## RESOURCES

OFFICIAL NEWSLETTER OF THE FACULTY OF CHEMICAL AND PROCESS ENGINEERING TECHNOLOGY(FTKKP) UNIVERSITI MALAYSIA PAHANG



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## RM 1.06 MILLION FROM MTDC COMMERCIALIZATION OF BIOACTIVE KERATIN PROTEIN

13 September 2021 - Professor. Dr. Arun Gupta received CRDF2 funding of RM 1.06 million from Malaysian Technology Development Corporation (MTDC) for the commercialization of Bioactive keratin protein. It is the first time, a researcher from UMP has been awarded an CRDF2 funding. The other members of the project are Professor Dato' Dr. Rosli Mohd Yunus and UMPT.



## FIRST WOMAN APPOINTED AS TECHNICAL PANEL MEMBER OF FATWA BY MUSLIM PROFESSIONAL JAPAN ASSOCIATION (MPJA)

27 May 2021 - Asssoc. Prof. Ts. Dr. Farhan Mohd Said (2nd from right in the photo), expertise in food technology and biotechnology has been appointed as a technical panel member of fatwa council MPJA. MPJA is one of the pioneers of halal information resources in Japan, established to aid in and spread knowledge and information about the Islamic way of life to Japanese society. MPJA also carries out halal auditing and certification that comply with international quality and standards in Japan. According to MPJA Managing Director, Akmal Abu Hassan, the appointment of A.P. Ts. Dr. Farhan is right in her area of technical expertise in halal certification, which is seen to start opening the eyes of entrepreneurs and industry players in Japan.

#### FORWARD FROM DEAN



In the name of Allah, Most Gracious, Most Merciful. Salawat & salam to our prophet Muhammad SAW. In this pandemic time, 2021 was a time full of significant achievements as well as challenges and opportunities. We experienced continuous achievements in research and development, academic activities and industrial engagement. They were in the forms of research projects established, as well as medals received by our researchers and students. For that, I am grateful to Allah that this Faculty has been blessed with a group of proactive and dedicated staff. I hope for excellent future for the faculty.

Prof. Ts. Dr. Che Ku Mohammad Faizal Bin Che Ku Yahya

Dean of FTKKP

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## INDUSTRIES SHARE KNOWLEDGE WITH FTKKP STUDENTS AND STAFF





















Faculty efforts to ensure students are equipped not in just fundamental knowledge of engineering in spite with the real circumstances in industries. Thus, initiative to organize session and talk with experts from industries is expected to tackle and give exposure to the real situation in industry. Many subjects have implemented this session either for diploma or bachelor degree programme. Expertise from various company such as BASF PETRONAS Chemical Sdn. Bhd., PETRONAS Sdn. Bhd., TNB research Sdn. Bhd., Kazam Energy Sdn. Bhd, Emerson and APPLUS Malaysia Sdn. Bhd. Subjects that were involved for bachelor degree programme like Optimal LNG Operation, Welding & Inspection, Chemical Process Principles, Bioprocess Technology, HSE in Oil & Gas Industry, Plant Trouble Shooting & Maintenance, Environmental & Sustainable Technology and Process Management & Economics. Meanwhile for diploma level, subject like Plant Supervision was also organized this kind of session to give exposure to the students.

#### INDUSTRIAL ENGAGEMENT

### BVF PROGRAMME COLLABORATED WITH INDUSTRIES FOR SKILL ENHANCEMENT OF STAFF AND STUDENT













Bachelor of Technology In Oil and Gas Facilities Maintenance (BVF) programme proactively collaborated with industries to empower students and staff with sufficient skills. Academic and technical staff have been sent to various upskilling training. The courses are Reciprocating Compressor: Operations, Maintenance, Inspection

& Troubleshooting, Inspection and Maintenance of Pump (Serba Dinamik Sdn. Bhd.), Learning Development Program: Static 1 & Static 2 (INSTEP PETRONAS), Authorised Entrant and Standby Person (AESP) for Confined Space (NIOSH), Basic Welding Process Training (GMAW)(ADTEC Jerantut), Basic Process Instrumentation Measurement & Hands-On Field Instrumentation Calibration (Delta Skills Solution Sdn Bhd.) and many more. The programme also signed a Memorandum of Understanding (MoU) with AB24 Engineering Sdn. Bhd. for student placement like internship and work based learning.

## INDUSTRIAL GRANT RECEIVED FROM TNB RESEARCH, FPG OLEOCHEMICAL, MYAH MINES AND VENATOR ASIA SDN. BHD.





In 2021, 4 academic staff received grant from industries. Ts. Mohd Najib Razali received RM30 000 from TNB research Sdn. Bhd. for research entitled Material Testing and Evaluation Process for Battery Performance and Durability in TNB distribution. Dr. Noormazlinah Ahmad is granted with RM50 000 for research work on Integration Project FPG Oleochemical Sludge Waste Management.





Meanwhile Assoc. Prof. Dr. Syarifah Abd Rahim received grant from Venator Asia Sdn. Bhd. with RM 13 750 to do study of Copperas Solubility. Lastly, Myah Mines Sdn. Bhd. granted RM10 000 for research work done by Assoc. Prof. Ts. Dr. Mohd Yusri Mohd Yunus entitled Extraction of Erbium and Ruthenium from Tailing Mining using Solvent Extraction.

#### **ACADEMIC ACTIVITIES**

## FTKKP

Fakulti Teknologi Kejuruteraan Kimia dan Proses Faculty of Chemical and Process Engineering Technology





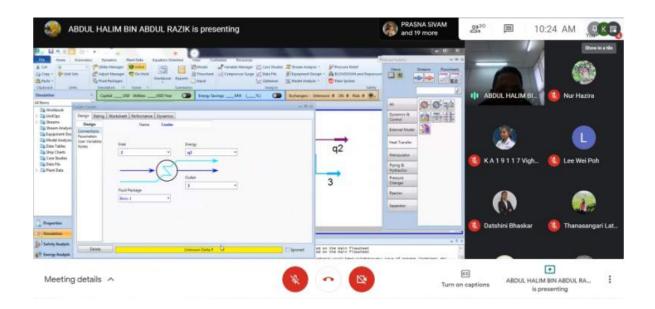




#### JANUARY 2021

#### VIRTUAL WORKSHOP: ASPEN HYSYS

Was successfully organized by IEM-UMP Student Section on 8th January 2021 in collaboration with Student Affair & Alumni Department (SAFFAD), UMP. The workshop was conducted by an expert in Aspen Hysys, Dr Abdul Halim Abdul Razik and it was attended by 27 UMP students from various courses. The main objective of this program is to foster and provide exposure to UMP students into the world of professional engineering and help students to highlight their college experience through the involvement of activities organized by the IEM-UMP Student Section.



#### FEBRUARY 2021



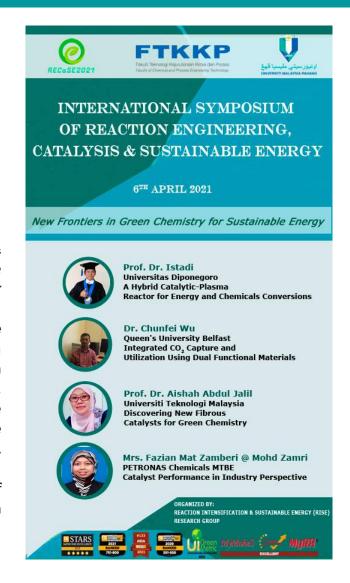
# SHARING SESSION ON MASTER'S DEGREE OPPORTUNITIES AT FTKKP

An online sharing session potential master students has been organised by FTKKP Postgraduate Studies Committee provide to information on opportunities to pursue postgraduate studies in the research and coursework modes at FTKKP and incentive initiatives promote introduced by FTKKP (financial aid, Bachelor-Master integration program).

#### APRIL 2021

# INTERNATIONAL SYMPOSIUM OF REACTION ENGINEERING, CATALYSIS & SUSTAINABLE ENERGY 2021 (RECASE2021)

On the 6th of April 2021, the 1st International Symposium of Reaction Engineering, Catalysis & Sustainable Energy 2021 (RECaSE2021), with the theme " New Frontiers in Green Chemistry for Sustainable Energy", was successfully organized by the Reaction Intensification & Sustainable Energy (RISE) Research Group, This symposium managed to attract participants who come from all over the world, especially from South Korea, Vietnam, India, Thailand, and Indonesia to share their thoughts and findings on the future prospects of catalysis and sustainable energy. The number of submitted papers were beyond the original target, standing at 140 and 90 of them were selected for the oral presentation in RECaSE2021.



#### **ACADEMIC ACTIVITIES**

#### TIPS & TRICKS OF PUBLICATION IN HIGH IMPACT JOURNAL

An online publication workshop which mainly focuses on the participants of RECaSE2021 and those who need an indepth guide and continuous consultation from the experts. The workshop was held a day after RECASE2021 pulled more than 20% of the total participants, in addition to several staff and students from other institutions and governmental agency.



#### OCTOBER 2021

# LIVE WEBINAR - THE VALUE OF WASTE: NANOCELLULOSE AS A FUTURE MATERIAL BUILDING BLOCK

An international webinar on "The Value of Waste: Nanocellulose as A Future Material Building Block" was organized by Advanced Materials Research Cluster (AMReC). FTKKP. The invited speaker is IR Dr. Athanasia Amanda Septevani, Senior Researcher at Research Centre for Chemistry, National Research and Innovation Agency (BRIN), Indonesia. The focus of this webinar is on the potential of biomass as a cellulose resource, synthesis routes, optimization and applications of nanocellulose materials. In addition, among the points being shared are research activities done in BRIN, and collaboration potential on research especially in nanocellulose field.



#### NOVEMBER 2021

## EMPOWERING DIGITALIZATION AND INDUSTRY REVOLUTION 4.0 IN ENGINEERING TECHNOLOGY EDUCATION

The workshop aims to discuss the importance of digitalization in current chemical engineering technology education. The representatives from industry and academia were invited to give their presentations. The workshop began with a welcoming speech by FTKKP Dean, Prof Ts. Dr. Che Ku Mohammad Faizal Bin Che Ku Yahya. AP. Ts Dr. Mohd Rusllim bin Mohamed (UMP), a CEO UMP Advanced Education Sdn. Bhd presented the way forward of TVET education in Malaysia and the responsibilities of Malaysian Technical University Network (MTUN) and Malaysia Board of Technologist (MBOT) to strengthen the TVET education. The second speaker, Ir. Fadzrul Izwan bin Muhd Ali, a Principal Engineer from Group Technical Solutions, PETRONAS shared the importance of process simulation as a tool for chemical engineers to facilitate the future working under remote autonomous operation in the chemical industry. Prof. Dr. Ulrich Trägner, a guest professor from Hochschule Mannheim, Mannheim University of Applied Sciences, delivered a lecture on Overview on digitalization and IR 4.0 in Germany Engineering Technology Education.



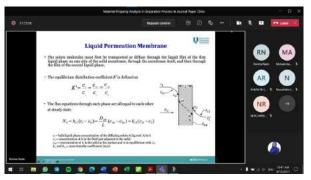


#### DECEMBER 2021

## MATERIAL PROPERTY ANALYSIS IN SEPARATION PROCESS & JOURNAL PAPER CLINIC

A workshop was organized by Separation & Process Technology Cluster (SEPAT). The invited speakers are AP Ts. Dr. Norashikin Mat Zain, Dr. Rosmawati Naim, and Dr. Norhanuni Ramli@Said. The panels' presented topics were Centrifuge & Electropherosis in Separation, Liquid and Gas Permeation Test, Atomic Force Microscope (AFM) and Scanning Electron Microscope (SEM): Analysis of Materials. The focus of this workshop is to create a platform where postgraduate students can engage with academicians through forums and discussions.





#### **RESEARCH ACTIVITIES**

## 2ND PROSCESS SYSTEMS ENGINEERING AND SAFETY (PROSES) SYMPOSIUM 2021 - ROLES OF PROCESS SYSTEMS ENGINEERING FOR SUSTAINABILITY

1 December 2021 - Faculty of Chemical and Process Engineering Technology, Universiti Malaysia Pahang is honoured to host this biannual event of Process Systems Engineering and Safety (ProSES 2021)Symposium, the second in its edition. This symposium is co-organized by Proses Systems Engineering and Safety (ProSES) research group, Occupational Safety and Engineering Research Group (OSERA) and Competence Centre for Smart Integration System in Process Industries (CC-SISPI).

This one-day symposium is aimed to gather intellectuals from various fields to share the knowledge and discuss the recent trends and current issues in the fields of modelling and simulation, process control and optimization related to chemical engineering. It is also served as a platform to initiate research collaboration network among participants with similar research interests from around the world. The first Proses Symposium was held in 2019 and had marked a significant achievement receiving delegates from local and international countries.

In this symposium, 29 papers are submitted from PETRONAS and local universities such as UMP, UTM, UPM and Heriot-Watt University. The selected papers will be published in the AIP Conference Proceedings (Scopus indexed proceeding). The invited keynote speakers are Prof. Dr. Gade Pandu Rangaiah, Emeritus Professor from National University of Singapore (NUS) and Dr. Shahrul Azman Zainal Abidin, technical advisor and qualified Custodian Engineer at PETRONAS Group Technical Solutions.









#### **RESEARCH ACTIVITIES**

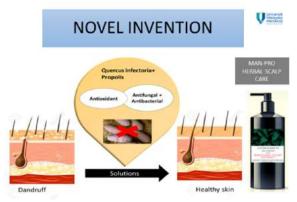




#### INTERNATIONAL AND NATIONAL GRANT

Great news was received for research team lead by Dr. Noormazlinah Ahmad with team member Dr. Siti Hajar Noor Shaarani as they were granted by International Research Fund- Qatar National Research Fund. Total amount received is USD 119, 094 with work on "Hydroponics and Aquaponics with AloT in Qatar. Meanwhile Dr. Mohd Shaiful Zaidi Mat Desa has been granted a total of RM105 600 for research tiltle "NDT Liquid Penetration Testing (PT) Inspector Program" from Geran Penjana KPT-Career Advancement Program.





#### LAB TO MARKET GRANT

Recently, Dr Rajaletchumy Veloo Kutty and Miss Tanesha Thanaseelan has successfully secured lab2market grant from UMP with the value of RM91,773.79 for Herbal scalp care product. This project has won gold medal during 32nd International Invention, Innovation & Technology Exhibition 2020 (ITEX'20) was held virtually. Thus, with this grant the project aims to produce 500-unit product to complete the market study as well as clinical evaluation to further confirms its effectiveness. With this we hope this product can be successfully commercialized. Herbal scalp care will be a novel formulation using medicinal plant extract as an anti-dandruff agent that helps to overcomes scalp problems.

#### 11 FTKKP STAFF RECEIVES FRGS GRANT

In 2021, FTKKP lecturers again successfully to continue achievement from 2020 in receiving grant from Fundamental Research Grant Scheme (FRGS) from Ministry of Higher Education Malaysia. Total of eleven staff are granted with FRGS for 2021.



#### **ACHIEVEMENTS - STAFF**













# 6 FTKKP STAFF RECEIVED AWARDS AT HARI KUALITI & INOVASI DAN CENDEKIA BITARA UMP 2021

Hari Kualiti & Inovasi dan Cendekia Bitara is an annual awards ceremony that was created by UMP in 2009 to recognize excellence among staff. In August 2021, six of FTKKP staff was announced as winner for the awards. Firstly, Ts. Mohd Najib Razali was granted as winner for 'Anugerah Khas Komersial' for his successful start-up company MNR Multitech Sdn. Bhd. Again for industrial contribution, Dr. Noormazlinah Ahmad was granted for 'Anugerah Kualiti Kerjasama Industri (Academician category)'. For Journal publication award, two of FTKKP staffs were announced as the winner which are Assoc. Prof. Ts. Dr. Mohd Yusri Mohd Yunus and Mrs. Sharifah Fathiyah Sy Mohamad. Then, Assoc. Prof. Ts. Dr. Norashikin Mat Zain was granted an award for category of 'Harta Intelek yang Dikomersial'. In spite of academic and industry collaboration excellence, FTKKP staff also active in sport event which have contributed to the winning of Dr. Rosmawati Naim which was announced as the best female athlete in UMP for 2021. May FTKKP glorious achievement and spirit can be continuously motivating other members in the future.

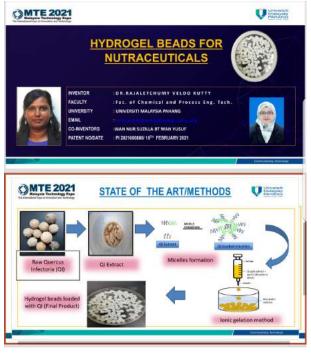
# 4 GOLD, 1 SILVER ,1 BRONZE MEDALS AND BEST OF THE BEST AWARD AT CITREX 2021

The Creation, Innovation, Technology & Research Exposition (Citrex 2021) was held virtually and the result was announced in live broadcast at FB UMP Research & Innovation on 7TH April 2021. As the competition was done virtually, participant required to present their innovation in video to be evaluated. Despite of the challenge to convey the idea, FTKKP lecturers won 4 gold medals from the event. They were Dr. Rajaletchumy Veloo **Kutty** (Antimirobial Herbal Foaming Hand Wash), Assoc. Prof. Dr. Mohammad Rizza Othman (Intensified Equipment for Producing High Purity MTBE), Prof. Dr. Arun Gupta (Novel Bio-Based Adhesive from Cross-linked Rice Starch-**Natural Rubber Latex For Woodbased Panels** and Dr. Norida (Development of Novel Polymer (Steary) Acrylate-co-Behenylacrylate) for Deposition Inhibition of Malaysian Crude Oil). Meanwhile, silver medal won by Dr. Noor Ida **Amalina Ahamad Noordin (Recovering Value** from Waste Development of G-Nanocellulose **Derived from Ananas Comosus Leaves) and** bronze medal won by Mrs. Fathie Zakil (Waste to Wealth: Low Costfruiting Body **Substrate for Pleurotus Ostreatus Cultivation** using Various Agro-Industrial Wastes in Malaysia: Application of Natural Calcium Source). For student category, student. Ms. Atirah Fatini Zin Azmi awarded Best of the Best Award for the research title Pineapple **Enzyme: Beneficial Poultry** Supplement.

**Congratulations!** 



# 3 GOLD MEDALS AT ITEX 2021, 1 SILVER MEDAL AT MALAYSIA TECHNOLOGY EXPO 2021 AND INVENTION, INNOVATION & DESIGN ON E-LEARNING COMPETITION





Malaysia Technology Expo 2021 was held virtually on 22-26 March 2021. All participants required to present their work in video presentation the result was announced in live broadcast. Dr. Rajaletchumy Veloo Kutty has awarded silver medal in the exhibition. The research that won the medal entitled "Hydrogel Beads for Nutraceuticals".

FTKKP lecturers also achieved excellent result for learning and teaching competition. The team lead by Ts. Md Noor Bin Arifin has won silver medal in the Invention, Innovation & Design on e-Learning (IIDEL) Competition in conjuction with the International University Carnival on E-Learning (IUCEL) 2021 on 15-16 June 2021. Other team members are Ts. Junaidi Zakaria and Dr. Rozaimi Abu Samah. They presented a project titled "High Quality Recorded Video for the Effective Inverted Classroom Application".

Lastly, in International Invention, Innovation & Technology Exhibition (ITEX 2021) the success continue with 3 gold medals from FTKKP researchers. Dr. Norida Ridzuan won the award with research entitled "SABA Co-polymer Wax Inhibitor", Dr. Rajaletchumy Veloo Kotty with research on "Antimicrobial Herbal Hand Wash" and Dr. Suriyati Salleh with the research title "Go Green with Co-Torrefied Oil Palm (Co-Top) Pellet".

**Congratulations!** 





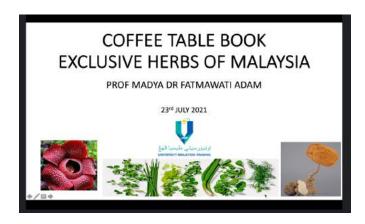
# A COFFEE TABLE BOOK PROJECT BY FTKKP WITH SEKOLAH KEBANGSAAN GAMBANG: COMMEMORATES THE EXCLUSIVITY OF HERBS IN MALAYSIA

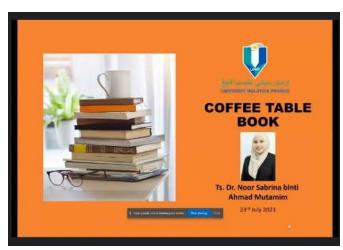
#### WRITTEN BY DR. NORASYIKIN ISMAIL

Separation & Transport Research Cluster, Faculty of Chemical & Process Engineering Technology (FTKKP), Universiti Malaysia Pahang (UMP) to collaborate with Sekolah Kebangsaan Gambang (SKG), Pahang in publishing a Coffee Table Book that commemorates the exclusivity of herbs in Malaysia. Malaysia boasts an impressive 15,000 species of plants, thanks to its tropical climate. Among those, only 64 herbal plants, like Semang and Temuan, are native. Most herbs are home in a more temperate climate around the globe. With the rise of social media and the ever revolutionized fast-paced world, our younger generation might no longer be aware of local herbs' unique role in our society. Our elders have been using herbs for thousands of years. For instance, herbs are used to add flavor to meals, as medicine and as a preservative. This knowledge needs to be passed down to future generations so we can uphold the special position herbs hold amongst Malaysians.

On the 23rd of July 2021, an online workshop was held via Google Meet lead by Assoc. Prof. Dr. Fatmawati Adam. This workshop involved more than 40 participants, which are SKG students, teachers, parents, and lecturers from FTKKP. This online workshop was the starting point of this collaboration, and the objective was to introduce the Coffee Table Book concept to the students. It is hoped that by involving the students in the book-writing process, the students would benefit by gaining important skills that would be beneficial to them such as writing a technical article and writing ethics. Thus, inspired them to celebrate the importance of herbs in our society.

Dr. Noor Sabrina Ahmad Mutamim shared the topic 'Introduction to the Coffee Table Book' and Assoc. Prof. Dr. Fatmawati Adam presented a guideline on how to write a technical article specifically for Coffee Table Book. Students were also exposed to ethics in writing such as originality and plagiarism. Ts. Joharizal Johari gave some photography tips for capturing photos of herb plants. Dr. Norhanuni Ramli, Dr. Nor Hanimah Hamidi, and Dr. Siti Kholijah Abdul Mudalip assigned the participants to write a short technical article about the herb. Some of the herbs are Rafflesia and pitcher plant.





Moving forward, with guidance from mentors and English teachers, the students will submit the articles to the editorial team for compiling, editing and then published by Penerbit UMP. This collaboration will be one of UMP efforts in giving back to the community by educating and guiding the younger generation to protect and preserve nature.



# DONATION FOR RAMADHAN AND AIDILFITRI 2021 BY FTKKP STAFF WELFARE CLUB









Last Ramadhan 2021. FTKKP Staff Welfare Club has launched RM30 Ramadhan Kit and it was collected among FTKKP staff. The Ramadhan kit was consisted of essential item like eggs, a bag of rice, flour and etc. The collected for Aidilfitri fund was also celebration as well. The kits was distributed to the janitors in faculty. The kits also distributed to the students that live in rental house outside of campus. Other than that, the kits also were shared to local community around Gambang, and Kg. Sri Fajar. This initiatives to share happiness and bridging FTKKP staff and local community.

THOSE WHO SPEND
THEIR WEALTHS IN
ALLAH'S CAUSE ARE
LIKE GRAINS OF CORN
WHICH PRODUCE
SEVEN EARS, EACH
BEARING HUNDRED
GRAINS

QURAN (2:261)







#### **ALUMNI OF BACHELOR OF CHEMICAL ENGINEERING TECHNOLOGY**

(Nurshafira Syazwani Binti Abu Hasan; Officer at Top Glove FMT Sdn. Bhd.)

Begin my journey as a QA trainee here in Top Glove with only basic knowledge about chemicals. Went through ups and downs, shed few tears, making memories and wonderful teams makes me want to pursue my career here in Top Glove. With this mindset, I trained myself to be more extrovert, talking to others and outshine the others which makes my supervisor notice my light and offer the position as soon as my internship end. Now, I'm here as a staff with more information to learns and hoping more flowers to grow.

#### ALUMNI OF BACHELOR OF MANUFACTURING **ENGINEERING TECHNOLOGY (PHARMACEUTICAL)-GRADUATED IN 2017**

Name: AMINUDDIN AZFAR BIN HASSAN ADLI Course: Bachelor of Engineering Technology (Pharmaceutical) with hons. (Graduated in year 2017) **Company: Nextgreen Global Berhad Current position: Site Safety Supervisor** 

> Growth is the only evidence of Life -John Henry Newman



#### **ALUMNI OF MASTER OF SCIENCE PROCESS PLANT OPERATION- GRADUATED IN 2021**

(Ts. Mohd Azlan Mat Ali: Senior Process Engineer at Lynas Malaysia Sdn. Bhd.)

As an experienced engineer who had worked for 12 years, i always thinking how can I refresh and took new knowledge in engineering until in 2019 I found out that UMP had a Master Program which collaborate with INSTEP which not only emphasize on theoretical but also practical. This had gave me an excitement to join and took up this Master Program. After 1 and half year, now i had became a graduated Master student in Process Plant Operation and throughout this journey, this course had opened up my mind and exposed me to a new knowledge that I had not been learned during my first degree.



#### **ALUMNI OF MASTER IN CHEMICAL ENGINEERING** WITH ENTREPRENEURSHIP - GRADUATED IN 2021

#### (Muhammad Daniyal Lim)

The integration of entrepreneurship courses with chemical engineering allows me to understand running a business better not only on the technicalities but in understandingbusiness jargon and systems. Furthermore, the syllabus for this program encourages flexibility in critical thinking and lifelong learning.

#### **STUDENT ACTIVITIES**

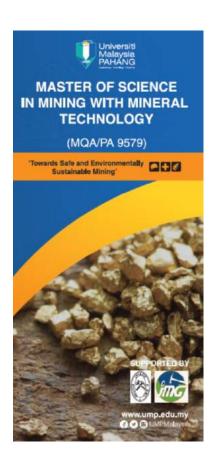
#### MALAYSIA DAY FORUM

15 September 2021 - Malaysia Day Forum was organized through the official CHEST social media site page (Facebook & Instagram). The forum that involved three invited panels, Mr. Mohammad Syafiq Ridzwan, Acting President of the Selangor State Youth Council, Mr. Ezwan Shah, Candidate of Calon Tokoh Siswa Kebangsaan & Alumni CHEST and Mr. Muhammad Akmal Zulhakim. **CHEST** Leadership & Core Values Exco session 2020/2021. The main objective of this forum is to give more understanding to students on the true meaning of independence and Malaysia Day celebrations. The forum also aims to provide exposure to students about the importance of being a competent Malaysian.





#### **MASTER BY COURSEWORK IN FTKKP**







Do come and join us!