



THE 7TH MECHANICAL ENGINEERING RESEARCH DAY

Satellite Event: Automotive Mini-Symposium 2020 (AMS'20)

MERD'20

▶ IDEA ▶ INSPIRE ▶ INNOVATE

16 December 2020 | Kampus Teknologi UTeM

<http://merd20.utem.edu.my>

A ONE DAY
INTERNATIONAL
SEMINAR

Jointly organized by:
Fakulti Kejuruteraan Mekanikal
Centre for Advanced Research on Energy

Co-organized by:
Graduate School of Engineering,
Nagoya University



The 7th International Conference and Exhibition on Sustainable Energy and Advanced Materials

Langkawi Island, Kedah - Malaysia



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- ❑ Persatuan Staf Akademik UTeM atau UTeMASA adalah satu-satunya persatuan yang mewakili staf Akademik dalam mesyuarat Majlis Bersama Jabatan (MBJ) UTeM.
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- ❑ Antara tujuan utama MBJ adalah untuk memperolehi kerjasama yang menyeluruh di antara Majikan & Pekerja. Ianya adalah mesyuarat untuk membincangkan hal-hal kebajikan staf yang diutarakan oleh wakil pihak Pekerja demi kebaikan UTeM.



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Sekiranya belum, dapatkan borang keahlian, isi dan emelkan kepada kami untuk tujuan rekod. Setelah borang diproses, pemotongan gaji akan dibuat (yuran daftar RM10 (sekali sahaja) & yuran bulanan sebanyak RM5).

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The 7th Mechanical Engineering Research Day (MERD'20) is organized by the Faculty of Mechanical Engineering (FKM) in association with the Centre for Advanced Research on Energy (CARE), Universiti Teknikal Malaysia Melaka (UTeM). Due to the COVID-19 pandemic, MERD is implemented virtually on 16 December 2020. This year, MERD is co-organized by the Graduate School of Engineering, Nagoya University, Japan. A new satellite event Automotive Mini-Symposium 2020 (AMS'20) is introduced this year.

The objective of MERD is for the scientists, scholars, researchers, engineers and students from Higher Educational Institutions, Research Institutions and Industries in the world to present findings of ongoing/completed original research activities, and hence foster research collaborations between the universities and the industries. The other objective is to introduce young researchers in the scientific field of mechanical engineering through poster presentations and publications, to offer mentoring through senior researchers/scientists, and to foster the building of networks through the informal style of the event.

MERD'20 covers 12 main themes, including Automotive Mini-Symposium 2020 (AMS'20), Additive Manufacturing, Advanced Materials and Processes, Computer Modeling and Simulation, Condition Based Maintenance and Monitoring, Energy Engineering and Management, Engineering Education, Mechanical Design and Optimization, Mechanical Vibration and Control, Structural and Mechanical Testing, Surface Engineering and Tribology, and Thermal and Fluids.

This year, 19 oral presentations and 169 poster presentations will be delivered during the event, which gives a total of 188 presentations. Of these 188 participants, 12% are International presenters from the following countries: United Kingdom, Taiwan, Nigeria, China, India, Indonesia, and Japan. Out of 167 Malaysian presenters, 49% of the presenters are from local institutions and agencies and 51% of the presenters are from UTeM. Meanwhile, the compilation of papers will be published in the Open Access e-Proceeding via www3.utm.edu.my/care/proceedings. The e-Proceeding is indexed by Google Scholar and will be submitted to Clarivate Analytics Conference Proceedings Citation Index™ for indexing consideration in Web of Science® coverage.

Assalamualaikum Wrt. Wbt. and Salam 1Malaysia,

It is my great pleasure to welcome all of you to the 7th Mechanical Engineering Research Day (MERD'20). MERD'20 will be implemented virtually due to the COVID-19 pandemic. MERD is organized every year and this is the seventh event. For this year, MERD is organized by the Faculty of Mechanical Engineering, UTeM in association with the Centre for Advanced Research on Energy (CARE), UTeM. This event will be implemented virtually on 16 December 2020. This year, MERD is also co-organized by the Graduate School of Engineering, Nagoya University.



MERD'20, with the theme, "*IDEA . INSPIRE . INNOVATE*", provides a platform for scholars, intellectuals, and professionals from various academic and industrial disciplines to address new challenges in mechanical engineering. This is in line with the increasing demand for innovative research ideas, design, optimizing, modeling, processing, and solutions involving real engineering problems which advocate the provision of rigorous study among distinct communities.

On behalf of the Faculty of Mechanical Engineering, UTeM, I would like to thank the organizing committee for their effort and hard work to ensure the success of MERD'20. Also, I would like to express my sincerest gratitude to the sponsors for being generous and sponsoring this event. To all participants, I hope you will have a fruitful event and you will join us again for MERD'21.

Wassalam. Thank you.



Dr. Ruztamreen Bin Jenal

Dean,

Faculty of Mechanical Engineering, UTeM



16 December 2020 (Wednesday) – Kampus Teknologi UTeM (Online)

08:30	Registration
09:00	Poster presentation (MERD'20) / Oral presentation (AMS'20)
12:00	Special talk: http://tiny.cc/merd20_talk (password: merd20) Invited talk 1: In-situ Observation of Friction Surface with Reflectance Spectroscopy Speaker: Professor Dr. Noritsugu Umehara (Nagoya University) Invited talk 2: Future of Safer Vehicle in ASEAN Speaker: Ir. Ts. Dr. Khairil Anwar Abu Kassim (MIROS)
13:00	Break
14:30	Closing ceremony & award presentation: http://tiny.cc/merd20_closing (password: merd20)
16:00	End



PROFESSOR DR. NORITSUGU UMEHARA

Department of Micro-Nano Mechanical Science and Engineering,
Graduate School of Engineering,
Nagoya University.

Short Biography

Dr. Noritsugu Umehara is a professor at the Department of Micro-nano Mechanical Science and Engineering, Nagoya University in Japan. He has interests in both fundamental and applied aspects of manufacturing and tribology, especially in the new polishing method of advanced ceramic using a magnetic field and water lubrication of advanced ceramics. He started his career at the Tohoku University in 1988 as a Research Associate at the Department of Mechanical Engineering before becoming Assistant Professor in 1993, Associate Professor in 1995, and moved to Nagoya University as Professor in 2003. He received a Bachelor's degree, a Master's degree and a Doctor of Engineering from the University of Tohoku, Sendai, Miyagi in 1983, 1985 and 1988. He has published more than 200 research papers in different journals and holds 6 patents on magnetic fluid grinding. Dr. Umehara received the JSME Young Engineering Award in 1991, 1995 LaRoux K. Gillespie Outstanding Young Manufacturing Engineer Award from the Society of Manufacturing Engineers in 1995, the F.W. Tayler Medal of the CIRP in 1995, and the 2010 JSME paper award. He is a member of the Japan Society of Mechanical Engineers (JSME), the Japan Society for Precision Engineering (JSPE), the Japan Society of Tribologists (JAST), and the Japan Society for Grinding. He is the Editorial Board Member of the Journal of Engineering Tribology, Proceedings of the Institution of Mechanical Engineers, Part J; Friction; Springer; and Jurnal Tribologi, Malaysian Tribology Society.

In-situ Observation of Friction Surface with Reflectance Spectroscopy

Reflectance spectroscopy can obtain the optical properties as reflective index and extinction coefficient, and the thickness of each layer in the multilayer optical model for contact surface. So we can analyze the properties of transformed layer and oil film. The carbonaceous coating such as Diamond-Like Carbon (DLC) coating and amorphous Carbon Nitride (CNx) coating is promising for high hardness, low friction property and affordability. Though it is reported that transformed layer is important to



show low friction, it is still unclear that transformed layer makes an effect on low friction. To clarify the effect of transformed layer of CNx on friction clearly, we proposed the in-situ observation method which observe the friction surface with a reflectance spectroscopy and measures friction force simultaneously. The reflectance spectrometer was set above the sapphire hemisphere attached at leaf spring so that reflectance spectrometer could measure the thickness, sp²/sp³ ratio and density of dangling bonds of the coating through sapphire hemisphere. From the result, it can be seen that estimated friction coefficients follow observed friction coefficients. Also this in-situ observation method with a reflectance spectroscopy was tried to use to know the condition of two phase lubricants which is the mixture of two lubricants. The two phase lubricants consist of the low and high viscosity base oils which are miscible at high temperature but not at lower temperature. However it is difficult to know the separation condition in the thin lubricant film during sliding. Experimental results showed the possibility of the separation of two lubricant in lubricant film with the reflectance spectroscopy.



IR. TS. DR. KHAILIL ANWAR ABU KASSIM

Director-General,
Malaysian Institute of Road Safety Research (MIROS).

Short Biography

Khairil Anwar Abu Kassim has been appointed as the Director General of Malaysian Institute of Road Safety Malaysia by the Minister of Transport Malaysia, The Honourable Datuk Seri Ir. Dr. Wee Ka Siong effective from 5 May 2020. He has been appointed to his role in response to his strategic leadership, both in research and administration. Khairil is the Secretary General of ASEAN NCAP, one of ten NCAP's in the world that encourage safer cars development in the market. In MIROS, he served as the Director of Vehicle Safety & Biomechanics Research Centre, one of the leaders in vehicle safety area that help researchers & engineers to realize their full potential in the safety system. To date, he has been supervising and developing multiple International and local research and development grants and projects in MIROS with a total worth RM 40 Million. On February 25th, 2010, MIROS has created the nation history by conducting Passenger Car Outdoor Crash Test, the first in Malaysia and South East ASEAN, this success story spread out to Europe, USA and others ASIAN countries. It was never in their mind, that country like Malaysia able to execute a crash test. Currently, the MIROS PC3 has conducted more than 100 crash tests since May 2012 and it is one of the official crash laboratories for ASEAN NCAP. In his junior years, Khairil left Okayama University of Science to devote his energies to several companies in Japan and Malaysia. It was his third job at Autoliv Hirotako that makes he choose the career of saving people life through safety equipment's. The vision than brought to MIROS, in a broader position, to enhance manufacturer's performance to produce a safer vehicle. Under Khairil's leadership, ASEAN NCAP mission continually improves towards establishing a reliable independent consumer information for safer cars. More manufacturers have increased their vehicle safety capacity and ability as a result of safety rating and strategies implemented by the team. It is well accepted that to enter the ASEAN market, the minimum required rating is now 4 star which confidently translate to reduction of road fatality. MIROS has recognized his commitment by awarding him the Excellent Service Award in his first full-service year in 2009 and 2016



together Most Impact Researcher Award in 2010. He is also receiving special awards for his dedicated works and commitment throughout his tenure. The opportunities to work at several corners of the world has given him a chance to expand his professional capacity throughout his life and career. However, the privilege comes with immense responsibilities and exciting challenge set by MIROS. Admittedly, he will devote himself until vehicle safety becomes standard, not as an option.

Future of Safer Vehicle in ASEAN

The New Car Assessment Programme for Southeast Asian Countries (ASEAN NCAP) had a humble beginning starting with a development of a crash lab costing about MYR 5 million. With only basic equipment needed to operate the lab, ASEAN NCAP was privileged to have valuable staff who are high spirited and motivated to work regardless of the condition in order to achieve the objective of being the first crash lab in South East Asia. To date, ASEAN NCAP has developed two protocols. The first was implemented during Phase I of ASEAN NCAP tests until 2016 and the second protocol is currently running starting from 2017 until 2020. Both of these protocols have different objectives to achieve. The objectives were based on the automotive and road safety scenario at that particular time. The current ASEAN NCAP protocol has definitely increased the vehicle safety level for the ASEAN region. Nevertheless, enhancements made to the new protocol will indeed make significant impact to the automotive scenario especially targeted for the emerging market like countries in South East Asia especially in relation to motorcyclist fatalities in the ASEAN Region.

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<https://rb.gy/c8ctft>

ORAL PRESENTATION LIST

ID	TITLE	PRESENTER	AFFILIATION
4	Effect blended mineral-vegetable oil on a diesel engine performance	Suhadi Jamil	Pekan National Youth Skills Institute
29	Comparative study on combustion and emission characteristics of ethanol and butanol oxygenates blend with diesel and biodiesel	Nurul Hanim Razak	Universiti Teknikal Malaysia Melaka
42	Effect of improving gravito-inertial force of the vehicle occupants in reducing severity of motion sickness	Nidzamuddin Md. Yusof	Universiti Teknikal Malaysia Melaka
43	Frequency-domain analysis of heart rate variability in passenger's motion sickness using fast fourier transform and autoregressive modeling	Juffrizal Karjanto	Universiti Teknikal Malaysia Melaka
44	Comparative evaluation of two peripheral information systems using motion sickness subjective rating	Juffrizal Karjanto	Universiti Teknikal Malaysia Melaka
45	Quantifying the automated vehicle passenger's level of comfort in the longitudinal and lateral direction	Juffrizal Karjanto	Universiti Teknikal Malaysia Melaka
53	An overview on aluminum metal matrix composite for automobile application	T. V. V. L. N. Rao	SRM Institute of Science and Technology
75	Proof of concept of the vibration pattern in inducing calming effect for autonomous vehicle's occupants	Nidzamuddin Md. Yusof	Universiti Teknikal Malaysia Melaka
77	Development of low-cost voice operated vehicle turn signal system for eco-car urban concept using arduino uno	Khairul Amri Tofrowaih	Universiti Teknikal Malaysia Melaka
92	Effects of DBD plasma actuator on air flow of automotive spoiler	Nurfarah Diana Mohd Ridzuan Tan	Universiti Teknikal Malaysia Melaka

ID	TITLE	PRESENTER	AFFILIATION
98	Electronic wedge brake model approximation analysis	Mohd Hanif Che Hasan	Universiti Teknikal Malaysia Melaka
100	Development of rear hazard lights system on vehicle after collision	Mohd Zakaria Mohammad Nasir	Universiti Teknikal Malaysia Melaka
129	Lane change and stopping maneuvers for emergency obstacle avoidance	Amrik Singh Phuman Singh	Universiti Teknikal Malaysia Melaka
178	Active front steering for passenger vehicle using Fuzzy-PID method	Mohd Khairi Mohamed Nor	Universiti Teknikal Malaysia Melaka
186	A review of environmental assessment on different levels of manufacturer-retailer relationship for integrated supply chain models	Mohd Idham Sabtu	Universiti Kebangsaan Malaysia
189	Failure detection in engine due to misfire using improved statistical analysis and machine learning	Nor Azazi Ngatiman	Universiti Teknikal Malaysia Melaka
220	Comparison of magnetorheological damper modelling using Gaussian ANFIS and generalized bell ANFIS algorithm	Ubaidillah Sabino	Universitas Sebelas Maret

POSTER PRESENTATION LIST

ID	TITLE	PRESENTER	AFFILIATION
2	Evaluation of the surface quality of ss316l cell plate for hho generator	Ajat Sudrajat	Universiti Teknikal Malaysia Melaka
3	Do engineering students and engineering technology students differ in STEM interest and career intention?	Siti Mistima Maat	Universiti Kebangsaan Malaysia
5	Effect heat input on a thin plate distortion lap joint using GMAW welding technologies	Saiful Sabdin	Universiti Teknikal Malaysia Melaka
7	An experimental investigation on the effect of pulse on time, voltage and wire tension on material removal rate and white layer thickness during machining of hard steel	Mohd Aidiil Shah Rahim	Universiti Teknikal Malaysia Melaka
8	Psychometric properties of intelligence quotient (IQ) items among female engineering students using dichotomous Rasch model	Mohd Effendi @ Ewan Mohd Matore	Universiti Kebangsaan Malaysia
10	Reassessing the construct of ISIS in measuring SQ among polytechnic students using exploratory factor analysis (EFA)	Mohd Effendi @ Ewan Mohd Matore	Universiti Kebangsaan Malaysia
11	The 360-degree teaching evaluation preferability with gender among TVET teachers using chi-square test for independence	Mohd Effendi @ Ewan Mohd Matore	Universiti Kebangsaan Malaysia
12	Exploratory factor analysis (EFA) in validating EQ constructs using USMEQ-i among polytechnic students	Mohd Effendi @ Ewan Mohd Matore	Universiti Kebangsaan Malaysia
13	Establishing factorial validity in Raven advanced progressive matrices (RAPM) in measuring IQ from polytechnic students' ability using exploratory factor analysis (EFA)	Mohd Effendi @ Ewan Mohd Matore	Universiti Kebangsaan Malaysia
14	The relationship of intelligence quotient (IQ) with academic performances for female engineering students	Mohd Effendi @ Ewan Mohd Matore	Universiti Kebangsaan Malaysia

ID	TITLE	PRESENTER	AFFILIATION
15	GRIT vs. academic performance: The power of polytechnic students to be academically GRIT-tinians!	Mohd Effendi @ Ewan Mohd Matore	Universiti Kebangsaan Malaysia
16	The associations of peer review and self-reflections in teaching assessment with accuracy and gender from TVET teachers' feedback	Mohd Effendi @ Ewan Mohd Matore	Universiti Kebangsaan Malaysia
17	The characteristics of quitters, campers and climbers of adversity quotient (AQ) on polytechnic students from gender perspectives	Mohd Effendi @ Ewan Mohd Matore	Universiti Kebangsaan Malaysia
19	Implementation of asynchronous video lectures in the experimental fluid mechanics course	Mohd Rusdy Yaacob	Universiti Teknikal Malaysia Melaka
20	Implementation of video-based instruction on the experimental work of experimental fluid mechanics course	Mohd Rusdy Yaacob	Universiti Teknikal Malaysia Melaka
21	Coconut shell: Thermogravimetric analysis and gross calorific value	Halim Ghafar	Universiti Teknologi MARA
22	Swirl intensity measurement in a straight pipe using LDA method	Nor Faizah Haminudin	Universiti Teknikal Malaysia Melaka
23	Weld formation of thin material using different convex angle shoulder in bobbin friction stir welding	Mohammad Kamil Sued	Universiti Teknikal Malaysia Melaka
24	Developing the solar water pump using arduino microcontroller for agriculture purposes	Nurul Muthmainnah Mohd Noor	Universiti Teknologi MARA
25	The effect of iso-butanol addition in algae-diesel fuel blends on diesel engine performance	Hazim Sharudin	Universiti Teknologi MARA

ID	TITLE	PRESENTER	AFFILIATION
26	Turbulence measurements in the developing region of a turbulent round jet using a software-driven laser doppler system	Mohd Rusdy Yaacob	Universiti Teknikal Malaysia Melaka
27	Laser power implication to the hardness of Ti-6Al-4V powder by using SLM additive manufacturing technology	Mohd Faizal Sadali	Universiti Teknologi Malaysia
28	Designing for structural durability in finite element analysis using CAD simulation	Nik Muhammad Azif Arifin	Universiti Kebangsaan Malaysia
30	Effects of aluminium honeycomb –filled tubes with various cross sections using finite element analysis	Noor Dina Ghazali	Universiti Teknikal Malaysia Melaka
33	22nm graphene FET design structure, fabrication and characterization	Izwanizam Yahaya	Universiti Teknikal Malaysia Melaka
35	Ergonomic workstation assessment for online learning using rapid upper limb assessment (RULA)	Wongani Salima	Universiti Teknikal Malaysia Melaka
37	Performance of hybrid composite brake pad as compared to commercial brake pad	Edynoor Osman	Kolej Kemahiran Tinggi MARA Masjid Tanah
38	Stiffness behaviour of pineapple leaf fibre/poly lactic acid composites under high stress fatigue conditions	Zaleha Mustafa	Universiti Teknikal Malaysia Melaka
39	Comparison analysis of the PID controller and fuzzy logic controller (FLC) for a newly developed remotely operated vehicle (ROV) depth control	Mohd Shahrieel Mohd Aras	Universiti Teknikal Malaysia Melaka
40	Design comparisons of compact autonomous railway inspection vehicle (CARIV)	Mohd Shahrieel Mohd Aras	Universiti Teknikal Malaysia Melaka

ID	TITLE	PRESENTER	AFFILIATION
47	Development of a wearable glove for a sign language translation	Nurbahirah Norddin	Universiti Teknikal Malaysia Melaka
50	The effect of chemical treatment on the tensile behavior of kenaf fiber using Box-Behnken design	Mohamad Ikhwan Ibrahim	Universiti Teknologi Malaysia
54	Effects of drilling penetration angle and cutting tool geometrical features on surface roughness	Mohd Fairuz Jaafar	Universiti Teknikal Malaysia Melaka
55	Numerical failures of the solder joints in the electronic package under thermal reliability process	Aliff Farhan Mohd Yamin	Universiti Teknologi MARA
56	Ring compression test of aluminum alloy AA6061 using palm mid olein as a metal forming lubricant	Aiman Yahaya	Universiti Teknologi Malaysia
64	Parameter estimation of microalgae growth kinetic model by Levenberg-Marquardt method	Ling Kim Sia	Universiti Tun Hussein Onn Malaysia
65	Experimental of friction characteristic properties of TiN coating	Effendi Mohamad	Universiti Teknikal Malaysia Melaka
66	Effects of annealing on punches head and the repurcussion on the product lifecycle and cost	Siti Nurhaida Khalil	Universiti Teknikal Malaysia Melaka
67	Liquid film thickness effect on heat transfer at solid-liquid interfaces	Abdul Rafeq Saleman	Universiti Teknikal Malaysia Melaka
68	Energy harvesting power circuit design that applied on quadcopter system	Khairuddin Osman	Universiti Teknikal Malaysia Melaka

ID	TITLE	PRESENTER	AFFILIATION
69	Effect of sintering temperature on physical properties of sintered green glass ceramic composite (GCC)	Masturah Mesri	Universiti Teknikal Malaysia Melaka
70	Optimization of H-type Darrieus VAWTs: A preliminary review	Muhamad Fadhli Ramlee	Universiti Kebangsaan Malaysia
71	Development of new container for oyster grow-out culture	Arzul Arifin	Universiti Teknikal Malaysia Melaka
72	Design, analysis and manufacture of low-cost automatic sliding gate system using tap water pressure	Mohd Basri Ali	Universiti Teknikal Malaysia Melaka
73	Effect of ZnDTP and soot in lubricant oil on wear	Tomoyasu Watanabe	Nagoya University
81	The tribological property of a-C:H coating under lubrication with additives having phosphate and hydroxy group	Takumi Kani	Nagoya University
84	Design and development of domestic cyclone dust collector system	Nurfaizy Abdul Hamid	Universiti Teknikal Malaysia Melaka
85	Polyvinyl alcohol electrospun nanofibre-coated vehicle cabin air filter	Nurfaizy Abdul Hamid	Universiti Teknikal Malaysia Melaka
86	Effect of electrospinning distance and applied voltage on the production of polyacrylonitrile electrospun fibres	Nurfaizy Abdul Hamid	Universiti Teknikal Malaysia Melaka
87	Android based digital steganography application using LSB and PSNR algorithm in mobile environment	Shayla Islam	UCSI University

ID	TITLE	PRESENTER	AFFILIATION
88	Design and development of 3D printer filament extruder	Muhamad Aminur 'Ilman Zainal Aris	Universiti Teknikal Malaysia Melaka
89	Design modification by integrate product conceptual into a computer aided design approach	Nik Muhammad Azif Arifin	Universiti Kebangsaan Malaysia
90	RFID based student attendance system	Abdul Samad Shibghatullah	UCSI University
91	The influence of STL data quality on the surface roughness of 3D printed Melaka historical artifact	Syahibudil Ikhwan Abdul Kudus	Universiti Teknikal Malaysia Melaka
93	Computational assessment of frictional force encountered by NiTi wire in three-point and three-bracket systems	Muhammad Fauzinizam Razali	Universiti Sains Malaysia
94	Road crack detection using modification of threshold values in Canny algorithm	Zuraini Othman	Universiti Teknikal Malaysia Melaka
95	Copper/carbon nanotubes composites: Physical characterization	Nor Shamimi Shaari	Universiti Teknologi MARA
97	The impact of computational domain on heat transfer solution of flow across tube banks with vortex generators	Fatimah Al-Zahrah Mohd Sa'at	Universiti Teknikal Malaysia Melaka
99	Turbulent convective heat transfers of sic/water through circular pipe equipped with modified twisted tape	Sa'Adah Ahmad Sowi	Universiti Malaysia Perlis
101	Optimization of dimple depth parameter in photochemical texturing of textured carbon steel surface	Nor Ashwani Abd Rahim	Universiti Teknologi Malaysia

ID	TITLE	PRESENTER	AFFILIATION
102	Exhaust emissions of a diesel engine fuelled with iso-butanol additive on algae-diesel blends	Muhd Azhar Zainol	Universiti Teknologi MARA
103	IoT based emergency power shut down switch for industrial machines	Muhammad Sufyan Safwan Mohamad Basir	Politeknik Mukah Sarawak
105	Emissions characteristics of a single cylinder diesel engine using algae-diesel fuel blends with POME additive	Hazim Sharudin	Universiti Teknologi MARA
107	Lift performances of Neo-Ptero UAV	Noor Iswadi Ismail	Universiti Teknologi MARA
108	The modification of SS316L electrode plate surface texturing to improve hydrogen production on HHO generator	Asmawi	Universiti Teknikal Malaysia Melaka
109	Effect of 2-hydroxyethylammonium formate ionic liquid on poly(vinyl alcohol)/n-methylene phosphonic chitosan based membrane for fuel cell application	Kee Shyuan Loh	Universiti Kebangsaan Malaysia
110	Contact interaction mechanism of axially compressed conical shell with non-uniform axial length	Olawale Ifayefunmi	Universiti Teknikal Malaysia Melaka
111	Pulsatile blood flow of a bileaflet mechanical heart valve with vortex generator using CFD	Nursyaira Salleh	Universiti Teknikal Malaysia Melaka
112	Comparison of coated and uncoated drill bit on the drilling quality of CFRP/AL7075-T6 stacked materials	Muhammad Hafiz Hassan	Universiti Sains Malaysia
113	Effect of surface roughness on skid resistance of silica filled epoxidised natural rubber 25 tyre tread compound	Ahmad Kifli Che Aziz	Universiti Teknologi Malaysia

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