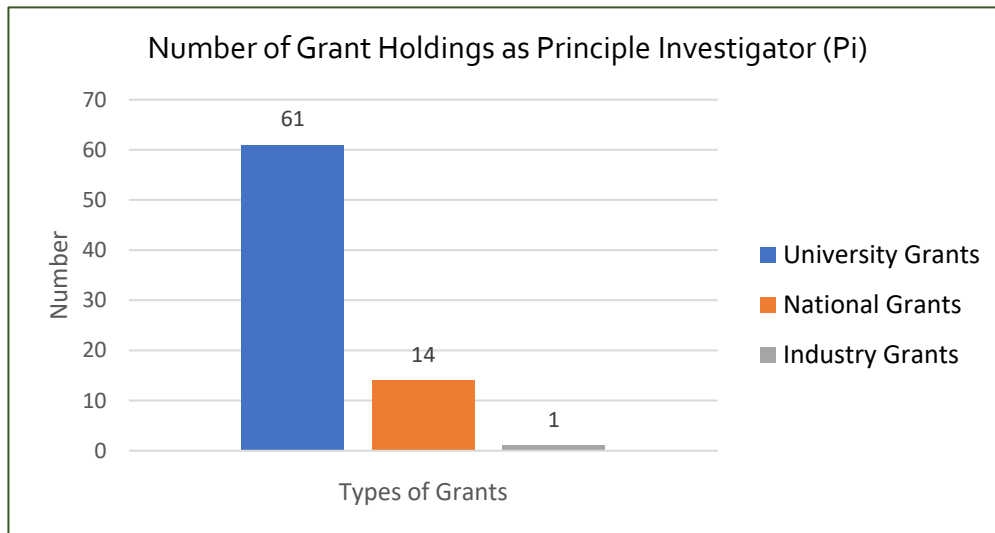
Reported by Assoc. Prof. Dr. Abu Zahrim Yaser, Dr. Aroland Kiring & Malcolm Boxey Jilimin.

The report is presented based on five sections: FKJ Academic Staff Information, Quantity & Quality of Researchers, Quantity & Quality of Researchers of Postgraduates, Professional Services and Gifts, and Networking & Linkages. Up until September 2020, FKJ has 80 active academic staffs and 9 non-active academic staffs, bringing a total of 89. FKJ also managed to obtain various research grants at the national and international levels. The faculty obtained a total of RM5,731,340.32 in the research grant after receiving an additional RM882,260.00 this year. On the publication side, FKJ successfully published 46 indexed journals, 16 indexed proceedings, 4 mycite indexed journals, and others. There are 117 national students, 12 international students and 1 postdoctoral are pursuing their postgraduate studies in various disciplines at the Faculty. Further information and details of the information are given in the following:

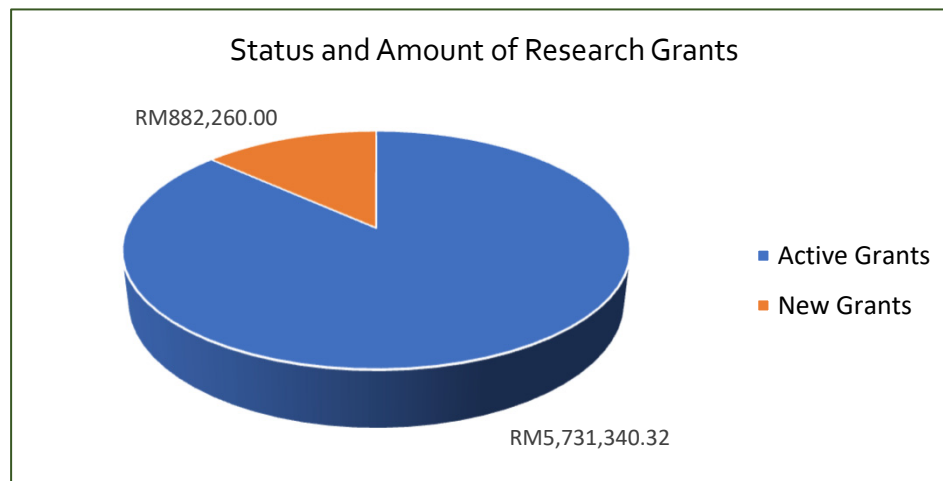
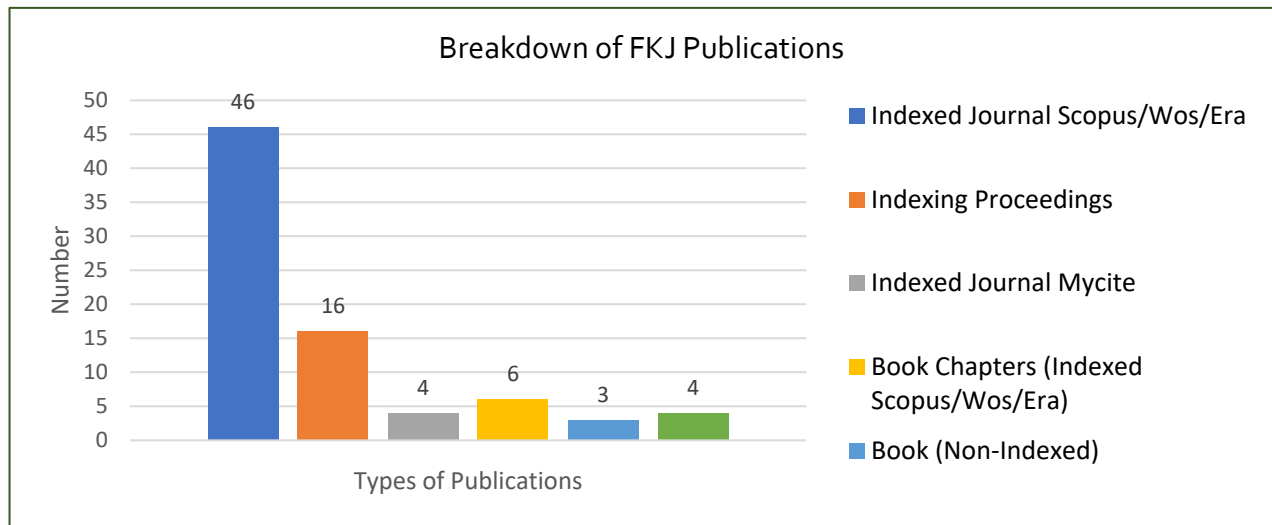
FKJ ACADEMIC STAFF INFORMATION



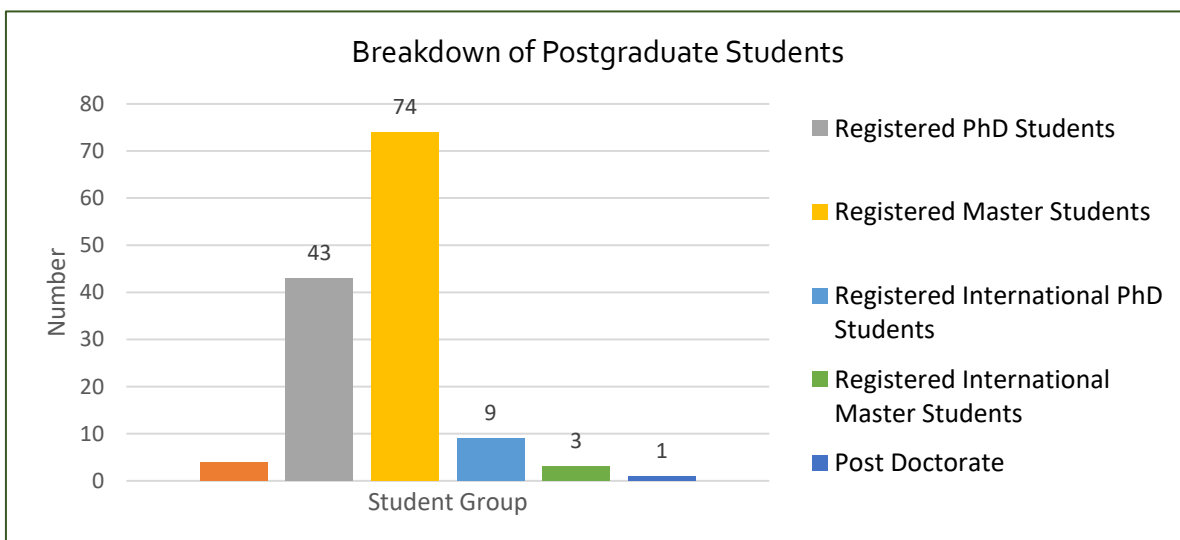
QUANTITY & QUALITY OF RESEARCHERS



QUANTITY & QUALITY OF RESEARCHERS

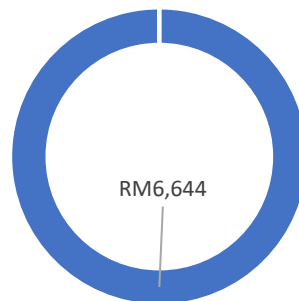


QUANTITY & QUALITY OF RESEARCHERS OF POSTGRADUATES



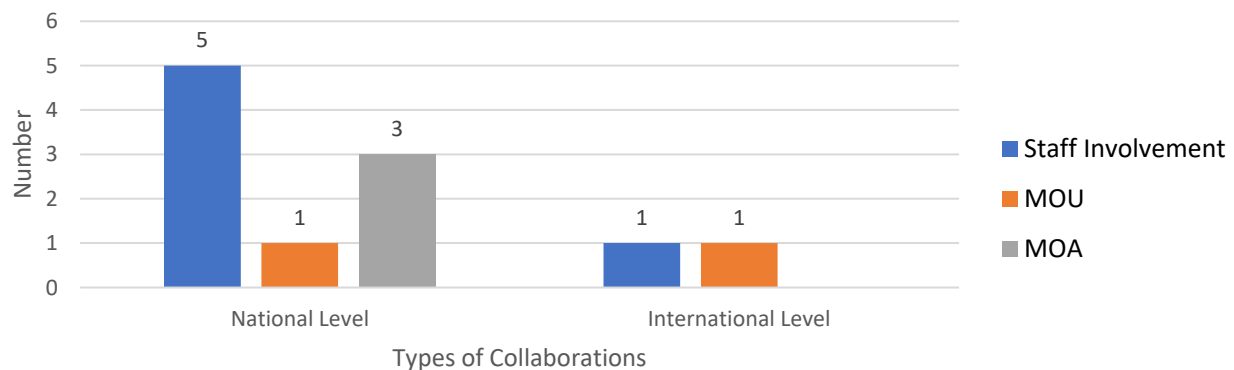
PROFESSIONAL SERVICES & GIFTS

CONFERENCE - International Symposium on Carbon & Functional Materials
For Energy & Environment (CMEE 2020) - RM 6644

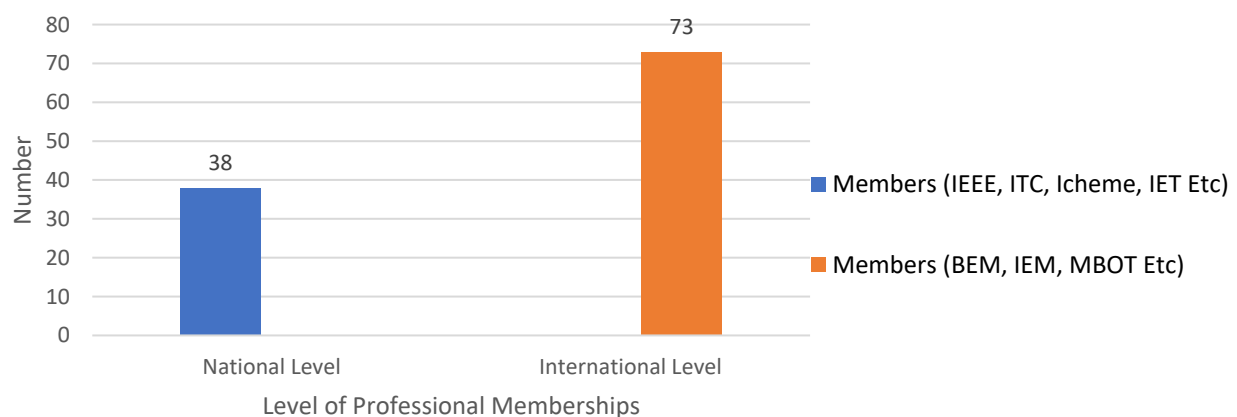


NETWORKING & LINKAGES

Number of National and International Collaborations



Number of National and International Professional Memberships



Off-Grid Rural Electrification in Sabah - Exploring the Potential of On-Site Solar Photovoltaic Energy Generation System

Reported by Dr. Wan Khairul Muzammil bin Abdul Rahim, Dr. Mohd Azlan bin Ismail and Ms. Maryon Eliza Matius.

The World Bank in its 2017 report shows that the access to electricity (% by population) in Malaysia has reached 100% thanks to the different incentives, policies, funds, investments and strategies introduced by the government as emphasized under the 9th and 10th Malaysian Plan. However, the reality is that the current level of electrification in Sabah is still lower than in Peninsular Malaysia. This is especially true in an area without access to modern energy infrastructure. It is estimated that some portion of the population located in remote mountainous or island areas is contributing up to 20% of the state's population that has no access to electricity.



Therefore, through the UMS KinaGeopark programme, a team from the Faculty of Engineering (FKJ) had carried out a preliminary study on the potential of solar energy performance for rural electrification in Sabah. To kickstart the project, the surrounding area of the Kinabalu Geopark was surveyed for its solar irradiation potential. It is found that the region surrounding the Kinabalu Geopark has outstanding potential for the implementation of solar energy projects with a high potential of daily yield (approximately 3.816 kWh/kWp). Then, the Eco-Tourism centre of Liogu Ku Silou-Silou (EPLISSI) in Kota Belud; was selected as the site where a solar energy system with an installed capacity of 2.5 kWp will be deployed to provide energy for the surrounding rural community. The main reason for choosing the site is due to its strategic location; the current activities carried out by the locals, and by taking into consideration the after-development impact towards the surrounding population.

The eco-tourism centre sits deep within a valley, and it is also located next to a river (serves as the main attraction for visitors). Due to this difficult terrain, it is incredibly challenging to lay electrical cables to connect to the main national grid as the cost will be extraordinarily high. Besides, it will also be quite risky due to the high possibility of flooding, which could be hazardous to the surrounding community. From the preliminary study, the average PV output data generated from a GIS model shows that meaningful solar energy output can be harvested as early as 8 am and ends at 5 pm, with peak solar output observed between 10 am to 2 pm. Moreover, the current estimated PV power output of 3.182 MWh per year, or approximately 8.72 kWh per day can be expected to be generated from the system, illustrating the potentiality of off-grid rural electrification deep within Sabah through the implementation of a solar PV energy generation system.

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	8	8	25	61	77	65	47	48	67	90	83	30
7 - 8	248	282	346	428	420	361	321	346	382	434	442	345
8 - 9	599	691	787	874	829	703	656	731	752	800	825	730
9 - 10	903	1039	1163	1221	1155	992	955	1077	1058	1113	1122	1044
10 - 11	1104	1275	1375	1401	1301	1175	1156	1278	1244	1282	1230	1218
11 - 12	1150	1314	1389	1378	1290	1213	1216	1312	1283	1266	1185	1234
12 - 13	1096	1231	1278	1210	1125	1128	1152	1225	1179	1129	1004	1105
13 - 14	918	1101	1124	1094	926	963	1004	1104	1025	933	794	904
14 - 15	734	917	950	884	729	803	831	885	827	719	620	715
15 - 16	550	705	738	655	495	586	592	618	568	499	435	500
16 - 17	328	446	453	385	286	327	329	338	294	254	236	285
17 - 18	106	175	167	143	103	118	129	124	83	55	50	73
18 - 19	0	5	5	1	1	5	6	3	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0	0	0	0	0
Sum (Wh)	7744	9189	9800	9735	8737	8439	8394	9089	8762	8574	8026	8183

Faculty of Engineering UMS Actively Participate Project for Happiness with Khind Starfish Foundation

Reported by Sr. Dr. Asmawan Mohd Sarman.

Kota Kinabalu, September 2020 - Khind Starfish Foundation (KSF) are glad to receive 82 applications from all over public and private university and college in Malaysia and invited 35 teams to present for judging and approved 21 applications. The total amount of sponsorship for 2020 is RM93,800. Out of the total number of projects approved, Faculty of Engineering, UMS (Fakulti Kejuruteraan, FKJ) has managed to get 5 projects under the supervision of Sr. Dr. Asmawan Mohd. Sarman with a value of RM23,500.00, which is 25.05% from the total sponsored amount, from the group Better Life Environment with Solar System (B.L.E.S.S), Covid-19 Un-filter Project (C.U.P), Save Animals Through Unity (S.A.T.U), Good Life Essential for Everyone (G.L.E.E) and Let Agriculture Connect Everyone (L.A.C.E)

Despite the fact, KSF is sponsoring all the chosen projects, all the groups have to do fundraising themselves of at least 15% from the sponsored money as a required qualification for a full sponsorship, not to burden the student but, to encourage them to be responsible and do their best in implementing their proposed project. Such a program held by KSF is very beneficial to all the student since it helps to cultivate them on the spirit of teamwork in brainstorming great ideas and also the project implementation. Moreover, it helps to improve their communication skill and interaction with the community as well as being able to show devotion to the community as what one student from group B.L.E.S.S, Suffian Bin Abdul Karim did. He met with the youth leader of Kampung Teluk Layang, Kota Kinabalu, Mr. Narasan and talk about the shortage of facilities that the communities of Kampung Teluk Layang faced.

Besides, according to another student, Azmira Rosli, this program was held by KSF at a perfect timing in which it was the semester break for all UMS student. Hence, it helps the student to fill their leisure time with something useful by allowing the student to be creative in helping others and be productive during the semester break. It was such an achievement for UMS since many FKJ student actively participated and did not want to waste their precious time without doing anything. It is also a challenge for all the participants when this year project is implemented during the Covid-19 pandemic and it is hoped that all the planned programs can be done successfully.

Therefore, FKJ is proud to have these several groups who were selected for their incredible ideas to help the underprivileged communities in Sabah. FKJ hopes that all these 5 groups of Civil Engineering student can gain quality working experiences and make UMS proud of their student. Most importantly, the highest appreciation is given to Khind Starfish Foundation for creating a great platform for all the students in Malaysia, especially the students from FKJ, UMS, to serve the community in Sabah.



projects for happiness
Your Action Changes The World

CONGRATULATIONS

21 **SELECTED FROM**
TEAMS **A POOL OF 82**
PROJECTS

TOTAL FUNDING OF
RM93,800

OUR PARTNERS




On the left, Suffian with Mr. Nasaran the youth leader of Kampung Teluk Layang, KK

COVID Time: Publishing High Impact Review Paper At Home

Reported by Associate Prof. Dr. Abu Zahrim Yaser.

I start to write this article on 3 Oct 2020. The day where Sabah starts to prohibit its people to cross the other district due to the rising in positive Covid-19 cases. Without any doubt, the pandemic has slowed down our research. For instance, our group gross pollutant trap (GPT) prototype installation has been delayed due to the restriction. The same goes to our composter for vegetable waste processing in Kundasang (FIGURE 1). Nonetheless, a pandemic is not a reason for not to publish especially writing a review paper.



FIGURE 1: Datuk VC and team visited the composter house on 18 July 2020

Nowadays, the academician is not only required to publish but need to publish in highly reputable journals. Publishing in high-impact journals becoming an important aim in UMS especially for FKJ academicians to boost our MyRA stars. The KPI for Professors, Associate Professors, and lecturers has been given by the top management. We should set our minds and focus on this agenda which in return would elevate the university and its academician's reputation. Besides its potential to get high citations and required no lab work, this is might be the right time to publish a review paper. In addition, we do not need any single cent to produce a review paper. Now, I believe that everyone can produce a review paper at their home!

To produce a review paper, we only need a determination in reading 200 journals or less, analysing the content and finally, summarising, and criticising the ideas. An academician is recognised as having good qualities to carry out all these functions; reading from one journal to another journal and from a book to another book.

Due to a large amount of data that needs to be compiled, working in a group to produce a review paper is of utmost recommendable. Our group including UPM, UiTM, UMT, and UTM scholars have submitted a review paper on spent mushroom compost to the *Journal of Material Cycles and Waste Management*. Hopefully, we can pass all the process and get published, InsyaAllah. Besides that, our academicians should utilise the potential of our bachelor, postgraduate students as well as a post-doctoral fellow and guide them to produce a high-quality review paper. It should be mentioned that, although our GPT prototype installation has been delayed, we manage to publish a paper entitled "Embedding Nano-adsorbents Within Gross Pollutant Traps (GPTs): A Review" with Springer on this topic. Alhamdulillah. We may fear of the pandemic but do not ever fear of paper rejection. Always think positively in the paper rejection as a learning process and then move forward. In this regard, I personally believe that all academicians should familiar with references managers software such as EndNote or Mendeley. This software really saves our breath when formatting of manuscript is required for large amount of references. Our papers have been rejected many times and we still motivated to improve the paper based on the comments and submit the papers again.

In writing a review paper, one may consider these qualities, I called it *1U6C formulas*: unique, creative, concise, critics, choosy, current, and chronology (See FIGURE 2). Our paper should be unique and contribute to the updated achievement in technology. The presentation should be creative e.g. nice and informative figures. The statement should be concise, able to summarise various findings and if possible, to generalise the findings. Critics of the other finding should be included in contributing our opinions and expertise in that area. We should carefully select the proper references and give preference to the latest technology. Finally, the chronology of every technology should be observed and to include its history whenever necessary.

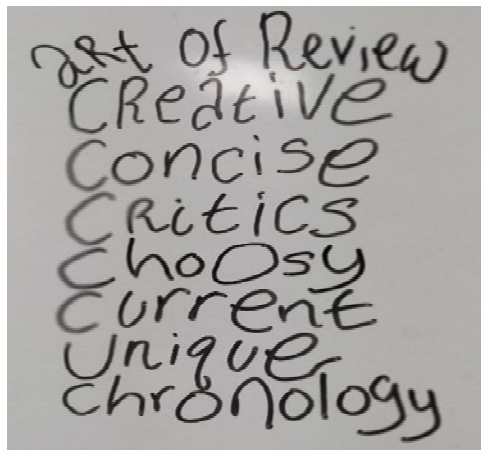
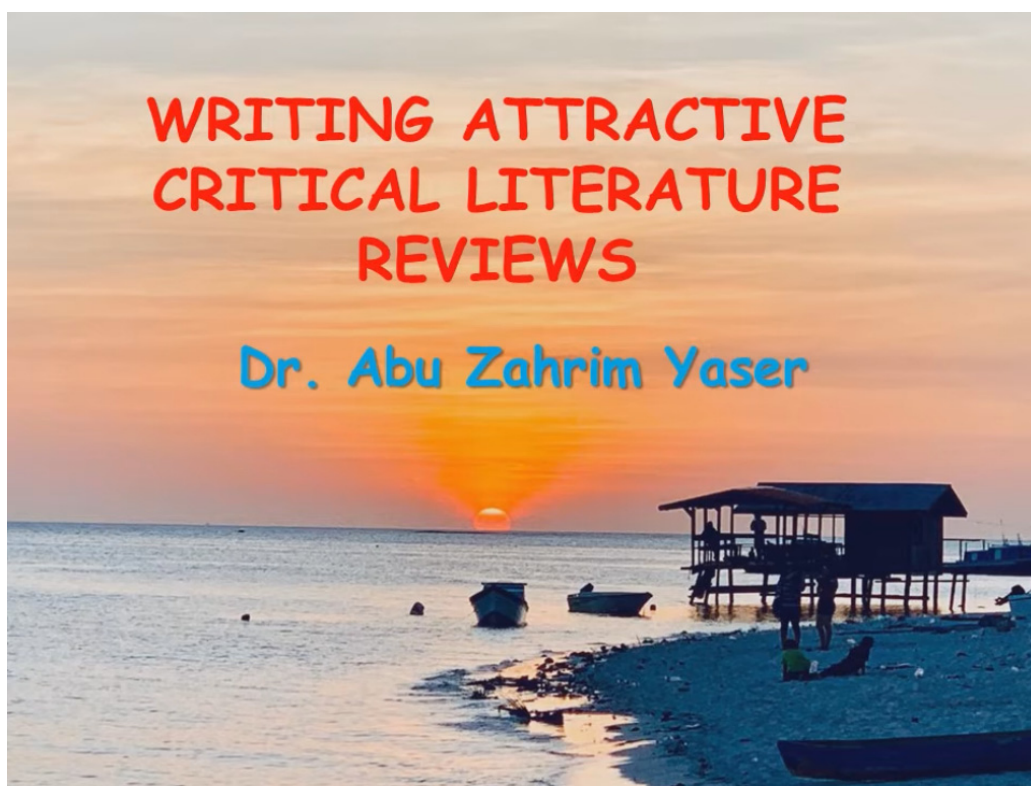


FIGURE 2: Art of Review

One of the great moments during MCO is the production of lecture notes on review paper through YouTube (FIGURE 3). The YouTube's content consists of simple guidelines in writing an attractive review paper. As per request from the students, I need to produce lecture notes to Master of Oil and Gas students as well as final year students. To conclude, by proper *tajweez* (plan and preparation) and *tanfeez* (execution), it is possible to publish a review paper and surely enhance our achievement during these difficult days. "*Hendak seribu daya, tak hendak seribu dalih*". On a side note, we are welcoming Dr. Junidah Lamaming (post-doctoral fellow) and Mohd Al Mussa Ugak (research assistant) to the Environmental Chemical Engineering Group.

FIGURE 3: YouTube on *WRITING ATTRACTIVE CRITICAL LITERATURE REVIEWS*

Congratulations, Greetings & Birthday Wishes From FKJ

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FACULTY OF ENGINEERING



Setinggi-tinggi Tahniah

Associate Professor Ir. Dr. Nurmin Bolong

DI ATAS KEJAYAAN DIANUGERAHKAN

**JURUTERA PROFESSIONAL (PE)
LEMBAGA JURUTERA MALAYSIA (BEM)**

Approval Date: 18/06/2020
Reg. No: P121107
Discipline: CIVIL

Daripada: Dekan, Pengurusan & Warga Fakulti Kejuruteraan, UMS



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FAKULTI KEJURUTERAAN
FACULTY OF ENGINEERING



Setinggi-tinggi Tahniah

Professor Ir. Dr. Zainal Zakaria

DI ATAS PERLANTIKAN

**AHLI PANEL PENILAI
AGANSI KELAYAKAN MALAYSIA (MQA)
01 Jun 2020 – 31 Mei 2023**

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Setinggi-tinggi Perhargaan

Dr. Mohd Azlan Ismail

DI ATAS PERLANTIKAN

**PENYELARAS LIBAT SAMA KOMUNITI
FAKULTI KEJURUTERAAN
01 Julai 2020.**

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FACULTY OF ENGINEERING



Setinggi-tinggi Perhargaan

Sr. Dr. Asmawan Mohd Sarman

DI ATAS PERLANTIKAN

**PENYELARAS ALUMNI DAN INDUSTRI
FAKULTI KEJURUTERAAN
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Setinggi-tinggi Tahniah

Dr. Emma Suali

DI ATAS PERLANTIKAN SEBAGAI

PENYELARAS
PROGRAM KEJUEUTERAAN SARJANA MUDA MINYAK
DAN GAS, FAKULTI KEJURUTERAAN
1 Oct 2020 sehingga 30 Sept 2022.

Daripada: Dekan, Pengurusan & Warga Fakulti Kejuruteraan, UMS



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Fakulti Kejuruteraan UMS



DR. KENNETH TEO TZE KIN
Fakulti Kejuruteraan
Nilai Dana : RM 158,000.00

Nama ahli:

1. Prof. Madya Dr. Ismail Saad
2. Prof. Madya Ir Dr. Yang Soo Siang
3. Dr. Rene Chin Ka Yin
4. Dr. Lim Kit Guan
5. Dr. Herwansyah Bin Lago

Prototyping Multi-Hop Information Scavenging Transceiver for Intelligent Public Transportation Systems

Setinggi-tinggi
Tahniah

Para penyelidik UMS
atas perolehan

SKIM GERAN PENYELIDIKAN PEMBANGUNAN
PROTOTAIP (PRGS) FASA 1 TAHUN 2020
KEMENTERIAN PENGAJIAN TINGGI



DR. CHIN KIM ON
Fakulti Komputeran dan Informatik
Nilai Dana : RM 58,450.00

Nama ahli:

1. Prof. Madya Dr. Rayner Alfred
2. Dr. Ervin Gubin Moug

Application of Image Processing and Neural Networks for the Development of eSummon Android Apps for Vehicle Surveillance and Security

daripada Lembaga Pengarah, Pengurusan Tertinggi dan Seluruh Warga Universiti Malaysia Sabah

DINAMIK . LESTARI . INTEGRITI . KEADILAN . KEGEMBIRAAN



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TERAS KECEMERLANGAN DAN KEUNGGLAN

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 @UMS_EcoCampus

 @UMS.official

For all those born from July to September, we wish you a Happy Birthday and many happy returns.



Happy
Birthday

JULY

AMESAH CHUNGAN (04 July)
 SYAMSURI TAHIR (04 July)
 HAFEZA BINTI ABU BAKAR (06 July)
 MOHD SUFFIAN BIN MISARAN @ MISRAN (08 July)
 HABIB MUSA BIN MOHAMAD (12 July)
 OSFIAN BIN AWANG TUSIN (12 July)
 SERI BIN PALI (15 July)
 LIM CHUNG HAN (15 July)
 ABU ZAHRIM BIN YASER (18 July)
 PUNGUT BIN IBRAHIM (20 July)
 CHUA BIH LII (22 July)

AUGUST

NAZREIN ADRIAN BIN AMALUDIN (02 Aug)
 ABDUL KARIM BIN MIRASA (06 Aug)
 AFFLIZAILIZAM B. ALI HASSAN (06 Aug)
 MUSLEE BIN MANTAHA (07 Aug)
 JODIN MAKINDA (13 Aug)
 JUNIDAH BINTI LAMAMING (13 Aug)
 ELLERYL LYNN ROBERT (13 Aug)
 CHOONG WAI HENG (15 Aug)
 NOOR MAIZURA BINTI ISMAIL (15 Aug)
 ABDULLAH BIN TARIKIM (20 Aug)
 MURALINDRAN MARIAPPAN (20 Aug)
 BORHAN BIN MASALIN @ MOHD. SALIN (20 Aug)
 ABDULLAH B. MOHD. TAHIR (20 Aug)
 NOOR AEMI BINTI DAWALIH (25 Aug)
 HERWANSYAH BIN LAGO (26 Aug)
 ZUHAIR BIN ABDULLAH (29 Aug)
 NADIRAH BINTI YUSOF (30 Aug)
 VICTORIA BINTI ASOI (30 Aug)

For all those born from July to September, we wish you a Happy Birthday and many happy returns.

Happy
Birthday



SEPTEMBER

FADZLITA BINTI MOHD TAMIRI (01 Sept)

FARHANA BINTI ABD LAHIN (03 Sept)

FARMYANYAN (07 Sept)

NURMIN BT. BOLONG (12 Sept)

SHEIKH MOHD IQBAL BIN S ZAINAL ABIDIN (13 Sept)

KHAIRUNISHAM MOHD HARUN (13 Sept)

ALEXANDER KOONG (13 Sept)

ALICE RUSLIN KUMIS (21 Sept)

NUR-AFINI SEPTIYANA BINTI NORMAT (21 Sept)

SALINAH BTE DULLAH (23 Sept)

FREDDY DISUK (23 Sept)



FAKULTI KEJURUTERAAN
FACULTY OF ENGINEERING



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HARI KEBANGSAAN KALI KE-63



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HARI MALAYSIA

16 SEPTEMBER 2020



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