Session 1

Date: November 26, 2019

Time: 11am – 4pm

Venue: Segamat Room

Session Chair: Dr. Helmi Adly Mohd Noor

Co-Chairperson: Dr. Zulzamri Salleh

No	Paper ID	Presenter
1	IRCIE-2019-LOM-128	**Factors Affecting Consumer Purchase Intention toward Green Electrical Product** **Ahmad Fakhruddin Ahmad Dailami**;Jimisiah Binti Jaafar; Che Musa Bin Che Omar; Noorfarrisaqmal; Muhammad Ali *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** The purpose of this study is to find out the factors that affecting consumer purchase intention toward green electrical product in Johor Bahru. The development of green product in Malaysia is increasing. There are awareness from consumer regarding the importance to protect the environment. This research will study the relationship between government's role, environmental concern and environmental knowledge with consumer purchase intention toward green electrical product. Current research is conduct in Johor Bahru as it environment as a major cities in Malaysia. The respondent of the research will be the customers that come to electrical department in Tesco store in Johor Bahru. Researcher will analyze the data by using confirmatory Factor analysis in order to find out the relationship among the variable.
2	IRCIE-2019-ET-131	**Comparison of Transient Response Between Controllers in Shell and Tube Heat Exchanger System Simulation Studies** **Nuraisyhah Azhar**; Mohd Ismail Yusof *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** Technology advancement in process industries widely involves heat transferring using heat exchanger unit. Heat exchanger unit generally used in chemical processes, which is directly related to energy consumption. Actual purpose of heat exchanger is transferring heat source from hotter fluid to cooler fluid. The main control system challenge for heat exchanger is controlling the temperature according to the control demand (setpoint). This is due to some disturbance phenomena such as leakage, temperature-dependent flow and contact resistance. Therefore, the performance of different control techniques such as feedback PID and feedback-plus-feedforward-PID controller are proposed to regulate the temperature of outlet fluid of a heat exchanger. Then, system performance is evaluated upon excitation of a unit step response. Overall heat exchanger system is modeled using first principle and simulation result of two types of controller is compared. From the simulation results, it is found that the combination of feedback and feedforward controller provides significant increase performance of the overall heat exchanger system.

3	IRCIE-2019-ET-132	**Design and Simulation of PID Controller for PH Neutralisation Process for Waste Water Treatment Plant** **Nur Amyrah Fadzlullah**; Mohd Ismail Yusof *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** PH control system plays an important role in a wide range of industrial applications for waste management. Untreated wastewater generally contains high level of organic materials, numerous pathogenic microorganisms which raising concern in environmental and health hazards. The high non-linearity and time varying in pH neutralization process and the uncertainty of the plant dynamics are the key challenges of the control systems. There are many sophisticated PID tuning method, however conventional tuning procedure remains effectives in industries. The overall control scheme involves controls of flow rates of acid and base solutions. Ziegler Nichols method tuning has been developed for pH neutralization control model. This paper elaborates the performance transient response for pH neutralization process by using empirical techniques through the MATLAB simulation. A result of servo response of pH system is presented and compared.
4	IRCIE-2019-ET-127	**Smart Storage with the Internet of Things and Voice Recognition** **Dr. B. Muthu Senthil;** Dr. V. Dhanakoti ; Sabarish.J ; Sonali.S *Anna University, India* **Abstract:** In the era of automation ruling the world by coming into each and every field, now it has entered into the field of Storage. Automation has reduced the time complexity and the manual power in the entire field it has intruded. And likewise it will reduce the time complexity and tracking of the stored items and retrieving the same from the storage. This model of storage can be done with the help of Internet of Things, Cloud computing and machine learning. Cloud computing plays a major role due to its robustness and its portability which does give an extra edge in the business. To survive in business today you need to make smart choices. Storage can be a small business saviour. This model can be used in many fields like medicine, business etc. Tracking and retrieving in these large amounts of storage can be made easier with the help of database.
5	IRCIE-2019-ET-149	**Comparative Study on Crashworthiness Characteristics and Failure Mode of Composite Tubes** **Munir Alkbir**; Fatihhi Januddi ; S. M. Sapuan; A. Endut; S. B. Mohamed; M. S. E. Kosnan *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** The current study describes an experimental study of the energy absorption capacity of woven plain weave/epoxy hexagonal tubes. A series of experiments were performed on composite hexagons with different hexagonal angles between 35° and 55° in aspect ratios L / t = 70 and 10° angular increments. The effects of mandrel geometry on the crashworthiness performance of the fabric plain weave/epoxy hexagonal tubes and their effects on energy absorption capabilities have been observed. The result showed that the hexagonal table with β = 45° exhibited the highest energy absorption capability as well as the average crashing load. As a result, the hexagonal table with β = 45° showed the highest energy absorption capacity as well as the average crashing load. In addition, the failure mode is recorded in progressive failure mode. On the other hand, the results are compared to other composite tubes, showing that the material strongly affects

		energy absorption as well as geometry.
6	CONFERENCE-2019-EAS-103	**The Relationship between Customer Education and Service Quality on Customer Knowledge: A Study on Islamic Banking in Malaysia** **Khairul Firdaus Adrutdin**; AP Dr Kamisan Gadar; Jimisiah Jaafar; Dr. Nur Syafiqah A. Rahim; Sallaudin Hassan *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** Customer knowledge (CK) in Islamic banking services is generally low and this has affected the customers' perception and their choice criteria. It is important that the initiatives for customer education (CE) to be deliberately strengthened in order to increase the customer knowledge (CK) as well as customer satisfaction (CS). The value created through the customer education (CE) initiatives and increased of customer knowledge (CK) would help to promote enhanced customer satisfaction (CS) in Islamic banking perspective. On the other hand, the inclusion of service quality (SQ) dimensions are equally important as the delivery of knowledge to the customers will be more effective since the service quality (SQ) is still the tenet for good and quality performance in any business organizations. Thus, this conceptual paper will dissect the dimensions that involved in the relationship of customer education and service quality with customer satisfaction.
7	IRCIE-2019-ET-150	**Surface Porosity Enhancement Of Activated Carbon By Synthesizing Kenaf Fiber (A Literature Review)** **S.N. Zulaikha;** M.F.M. Alkbir; Fatihhi Januddi; Fatin Ayuni MS *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** Natural fiber (KF) such as kenaf has been used in different industrial applications. Recently, natural fiber has drawn the interest of researchers, engineers and scientists as an alternative element to increase the performance of the adsorption process. The use of kenaf as adsorbent is seen as an attractive and innovative method. Thus, it has been used for various adsorption applications. Due to its high specific strength, low-cost resource, environmentally friendliness, and good structural rigidity, kenaf fiber could be used in a substantial scale of applications. Previous studies focused on how different types of activated carbon affected the pore volume distribution. The studies also showed two different elements which are activated carbon (AC) from bone char and kenaf fiber works wonder discretely. The properties of kenaf fiber which are considered to be less harmful, environmentally friendly, tolerably work under a wide range of degrees and humidity levels, easily accessible, cost-effective and have porous structure make kenaf fiber as a convenient element to enhance the porosity of activated carbon. Furthermore, the overall properties of synthesized activated carbon (SAC) are depended on the value of ash content, moisture content, pore-volume, fixed carbon determination, and bulk density. The extent of porosity modification of the SAC will be determined by the synthesizing of AC with KF to help the development of surface porosity and pore volume. The performance of SAC could be determined from the analysis from Langmuir and Freundlich adsorption isotherms.
8	CONFERENCE-2019-EAS-116	**Application of Empirical Mode Decomposition with Wavelets Support Vector Machine in Time series Data** **Rafidah Ali**; Ani Shabri; Erni Mazuin

		Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC) **Abstract:** This paper mainly forecasts the tourist of Thailand come to Malaysia. We propose a three-stage technique that combines the empirical mode decomposition (EMD) with wavelet methods and support vector machine model. We use the proposed technique, EMD_WSVM to forecast two ASEAN country tourism time series. Detailed experiments are implemented for the proposed method, in which EMD_WSVM, WSVM and SVM methods are compared. The proposed EMD_WSVM model is determined to be superior to the other methods in predicting the number of tourist arrivals.
9	CONFERENCE-2019-EAS-119	**The Role of Emotional Intelligence in Promoting Environmental Friendly Behaviour in Organization** **Faiq Aziz**; Nur Syafiqah Binti A. Rahim *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** The concern regarding the environmental degradation has become one of the main topics all around the world. However, the progress in solving the issue remained sluggish. Preserving the environment can only be done by changing individuals' behaviour towards environmental friendly in addressing the problem of the environmental degradation leading towards organizational sustainability. Nevertheless, the existing models pertaining to environmental friendly behaviour in the workplace is not sufficiently taken into account in the current studies. Considering this, the present study extends the Theory of Planned Behaviour (TPB) that identifies the role of Emotional Intelligence (EI) in promoting environmental friendly behaviour in the universities in Malaysia. This model proposes that EI as the mediator between intention and behaviour in TPB construct. This proposed model includes 5 hypotheses and is based on the Theory of Planned Behaviour. A total of 420 questionnaires are distributed among six universities in Malaysia (Klang Valley area) which yielded 344 usable questionnaires to proceed for further analysis. The partial least squares based structural equation modeling (PLS-SEM) was used to analyze the data. The results indicate that out of all 5 proposed hypotheses, 4 of them are supported while the remaining 1 are not supported. The study findings suggest that, in order to achieve the organizational sustainability, EI play significant roles in promoting environmental friendly behaviour in the universities. Overall, this study proposes and verifies an extended model of the TPB in promoting environmental friendly behaviour. It reveals positive results in not only having a theoretical significance but also enhancing the understanding of the employees' behaviour in universities.
10	CONFERENCE-2019-EAS-120	**Assessment of Gamma Radiation Dose Rate Associated with Artisanal Goldmine Sites at Northern Zamfara State, Nigeria** **Nuraddeen Garba**; Christopher Odoh Mmaduabuchi; Prof. Rabiu Nasiru; Prof. Madya Muneer Aziz Saleh *Ahmadu Bello University, Nigeria* **Abstract:** This study assessed the gamma radiation dose rates associated with artisanal goldmines at Northern Zamfara State, Nigeria. Measurements of gamma radiation dose rates in the area was carried out using a portable survey meter, Inspector Alert and the coordinates of each point was recorded using a global positioning system. A total number of 166 average measurements were taken with the survey meter held at 1 m above the ground, with at least five readings taken at each location in order to minimize error. The mean GDR rate of the study area was found to be 32 nGy h-1 which is less than the world average value of 59 nGy h-1.

		Kaura Namoda local government area has the highest mean value of GDR rate of 38 nGy h-1, while Bakura local government area has the lowest mean value of GDR rate of 28 nGy h-1. Radiological health hazards; outdoor annual effective dose rate, mean population weighted dose rate, annual collective effective dose, lifetime dose and excess lifetime cancer risk were computed as 0.04 mSv y-1, 32.45 nGy h-1, 59.33 Sv y-1, 2.75 mSv, and 1.38 × 10-4 respectively.
11	IRCIE-2019-EAS-80	**Using Learning Objects as a Triggers for PBL in Industrial Technology (Civil Engineering) Course** **Arihasnida Ariffin**; Ariffin. A; Hamzah, N; Rubani, S N K.; Zakaria, N; Subramaniam, T E *Universiti Tun Hussein Onn Malaysia* **Abstract:** The study offers a comprehensive and systematic analysis on perception the need of learning objects as a triggers for PBL method in Industrial Technology (Civil Engineering) course. Learning objects is defined as an element of a new type of computer based instruction grounded in the object-oriented paradigm of computer field. The research design is a case study which consists of quantitative method. Valid instruments through questionnaire have been applied to 32 lecturers in this study. The results data was divided according to learning object and computer-delivered application to use learning objects in engineering classroom. Using the SPSS 16.0, the frequency, mean and percentage from data was obtained. At the end of this study, the result shows that lecturer have positive perception in learning objects use as a triggers for PBL method in Industrial Technology (Civil Engineering) course. Video element (mean=4.05) got the highest mean score on perception the need of learning objects. The lecturers also gave different view on learning objects using on PBL. It is reasonable to conclude that learning objects is an effective and suitable triggers tool in PBL method suited with higher education environment.
12	CONFERENCE-2019-LOM-101	**An Exploratory Study On Logisticians Competency: A Malaysian Perspective** **Dazmin Daud;** Wardatul Hayat Adnan; Bahri Mahmud *UCSI University* **Abstract:** The present study is to pursue and enumerates the importance of competency amongst Malaysian logisticians. The present study drives to cluster the measurements of competency variable among logisticians in Malaysia. Self-administered questionnaire were employed for data collection process. A quantitative study employed to the present study. Self-administered questionnaire distributed to 244 logisticians representing the organization involving upper management to lower management. The underlying factor structure were determine using Exploratory Factor Analysis (EFA). Moreover, Confirmatory Factor Analysis (CFA) were engaged to verify its competency factor structure among logisticians. Outcomes indicate that the measurement model fits the data (chi-square p value < 0.001; comparative fit index [CFI] = .961; root mean square error of approximation [RMSEA] = 0.56.The final 12-items scale were accepted in the present study with acceptable factor loading ranging 0.53 – 0.77. Findings will contribute towards the advancement of logistics curricula by Malaysian higher education institutions and aid to improve Malaysian logisticians in the future.
13	IRCIE-2019-EAS-81	**Triggers in PBL Using Animations and Graphics to Enhance Self-Directed Learning Readiness Among TVET Students** **Arihasnida Ariffin**; Ariffin, A; Hamzah, N; Rubani, S N K; Zakaria, N; Subramaniam, T E

		Universiti Tun Hussein Onn Malaysia **Abstract:** Problem Based Learning (PBL) is a student-centered learning which is students learn about content through experience in trigger material. The purpose of this study was to examine the effects of PBL using graphic triggers' and animation triggers' to enhance students' essential skills in TVET such as Self-directed Learning Readiness. Self-directed learning support PBL method that student have ability to manage learning consist understand, monitor, evaluate and reflect their own learning. In order to achieve this end, a sample of 68 students in the field of TVET who enrolled Engineering Drawing course was selected. Subject were randomly assigned as a two experiment group which is PBL using graphic triggers' (PBL-G) and PBL using animation triggers' (PBL-A). Self-Directed Learning Readiness Scale (SDLRS) instrument was administrated by three times (pre-test, post-test and post-test two). Data were analyzed by Univariate Analysis of Covariance (ANCOVA) and Univariate Analysis of Covariance (ANCOVA) repeated measures. The results showed that the Self-directed Learning Readiness mean score for PBL-A group was significantly higher than result of pre-test mean score. Subsequently, the results of two-way repeated measure ANCOVA tests revealed that students who were taught in PBL-A group enhance skill of Self-directed Learning Readiness significantly better than students who were taught in PBL-G group.
14	CONFERENCE-2019-ET-93	**Improve Public Safety at Low Head Dams in Malaysia** **Siti Natasha Malik Fesal**; Mas Fawzi ; Mohd Rizan *Universiti Tun Hussein Onn Malaysia* **Abstract:** Low head dams can cause dangerous counter currents near the downstream face of the structure. Fatalities at low-head dams with such currents, often referred to as "drowning machines," are poorly documented in Malaysia history. Emergency rescues at low head dams can be hazardous to rescue personnel because of the reverse roller phenomenon (hydraulic). In addition, Malaysia has published Malaysia Dam Safety Management Guidelines (MyDAMS) of 2017. The primary purpose of the guidelines is to raise awareness, generate interest, and educate the general public and decision makers regarding these dangerous structures and the need for remediation. Finally, MyDAMS highlight technical strategies required for dam safety management and the roles and duties of the key players involved inclusive Dam Owner's dedication to safety programs, change management, and the provision of sufficient economic and human resources. the needs to raise awareness of the potential impacts among professionals and interventions of the dam.
15	CONFERENCE-2019-EAS-99	**Assessing the Causal Effect of Service Quality, Corporate Image, Satisfaction and Loyalty among the Higher Learning Institutes (HLIs) of Technical and Vocational and Education (TVET) Student** **Sallaudin Hassan**; Mohd. Farid Shamsudin; Muhammad Asyraf Hasim; Ishamuddin Mustapha; Athirah Shukri; Rahmat Roslan; Mohamad Ikbar Abdul Wahab; Khairul Firdaus Adrutdin; Jimisiah Jaafar; Suhana Mohamed; Fairul Anwar Abu Bakar *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** The 11th Malaysia Plan (2016-2020) highlighted the important and challenges of higher education sectors in improving the quantity and quality of the graduate in meeting the demand for skilled workers to support the industry. However, the main challenge in the higher education industry is to attract and ensure student loyalty especially in Technical and Vocational Education and

		Training (TVET). Thus, the main purpose of this study is to empirically assess the causal effect between service quality, corporate image, satisfaction and loyalty in Higher Learning Institutes (HLIs) of TVET. Stimulus-Organism- Response (SOR) model was used to conceptualize the relationship between the constructs. The study was conducted at Universiti Kuala Lumpur (UniKL), one of biggest TVET HLIs in Malaysia. By, using purposive sampling method, 413 questionnaires were distributed to final year students. Data analysis was done using PLS-SEM method. This study revealed that there is a direct and significant effect between service quality, corporate image, student satisfaction and loyalty. The mediating test found that, the student satisfaction partially mediate the relationship between service quality and corporate image with student loyalty. Future research is suggested to extend the scope of research at non-TVET area in exploring new discovery.

Session 2

Date: November 26, 2019

Time: 11am – 4pm

Venue: Ledang Room

Session Chair: Dr. Mohd Al-Fatihhi Mohd Szali Januddi

Co-Chairperson: Dr. Sallaudin Hassan

No	Paper ID	Presenter
1	IRCIE-2019-EAS-25	**From Academia to Ngo: The Role of Repusm in Providing Alternative Education for Rohingya Refugees' Children in Penang Island** **Aizat Khairi** *Universiti Kuala Lumpur Malaysian Institute of Marine Engineering Technology (UniKL MIMET)* **Abstract:** Rohingya refugees are Muslims from Myanmar (Burma). They are forced to flee across the border of their country of origin due to the persecution of the government and the abuse from the locals Buddhist. This desperate conditions leave Rohingyas people no choice, except to be refugees. Unfortunately, lives as refugees are not easy especially in Malaysia because the host government are not recognized them. But, the government still allow the United Nation High Commissioner of Refugees (UNHCR) to assist the Rohingyas and other refugees based on humanitarian aspect. However, the Rohingyas are lives in uncertainty because the government is not responsible to assist them. So, other parties in Malaysia took some initiatives to aid them from several aspects, including the Research and Education for Peace Unit, School of Social Sciences, Universiti Sains Malaysia (REPUSM). This particular department is from academic background that strives to assist the Rohingya in Penang Island. But, as an academic institution, helping Rohingya refugees is challenging because of certain difficulty. Therefore, in order to overcome the problems the REPUSM took the alternative way to create some foundation body and register it as non-governmental organization to have a better operations for the sake of Rohingya refugees.
2	CONFERENCE-2019-ET-104	**Potential Detection of Chemicals using Fiber Optic Microfluidic Sensor**

		Zurina Zainal Abidin; Liew Mun Ngar; Firdaus Kamuri *Universiti Putra Malaysia* **Abstract:** Chemical sensors have been applied in in various aspects and fields. The integration of innovative microfluidic system in the biosensors offer a development of the device with better performance, such as reduced sample volume, decreased processing time, low cost analysis, low reagent consumption and also easy to use. These enables microfluidic device to be used in food industry, medical field and environmental control. There are various materials that can be utilised in the fabrication of microfluidic device. In this study, the dry film resist is chosen as the material to be used to fabricate the microfluidic device. The fabricated microfluidic device is investigated and evaluated on its performance in terms of sensitivity, reproducibility, response time and detection limit by using two different types of chemicals, which are Nickel(II) Nitrate Hexahydrate and Cobalt(II) Sulphate Heptahydrate. Results obtained show that the microfluidic device produces satisfactory detection towards all two types of the chemicals in terms of sensitivity, repeatability and response time. The response time towards Nickel(II) Nitrate Hexahydrate and Cobalt(II) Sulphate Heptahydrate are 77 s and 101 s respectively. The detection limit of the device towards both Nickel(II) Nitrate Hexahydrate and Cobalt(II) Sulphate Heptahydrate is around 0.1 mol/dm3 .
3	CONFERENCE-2019-ET-90	**Wireless Power Transfer via Magnetic Resonant Coupling by Using Printed Circular Coil** **Kang Chia Chao**; Chia Yang Kang *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** Nowadays, wiring connections are slowly fade out and replace with wireless connection due to the inconvenient of installing wiring connection in the wall or exposes to outside. Lately, the demand of wireless charging mobile phone or even charging by wireless in the car is attracted attention and the statistic shows that it is increasing rapidly. These paper proposed by using planar type spiral coil structure method to transfer the electrical signal energy to receiver part so as to act as wireless charging. It represented by 2 parallel FR4 printed circuit board that with the layout of planar spiral coil mutually coupled together in the free space. Analysis of electromagnetic transfer between both spiral coil and the resonant frequency was compute by coupled inductance theory. Simulations by using Advanced Design Systems based on coupling theory shows that when the air gap distance is changing, it will affecting the electromagnetic coupling efficiency of the wireless electromagnetic charging.
4	IRCIE-2019-ET-28	**Effect of Stress Distribution on Transverse and Longitudinal Framing in Cargo Ship Using FEA Approach** **Zainul Azhar Zakaria**; Khairul Nisak Md Hasan; Nagur Aziz Kamar Bashah; Muhammad Firdaus Khoirunnizam; Amirul Hakim Arifuzzaman; Mohd Nabil Abdul Razak; Mohamad Nasri Bin Johari *Universiti Kuala Lumpur Malaysian Institute of Marine Engineering Technology (UniKL MIMET)* **Abstract:** A cargo ship's hull is made up of bent plates that are not stiffened. The hull can be strengthened by the structural member of the transverse or longitudinal framing system. Frames are strengths member that acts as integral parts of the ship girder when the ship exposed to the longitudinal and transverse stresses. One of the stresses is coming from the load by the container that the cargo ships carry. This research was conducted to analyse how the load does from the container

		affecting the total deformation and the stress distribution on the transverse framing system model. The analysis of model was using finite element analysis method. Finite element analysis is a numerical technique for solving engineering issues with complex loadings, geometries and material properties. The simulation results of equivalent (von-Mises) stress and total deformation will be compared with the Germanisher Lloyd rule. The result of total deformation and equivalent (von-Mises) stress must not exceed the value stated by Germanischer Lloyd rule. If the value of stress exceeds, it is considered a failure. All the results are not exceed the limit and is acceptable.
5	CONFERENCE-2019-ET-88	**Harvesting Energy from an Exhaust System using High Temperature Thermoelectric Material** **Sirajeldeen Ahmidina**; Fadhilah Mohd Sakri *Universiti Kuala Lumpur Malaysian Institute of Aviation Technology (UniKL MIAT)* **Abstract:** Many systems in the aircraft are powered by the normal generator that is existing in the gas turbine engine. However, some of the systems such as the A/C auxiliary charging system (USB) are overloaded. This thing leads the APMS to isolate the USB system in order to save the power of the main systems. Thus, this research presents the way of harvesting the energy from the exhaust system using a high- temperature thermoelectric material. The purpose of this research is to design and test the thermoelectric generator in the exhaust area of the gas turbine engine to see whether it can power the A\C auxiliary charging system individually. This system consists of mechanical and electronic components including 14 thermoelectric generators that are tested under several numbers of temperature and the interfaces to the exhaust system of the gas turbine engine. The gas turbine engine whose operating conditions was used for this research is based in Universiti Pertahanan Nasional Malaysia (UPNM). In this study, the highest voltage which is 10V is produced at the temperature of 250 degrees Celsius during the 14 TEGS experiment. This amount of voltage is too high for A/C auxiliary charging system, so a voltage regulator is used in order to convert the voltage into the optimum amount. However, this amount of voltage can be increased by increasing the number of the TEGs and the temperature. As can be seen, this project will give an advantage to the user such as the airlines to utilize and convert the wasted heat that is existing in the exhaust section into useful renewable energy.
6	IRCIE-2019-EAS-84	**General Skill Domain in Industrial Training Currency using Fleiss Kappa Method** **Normah Zakaria**; Mohd Shahzuan Ghazalan; Nur Izeanty Hamidon; Norhasyimah Hamzah; Arihasnida Ariffin; Siti Nur Kamariah Rubani *Universiti Tun Hussein Onn Malaysia* **Abstract:** The purpose of this research is to obtain the most appropriate generic skills element agreement during the training industry to meet industry needs. The design used is a sequential exploration using a mixed method approach consist document analysis and questioner. The sample of this study involved 8 experts consisting of 4 industry representatives and 4 academic representatives. The findings using qualitative methods by analysing MQF 2018 documents report that 14 generic skills elements are identified. Whereas, the findings using a strongly correlated method by analyzing Fliess Kappa are used to measure the most appropriate generic skill element index in implementing activities. The findings show that 3 generic skills that are not suitable to be applied in the curriculum training industry based on the agreement experts include entrepreneurs, ethics and integrity as well as continuous learning skills from 11 generic elements of skills. The researcher hopes that the findings can be utilized by the higher education as a

		guide in the development of a generic skills curriculum that is more focused on training.
7	CONFERENCE-2019-ET-110	**Leadership Roles and Attributes in the Lean Healthcare Implementation Framework: A Systematic Literature Review** **Rahmat Roslan Buang**; Khairanum S.; Mohamad Ikbar A.W.; Mohd Amran M.D; Zalina L.; Sallaudin, H *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Background:** Over the last decade, healthcare organizations around the world have adopted Lean philosophy to reduce wastages and to improve flow efficiency in the patient flow processes. Although the application of Lean philosophy in the healthcare environment is relatively new as compared to other industries, there already exists a considerable amount of literature on the topic. **Purpose**: This paper is to investigate leadership roles and attributes in the lean healthcare implementation framework by analysing existing empirical studies available in the reputable databases. This article is one of the first attempts to classify leadership roles and attributes in the lean healthcare implementation framework. **Data sources:** A review was performed in Scopus, PubMed and Web of Science. This article structures, analyses and interprets data from empirical articles on Lean Healthcare implementation frameworks from 2009 through 2018. **Study selection:** Peer reviewed articles published in English language were selected. In identification phase, 142 articles were identified through the database searching. Eighty one articles passed the literature screening phase. From there, 48 articles were eligible for full article review. Finally, 22 articles were included for the systematic review exercise. **Data extraction:** Papers were considered if they regarded lean healthcare as the improvement methodology and discussed leadership roles and attributes in the lean implementation journey. **Results of data synthesis:** Twenty two articles were included in the final analysis. The critical leadership roles in the implementation framework includes leading culture for lean implementation, develop people, share success stories and accomplishment and recognize and reward the lean team. Notable leadership attributes emerged from the review includes effective communication, active participation to show support and facilitates resource prioritization. **Conclusions:** Results of the systematic literature review highlighted how leaders played the utmost important roles in the success or failure of a lean healthcare implementation journey. The practical implication and suggestions for future studies were also discussed.
8	CONFERENCE-2019-LOM-122	**A Study of the Secure Authentication System using RFID System for Institute of Higher Education: Towards Management Perception** **Zirawani Baharum**; Siti Farah Raziman *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** Radio Frequency Identification (RFID) has become more important nowadays. With RFID, more activity would work smoothly and implemented it will give more benefits. However, most of RFID are frequently implemented in logistics and transportation industry rather than university or education industry. Previous researches shows a few of issues that are arisen which can give negative impacts towards students and staff of the institutes. Lack of security system, unrecorded data and non-used student's identification card is some example of this matters. Thus, the objective of this study is to study the secure authentication system using RFID system for higher education. More focuses will be goes towards management perception rather than student or staff point of view. The methodology started by identify all the list of features for secure authentication

		system (using RFID) through theoretical mapping. A qualitative analysis is used in order to interpreted all the data that collected through interview session by transcription and coding. Initially, the data taken were involved three institutes of higher education in Malaysia. Findings from this study hopefully will improve the security in the institutes of higher education areas by looking forward on the benefits offered by the RFID technology specially in secure authentication system.
9	IRCIE-2019-EAS-85	**Shyness and the Career Development of Engineering Students: An Overview** **Normah Zakaria**; Masadliahani Masduki; Arihasnida Ariffin; Norhasyimah Hamzah; Siti Nur Kamariah Rubani *Universiti Tun Hussein Onn Malaysia* **Abstract:** Shyness is a universal problem that happens among students, including engineering students. Shy students have a high introverted trait and they are more suitable to choose a non-social career. However, the career as an engineer requires someone to possess skills and becomes highly competent, besides not shy to communicate and deal with various social situations. This made engineering graduates unemployed and contributed to the unemployment rate of the country. This article discusses the shyness problem and its relevance to the engineering students' career development. The strategies to eliminate shyness are also discussed in detail based on previous studies.
10	CONFERENCE-2019-ET-105	**An Investigation of the Effect of Air Gap and Moisture Absorption on the Skin Burn Injury for Firefighter's Personal Protective Clothing** **Zaina Norhallis Zainol**; Masine Md Tap; Haslinda Mohamed Kamar; Nazri Kamsah *Universiti Teknologi Malaysia* **Abstract:** Firefighters are commonly exposed to intense heat and fire. They suppressed fire by spraying water to avoid flame from spreading. They are enforced to use the Personal Protective Clothing (PPC) made of the flame retardant material to protect themselves from the skin burn injury. Skin burn injury is the most common injury occur among them. Yet, the exposure to extreme heat and moisture absorption into the clothing layers caused severe burn injury formation. The purpose of this study is to investigate the effect of air gap combined with the moisture absorption in the fabrics using Finite Element Analysis (FEM) and the Bioheat Equation. From the simulation experiment, it is discovered the air gap is a good insulator capable of preventing skin burn with a skin temperature of 48°C. However, the presence of moisture strongly affects skin temperature. It had elevated to 59.64°C forming a second-degree type burn injury. The presence of moisture had weakened thermal protection of the flame-retardant material and the air gap against the heat flux. It is found the moist material properties had enhanced heat transfer from the heat flux to the skin surface resulting in severe skin burn despite they were encapsulated with the Personal Protective Clothing (PPC).
11	IRCIE-2019-ET-129	**Finding an Alternate Access Route from Ikire to Gbongan, Osun State, Nigeria using Geospatial Techniques** **Amoo Babatunde**;Adebayo Quadri Akolade *The Federal University Of Technology Akure* **Abstract:** This paper describes Geospatial techniques to select suitable right of way and demonstrate the use of remotely sensed imagery for selecting the least cost and practically feasible alternative route in a way that reduce the cost of

		construction, time and effort in the field and Environmental hazard that may occurs as a result of the constructional activities. The analysis has taken Land Use / Land Cover and slope as a determining factor in order to find appropriate path for road construction using the cost distance approach. The selected route pass through areas of low elevation and gentle slopes which is good for the construction of roads to minimize cost and time. The route avoids areas of high elevation and steep slopes, also comparing with the land use and land cover it avoids regions of outcrops and dense vegetation.
12	IRCIE-2019-ET-143	**UNISELBot: Designing Simple Chatbot System for University FAQs** **Nahdatul Akma Ahmad**; Mohamad Hafiz Che Hamid; Azaliza Zainal; Zirawani Baharum *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** The UNISEL Bot system was developed for helping marketing department in order to help on giving information in interactive mode for marketing purpose. The current problem is the information are not served in interactive ways, manually serving information using portal and paper are complicated and there is no real-time customer support to help on question and answer. In the era of technology, the information should be served in an interactive platform. The interactive information tends to gather more user attention. Therefore, this project aims to develop marketing assistant Chatbot system for a private academic institution which known as UNISEL Bot. The Chatbot system development is expected to assist the marketing department to use smarter marketing and interactive ways, for instance; to receive FAQs from student and provide real-time feedback whilst encourage people to engage with latest technology. Agile methodology was used in the development of this Chatbot system. Qualitative data gathering using interview method with students and University staffs was implemented. Multiple diagram is presented in this paper to describe the process flow of UNISEL Bot system. UNISEL Bot system was made up of seven main modules including the Ask Question, Feedback, Registration, Event, Appointment, Survey and Map. In future, this Chatbot system can work effectively to replace the traditional method of manual customer service and can also helping people in capturing user data for building analytic data.
13	IRCIE-2019-EAS-32	**Multicollinearity in Multiple Regression Models with Interaction** **Aminatul Hawa Yahaya**; Noorazlina Mohamid Salih, M. K.; Puteri Zarina, W. M. Dahalan *Universiti Kuala Lumpur Malaysian Institute of Marine Engineering Technology (UniKL MIMET)* **Abstract:** Multicollinearity in multiple regression models with interaction is a result of strong correlations between independent variables. The existence of multicollinearity inflates the variances of the parameter estimates. The higher correlation coefficient will increase the standard error of the beta coefficients and produce assessment of the unique role of each independent resulting in difficult or impossible output. That may result, particularly for small and moderate sample sizes, in lack of statistical significance of individual independent variables while the overall model may be strongly significant. Multicollinearity may also result in wrong signs and magnitudes of regression coefficient estimates, and consequently in incorrect conclusions about relationships between independent and dependent variables. The multicollinearity test is used this research rather than the conventional method. The multicollinearity source variables are variables with absolute correlation coefficient greater than 0.95 and they marked with circles in the multicollinearity test. In this paper, researcher will simulate a set of data with

		the interaction of independent variables. The results in the eliminations process shows that independent variable with interaction will have more chance to be eliminated.
14	IRCIE-2019-ET-37	**A Metallurgic and Mechanical Comparision to Friction Stir Welding (FSW)** **Muhammad Azrie Husainy Mohd Jasri**; Mohd Faizal Abdul Razak *Universiti Kuala Lumpur Malaysian Institute of Marine Engineering Technology (UniKL MIMET)* **Abstract:** The objective of this research was to measure the material properties as well as the forces to orthodox friction stir welding (FSW) performed in air of AA6061. These results were compared by using ultimate tensile strength (UTS) and weld root properties such as joint line residue length at the crossing point between the welded aluminum alloy which allows crack initiation. Metallurgic cross sections of the AA6061 welds were prepared and the weld nugget hardness between the welding parameters was compared as well. Experiments such as this one and others enumerating the forces and process parameters must be achieved. A steady state model of temperature distribution has been put forward and is shown to precisely forecast trends in heat input using heat generation equations from [1,2]. Temperature distribution was measured and correlated to data by use of Micron Thermal Imaging camera.

Session 3

Date: November 26, 2019

Time: 11am – 4pm

Venue: Muar Room

Session Chair: Mdm. Rahimah Mahat

Co-Chairperson: Mdm. Aminatulhawa Yahaya

No	Paper ID	Presenter
1	IRCIE-2019-ET-29	**Simulation of Tensile Stress Concentration Analysis using FEA Software** **Zulzamri Salleh, M.M**; Islam, Jayantha Epaarachchi *Universiti Kuala Lumpur Malaysian Institute of Marine Engineering Technology (UniKL MIMET)* **Abstract:** This paper present the investigation on tensile behavior of syntactic foam using finite element analysis (FEA). Tensile properties which is important to discover especially for isotropic materials such syntactic foam. Different weight percentage (wt.%) of glass microballoon might be effected on developing of stress concentration (Kt) their stress on surface area. Comparative study on tensile syntactic foam using FEA approach was not explored yet. Hence, it is showed that the stress concentration (Kt) had more sensitive impact on lower modulus elasticity compared to the higher elasticity for syntactic foam.

2	IRCIE-2019-ET-54	**Effectiveness of Dual NC Machine with Single 6-Axis Robot** **Mohd Aliff Afira Sani**; Abdul Halim; Ismail Yusof; Nor Samsiah Sani *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** NC machine now widely used in industry especially in cutting process. It is precision cutting machine but however the effectiveness of this machine is less effective because it used manual handling to operate. For manual handling, it have many factor that effect the performance of the NC machine. This paper is to collecting data on effectiveness of dual NC machine with single 6 axis robot and it is important for further analysis regarding the performance of the machine. 6-axis robot commonly used because it can perform wider of flexibility. To design this system it consist of multiple controller and image processing are required to differentiate before and after products. Using an automation system shall increase the machine rate into maximum ability of the machine.
3	IRCIE-2019-LOM-130	**Study and Analysis of Productivity Performance by using Dmaic Approach in SME Industry** **Fevilia Nurnadia Adria Syaifoel**; Choong Pooi Ying *Universiti Tenaga Nasional, Malaysia* **Abstract:** It is crucial that Malaysia's Small- Medium Enterprises (SME) in the manufacturing sector could achieve desired productivity rate as this could contribute not only to the country's Gross Domestic Product (GDP), but also could contribute to the spending power of a nation. It is important for SME manufacturers to stay ahead in the ever-competitive market to ensure their survival and provide countless jobs for the nation. The objective of this paper is to study, analyse and propose viable solutions to improve manufacturer performance in terms of productivity and quality in the manufacturing sector by using various operation management tools. Hence, one SME company was chosen by utilizing the Value Stream Mapping (VSM) in DMAIC approach to measure their productivity. The aerosol production line was study, to see the gap measurement in productivity before and after applying a systematic method in operation management. Furthermore, along with various operation management tools such as Kaizen, Kanban system and 5S, a new layout (VSM) for the production line was proposed. Result shows that the proposed new layout could reduce the distance travelled by operator by 22.26 %, at the same time will increase the productivity and quality of product. Since the overall performance of the aerosol grease production line will be improved, the waste found in the production line also will be alleviated.
4	CONFERENCE-2019-LOM-100	**Humanitarian Logistic Releif Team Challenges During Flood** **Mimi Suriani Mat Daud;** Zuhra Junaida Mohd Husny Hamid; Mohd Saipuddin Suliman; Mohd Ramzi Mohd Noor; Mazilah Abdullah; Noor Irdiana Ngadiman *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** This paper demonstrates the challenges faced by humanitarian logistics relief team in rescuing the flood victims during floods. Flood is a disaster that commonly happened in Malaysia and this disaster can become chaotic and panic if handled improperly. The objective of this paper is to assess the challenges in humanitarian logistics relief mission during flood. To achieve the objective, semi-structure interview with six humanitarian logistics relief team has been conducted; two are from police, two from fire brigade and two from civil defense. The result

		from interview reveal that the factors that made the humanitarian logistics relief mission during flood inefficient are bound to three factors which are lack of emergency response transport and equipment, vulnerability of road network and attitude of flood victims. This study thus recommend that the government can add more budget to buy more equipment and emergency transport vehicle and educate by giving more awareness to public on the dangerous of flood to people and what should be done if they think the flood is going to be happened, without only hoping for the humanitarian logistics relief team to come and save them.
5	IRCIE-2019-ET-55	**Development of Smart Mckibben Glove Rehabilitation Device for Parkinson's Disease** **Mohd Aliff Afira Sani**; Mohamed Alif Dinie; Mi Yusof; Nor Samsiah Sani; So Shimooka *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** In the last decade, considerable ranges of articles have shown that rehabilitation exercising is effective in improving performance in Parkinson disease. In precise, latest studies have focused on the efficacy of intensive exercising in achieving the most beneficial outcomes inside the rehabilitation for patients with Parkinson disease. This paper will focus on developing a rehabilitation hand device prototype with the usage of Mckibben Artificial Muscle for the person with Parkinson disorder by using pneumatics and Arduino microcontroller. The subject needs to put on the rehabilitation gloves attached with accelerometer sensor in order to perform the daily physical movement. The Mckibben actuators had been mechanically programmed to match and support the range of character fingers as it features lightweight structure, simple, safe to use and cost-effective compared to other conventional actuators. To operate the rehabilitation glove, a control hardware system was designed in order to get the data records on the bending angle of the actuator based on the voltage reading, pressure and x,y,z axis position as for future research purposes. This prototype will assist the subject hand movement by the ability to improve subject quality and help getting back patient disorder due to Parkinson. Demonstrations with the complete system were completed to compare and evaluate the ability of the Mckibben actuator.
6	IRCIE-2019-ET-83	**A New Integrated Framework For Iso9001 Quality Management System in Malaysia** **Ishamuddin Mustapha**; Muhammad Ashfaq; Muhammad Imran Qureshi *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** Importance of ISO9001 Quality management system cannot be ignored by business world at any cost as it has a direct impact on the organization's ability to meet customer requirement. This research identified the gap that a comprehensive framework for quality management maintenance is lacking and the present quality management frameworks in use are not capable enough to meet the ISO9001 quality standards. This research is contributing in scholarly knowledge by integrating knowledge management and process based management element in quality management system maintenance area. This research is descriptive in nature and a quantitative technique was used to collect the data from 341 sample size. A total of 4 hypotheses were proposed and these form the overall research framework of this study. Partial least square–structural equation modeling SEM-PLS technique was used to analyze the quantitative data. The structural model results showed that process based management element has a significant impact on quality management maintenance while knowledge quality has a significant

		impact on process based management element. Surprisingly, the finding shows that there is no significant direct effect contributed by knowledge quality on the quality management system maintenance.This research also revealed that process based management element fully mediates the relationship between knowledge quality and quality management system element. This new framework can assist its users in evaluating the strengths and weaknesses of their quality management system maintenance effort and strategy, targeting their improvement areas, setting up an action plan for improvements, and tailoring a special part to the needs of their firms. Based on the quantitative results, the researcher has drawn a conclusion and proposed a new quality management system maintenance framework for ISO9001 certified organizations in Malaysia.
7	IRCIE-2019-ET-141	**Takt Time Analysis in Lean Six Sigma: From Conventional to Integration** **Owee Kowang Tan** *Universiti Teknologi Malaysia* **Abstract:** Lean Six Sigma offers a comprehensive roadmap, tools and technique for continuous business process improvement. Principally, Lean Six Sigma integrates Lean's principle of "value" and "speed" with Six Sigma's "consistency" (i.e. variation reduction) concept into the DMAIC (Design, Measure, Analyze, Improve, Control) framework. The integration of Lean and Six Sigma advances the pace of business process improvement. Conceptually, Lean and Six Sigma must be applied side by side from both management (i.e. soft practices) and technical (i.e. hard practices) perspectives. However, empirical research found that prior studies on Lean Six Sigma tends to focus on the study of integration from the soft perspective, such as exploring and confirming the determinants for Lean Six Sigma success as well as the application of Lean Six Sigma processes within varies business environments. There is lack of study on the integration of Lean Six Sigma from hard perspective. Hence, the concept of how Lean and Six Sigma tools could be integrated remains ambiguous because there are no standard guideline that available. As such, based on a Lean Six Sigma project (of minimizing new students registration cycle time) that conducted in one of local private university as single case study, this paper explores how Lean and Six Sigma tools could be integrated based on Lean Six Sigma principle, with the focus on a Lean's tool, namely "Takt Time Analysis". Finding from the study suggested that Takt Time Analysis could be expanded from "Lean-based" tools to as "Lean Six Sigma tool" by including process variation and process capability as parameters for analysis. The finding as well as the LSS based Takt Time Analysis methodology developed in this study has descriptive value in terms of studying the integration of Lean and Six Sigma tools that govern continuous quality improvement via Lean Six Sigma.
8	IRCIE-2019-EAS-58	**Learning Activity Effectiveness Based on Web Towards Student Change of Cognitive Level** **Norhasyimah Hamzah**; Muhammad Fazrulhelmi Ahmad; Arihasnida Ariffin; Siti Nur Kamariah Rubani; Normah Zakaria *Universiti Tun Hussein Onn Malaysia* **Abstract:** This study aims to assess the effectiveness of web-based learning activities. This study uses pre-test and post-test to evaluate the effectiveness of web-based learning activities on cognitive level change of students based on Bloom's taxonomy which is six levels of cognitive thinking (knowledge, understanding, application, analysis, synthesis and evaluation). Studies on pre and post-test achievement were conducted (Campbell & Stanley, 1963). The respondents of the study were 34 students of Bachelor of Education degree at Universiti Teknologi Malaysia who took the subject of SPM 4342 (Web Based

		Multimedia Development). The findings show that the cognitive level of students after the process of teaching and learning by using web-based learning activities is increasingly achieving test and cognitive level of the students.
9	IRCIE-2019-EAS-48	**Obstructions Confronting the Application of Islamic Financial Accounting Standards in the Islamic Banking Sector in Libya : Employees Perspectives Study** **Mohammed Alshaebi**; Ahmad Bin Che Yaacob *Universiti Teknologi Malaysia* **Abstract:** This study aims to examination and light the obstacles and difficulties that facing application of Islamic Financial Accounting Standards issued by Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) in the Islamic banking sector in Libya from the viewpoint of employees. The descriptive analytical approach was utilized, through a literature review of books and scientific studies on Islamic financial accounting standards, and the data analyzed by the statistical analysis package SPSS. Data were gathered by a questionnaire was designed and disseminated to the study community and verified its validity and stability. One of the significant results of this study is that the employees of the Islamic banking sector in Libya suffers from slow and non-serious of senior administrations in moving towards to apply the Islamic Financial Accounting Standards issued by (AAOIFI), and there is a shortage of legally qualified and accounting personnel to deal with these standards. The study recommended reconsidering the training and qualification programs for employees in the Islamic banking sector in Libya and paying attention to the educational materials in Libyan colleges and universities to create a professional cadre scientifically and legitimately qualified to practice Islamic banking and apply its standards.
10	IRCIE-2019-EAS-140	**Factors Influencing Retail Investor Behavior in Making Investment Decision: A Case of Bursa Malaysia** **Choon Hee Ong** *Universiti Teknologi Malaysia* **Abstract:** This study aims to examine factors that influence retail investor behaviour in making investment decion in Bursa Malaysia. Factors that were tested with retail invesstor behavior include stock price, perceived risk and firm image. Survey questionnaire was used to collect data and yielded 110 responses. The findings revealed that firm image is significantly related to retail investors' behavior in their investment decision. The empirical evidence in this research provides crucial information to investors, firms, brokers, regulators, financial institutions and government in making appropriate decisions to stabilize the market. In addition, it assists investment advisors to plan effective strategies for their clients.
11	IRCIE-2019-EAS-57	**Effectiveness of Video Use in the Teaching and Learning of Electronic Practice in Vocational Colleges** **Norhasyimah Hamzah**; Muhammad Rizal Zakaria; Muhammad Fazrulhelmi Ahmad; Normah Zakaria; Arihasnida Ariffin; Siti Nur Kamariah Rubani *Universiti Tun Hussein Onn Malaysia* **Abstract:** This study aims to evaluate the effectiveness of video use in the teaching and learning of electronic practice at selected vocational colleges. Currently, the instructors at most vocational colleges are still using the traditional

		methods (use of worksheets) in their Teaching and Learning (T&L) process. The objective of this study is to (i) measure the effectiveness of video use practices in the teaching and learning for electronic practice and (ii) evaluate the level of acceptance of students of video use. A quantitative approach was adopted by means of a quasi-experimental design. A total of 60 respondents from two vocational colleges were selected and placed in control groups and treatment groups. The instruments used in this study were pre-post-tests and a set of questionnaire. Statistical Package for the Social Sciences (SPSS) version 22.0 was used to analyse the data by means of inference and descriptive analyses. ANCOVA and MANOVA test analyses were used for inferential statistics and statistical analyses in the forms of frequency, mean, and percent were used for descriptive statistics. The findings show a significant difference in the achievements of students who used a video and those who used a worksheet for the course "Electronic Practices." These findings indicate that the students were able to accept the use of video for the teaching and learning of the course. In conclusion, the use of video for the teaching and learning of "Electronic Practice" was found to have a positive impact on electronic practice and in attracting the students to use the method.
12	IRCIE-2019-ET-52	**Magnetic Properties of Somaloy 700 (5p) Material Under Round Magnetic Flux Loci** **Ashraf Rohanim Asari**; Youguang Guo; Jianguo Zhu *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** Electrical machines has enabled human to do their chores with easier and more comfortable way. Most of the current electrical machines require the magnetic cores to operate at higher frequency to meet the demand of high–speed performance. The study of rotating core loss gives big significance to the rotating electrical machines since in real situation, the magnetic flux densities in the electrical machines are rotated during the operation. In this paper, magnetic properties of new material; SOMALOY 700 (5P) are studied by conducting 2-D core loss measurements at 50 Hz, 100 Hz, 500 Hz and 1000 Hz. Magnetic flux density is controlled to be in round shape by using LabVIEW to resemble the actual core loss of rotating machines. The collected data are analysed by using Mathcad before being separated to obtain the three element of core losses; hysteresis core loss, eddy current core loss and anomalous loss. The findings show that the calculated core loss is 13.85 kg/ Watt at 1.4 T and hysteresis loss dominates the total core loss at all frequencies. The details of core loss is important in providing information to the engineers for the motor design proposes.
13	CONFERENCE-2019-ET-94	**Design Evaluation of a Coffee Maker using Design for Assembly Method** **Muhammad Hafizzuddin Md Teni**; Khairil Ashraf Ahmad Maliki, Azmi Naroh, Aida Tukiran *Politeknik Ungku Omar, Malaysia* **Abstract:** The purpose of this project is to evaluate the design of a coffee maker by using Boothroyd Dewhurst Method which this method is one of the Design For Assembly (DFA) methods. The details of Boothroyd Dewhurst Method have been described in methodology chapter. The product is evaluated by using Manual Handling Table and Manual Insertion Table. The results of current design are used to make improvement to the coffee maker. Then, new design is made by eliminating or combining the old design so that total cost and time for assemble the coffee maker is reduced. Lastly, comparison is made between new and old design.

14	IRCIE-2019-ET-53	**Development of Cooling Tower Plant using Programmable Logic Control** **Ashraf Rohanim Asari**; Mohamad Ezzudin Muhizan *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** Once-through cooling is the most popular process that is used by the industries due to its simplicity and low cost. However, this method has cause a negative impact to local ecosystems where it requires a huge water intake and releasing high water temperature to the main water supply. The cooling tower is used to remove the unwanted heat from the water so it is safe to be release to the main water source or to be reused as a cooling agent for the equipment. In this study, cooling tower plant has been designed and developed by using Programmable Logic Control (PLC). This project also focuses on acquiring the optimum value of initial temperature by setting to three different temperature and compare which initial temperature has better temperature reduction. The prototype went through some testing to see the effectiveness of cooling tower system by turning off the blower and fan and by turning on and off in 10 minutes interval. The prototype uses the forced draft method and will be run for 30 minutes for a complete cycle. The finding shows that the developed cooling tower that the temperature can be reduced about 12oC and the optimum temperature of this prototype is 80oC. This project can be further improved to achieve better result by considering several in order to get the optimum cooling value.

Session 4

Date: November 26, 2019

Time: 11am – 4pm

Venue: Pontian Room

Session Chair: Dr. Munir Faraj Almabrouk Alkbir

Co-Chairperson: Ts. Muhammad Azrie Husainy Mohd Jasri

No	Paper ID	Presenter
1	IRCIE-2019-ET-59	**Recycling Waste Product Via Pyorlysis Method to Produce Marine Fuel** **Md Redzuan Zoolfakar** *Universiti Kuala Lumpur Malaysian Institute of Marine Engineering Technology (UniKL MIMET)* **Abstract:** Shipping industry is a global working network. It is the largest existing transportation medium known to human. In such vast environment, fuel costing is a very crucial aspect that can't be avoided. More than half of the shipping cost is for fuel consumption. This research is mainly aimed to solve this problem. By using pyrolysis method, waste products are thermally treated in order to produce three types of by-products. Later the by products can be used as an alternative fuel source to be used in shipping industry. The main by product that is focused in this research was the bio oil, which is a bio diesel that can be used as fuel source onboard ship.

2	IRCIE-2019-ET-78	**Improvement of Compressive Strength of Geopolymer Mortar by Utilization Slag and Fly Ash Mixtures** **Othman Elbasir**; Megat Azmi Megat Johari; M. J. A. Mijarsh; Zainal Arifin Ahmad; Mohamed O. M. Mashri *High institute of Science and Technology, Civil Engineering* **Abstract:** The paper display the use of two locally available pozzolanic solid wastes to decrease the CO2 emission on climate change. The pozzolanic material applied in this study is (GGBFS and fly-ash) to develop high geopolymer strength mortar. to output geopolymer, 7 mixtures trial were intended by modifying GGBFS and FA. The different percentages for all mixtures (100:0),(90:10),(80:20),(70,30),(50:50),(25,75),(0:100). respectively. The combined alkaline activators NaOH with 10 M concentration and Na2SiO3. The wt. ratio of Na2SiO3 to NaOH = 2.0, and wt. the ratio of alkaline-activator solutions to binder (solid material) GGBFS+ FA= (0.48).The alkaline activated mortar samples were then cured at 75°C for 24 h before being tested for compressive strength at 7, 14 and 28 days. foremost, it was found that mixture with a combination of GGBFS: FA of 25:75 gain the higher compressive strength (CS) development at 28 days of 88.87 MPa. Therefore, the alteration percentage of SiO2 and Al2O3 from Fly ash by CaO provided by GGBFS contributes to signi?cant CS development due to the formation of more N-A-S-H and C-S-H gel binder. The result observed of gel binder formation was emphasized with XRD and FESEM.
3	CONFERENCE-2019-LOM-112	**Driving Supply Chain Change in the Pharmaceutical Industry** **Hairul Rizad Sapry**; Mohamad Asyraf Zaini *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** The logistics process in Pharmaceutical industry mainly involved the delivery of a perishable product in the complex networking process which in many time expose to the delivery disruption to the customer. The nature of the products that need to reach the destination in fast and safely make the logistics process in the pharmaceutical industry are very challenging and expensive. Despite the reported issues, there are not many literature reviews or field research being conducted to address the gap in managing the issue which is the focal point of this study. In this research, a qualitative method was adopted due to the complexity of the process that requires close investigation to understand the real issue. Four (4) Pharmaceutical companies were selected to unveil the theme issue. A strategy framework was developed as a result of the findings and provide an insight to the practitioner on the critical factors that driving on the logistics changes in the Pharmaceutical industry. This study provides a vital finding and serves as an exploratory study for future research.
4	IRCIE-2019-ET-60	**Use of Glass Dust to Improve Concrete Strength on Offshore Platform Installations** **Md Redzuan Zoolfakar** *Universiti Kuala Lumpur Malaysian Institute of Marine Engineering Technology (UniKL MIMET)* **Abstract:** An offshore platform structures is a large structure with facilities for well drilling to explore, extract, store, and process petroleum and natural gas which lies in rock formations beneath the seabed. The structures are expensive to construct but there is an opportunity to have significant financial profit. Concrete

		platforms is one of the oldest and most common construction material use for this purpose due to its low cost, availability, its long durability, and ability to sustain extreme weather environments. However, it has it limitation in term of strength. Thus the aim of this study is to investigate the effect of using glass dust as an additional in conventional concrete material on the properties of the concrete.
5	IRCIE-2019-EAS-133	**Understanding the Major Predictors Affecting the Level of Customer's Satisfaction Towards Fast Food Industry in Malaysia: The Equity Theory Perspectives** **Arman Hj. Ahmad**; Abdul Arieffarid Abdul Wahid; Ridzuan Masri; Mohd. Farid Shamsudin; Izian Idris; Alisa Ibrahim *UniKL Business School* **Abstract:** The main purpose of this conceptual paper is to propose a holistic framework that could increase the understanding towards the real predictors of customer's satisfaction towards the fast-food industry in Malaysia by applying the Equity Theory to underpin the study. Although the past academic studies have identified various important aspects that could affect the customer's satisfaction in the industry, there are still numerous local fast food entrepreneurs that unable to understand the information simultaneously executing the wrong strategies to attract the potential consumers. Hence, this paper is aimed to provide a better understanding towards the identified elements that have been proven by academicians in previous literature pertaining to the issue. This study hypothesized four predictors (physical environment, price sensitivity, product quality, and promotion) that could truly affect the consumers' satisfaction in the fast-food business. It is presumed that all predictors are significant in controlling the satisfaction of consumers for this study. In order to gain competitive advantages and sustain in this highly competitive market, a business or company (particularly the fast-food operators or entrepreneurs) should be focusing on these four main elements as they could affect the level of customers' satisfaction.
6	IRCIE-2019-LOM-137	**The Concept of Reverse Logistics Practices: A Review of Literature** **Noor Irdiana Ngadiman**; Mimi Suriani Mat Daud *Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC)* **Abstract:** Reverse logistics is young concept and it has received growing interest among practitioner. Furthermore, reverse logistics is less mature than logistics and supply chain management conceptualizations. Reverse logistics simply defined as the return, exchange, refurbishment, remarketing and disposition of products. The customer returns the products because of several reasons such as end of life, expired, product damage, products recall, poor quality, non halal products and others. The implementation of reverse logistics practices into business became a competitive advantage and it became strategic goals for the organization's economic benefits, building a company image and somehow effects the environment legislation. Therefore, it is very important to understand the overview of history, concept, development level, and activities of reverse logistics practices. The objective of this study is to understanding the concept of reverse logistics practices in view of literature perspectives. To achieve it, this study on focus on secondary which is review the literature. The review of literature of reverse logistics concept will present in table.
7	CONFERENCE-2019-LOM-113	**Investigation of Warehouse Self Service Management to the Customer Safety Perception** **Hairul Rizad Sapry**; Amirul Ariff Zulfadzlee

		Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC) **Abstract:** This study examines the impact of warehouse self-service management by IKEA that creating a unique shopping experience for their customer. The implementation which is against the traditional warehouse practices has created a mixed response in the research field. This study focuses specifically on the logistics safety of the warehouse operation which is the main concern of this study mainly due to the minimum presence of the IKEA staff throughout the collection process. This study adopted a quantitative method in which 196 questionnaires were distributed to the IKEA customer to understand their perception of the safety provision on the collection process of items at the warehouse. The findings from this research revealed that despite a huge investment in the safety infrastructure and system, the customer still felt concern on the potential hazard due to the lack of presence of IKEA staff at the warehouse. The finding provides evidence to support the previous study on the importance of continuous interaction with the customer to increase their confidence level on the safety aspect. In addressing the gap, this study suggests an interactive screen at the warehouse to guide the customer during the collection process. This preliminary study has set a foundation for future research in developing a safety interactive framework strategy for the implementation of the self-service operation.
8	IRCIE-2019-ET-136	**Crypto Ransomware Detection on Windows Operating System** **Wira Zanoramy Ansiry Zakaria** *Cybersecurity Malaysia* **Abstract:** As of now, ransomware, specifically crypto ransomware is the most dangerous malware ever. This is due to the capability of it to hijack the victim's files and data by totally encrypting it using sophisticated cryptographic libraries such as OpenSSL and Microsoft Cryptography API. From the ransom note left by the attacker on the infected machine, the victim is told to fulfill the requested payment to get back the files. New variants of ransomware are released on daily basis, thus making the task of detecting analyzing it becomes challenging and resource consuming. Obfuscation and polymorphism employed in most modern malware made the task of detecting it even harder. This research investigates into the domain of detecting ransomware on Windows platform. We reviewed some of the related works done within this domain. In this paper, we proposed a framework for ransomware detection on Windows platform by using information such as API calls and registry.
9	IRCIE-2019-EAS-134	**Sustainable Communication: Understanding Muslim Travelers' Needs From the Attractiveness of Package Tour Perspectives** **Arman Hj. Ahmad**; Izian Idris; Siti Suhana Alias; Ilham Sentosa Anwar Malik; Cordelia Mason; Mohd. Farid Shamsudin; Ridzuan Masri; Mohd. Asyraf Hasim *UniKL Business School* **Abstract:** Travel agencies have modernized the way they communicate package tours to travellers through digital technology. It is however imperative to also understand travellers' needs in order to remain competitive in the market. In particular, Muslims travellers since they hold a different set of values and beliefs that guide their travel needs. Hence, this research attempts to understand Islamic travel needs and how such needs can impact the attractiveness of package tours in Malaysia among Muslim travellers. The travel needs of Muslim travellers i.e. travel motives, travel behaviour and perceived travel barriers will be determined and tested against the attractiveness of packaged tours. This paper proposes a

		conceptual model so that further analyses can be conducted and marketing strategies can be recommended to enhance the attractiveness of package tours among Muslim travellers. By gaining a better understanding, tour operators in Klang Valley will be able to enhance their marketing strategies and increase the demand for their package tours.
10	IRCIE-2019-ET-69	**V2oip Application Via Vanet: A Performance Analysis Study** **Irma Syarlina Che Ilias**; Nur Aqilah Ahmad Zabidi *UniKL MIIT* **Abstract:** With the Internet becoming an increasingly significant part of our lives, the dream of a WiFi-enabled city is becoming closer and closer to reality. VANET offers countless benefits to organizations of any size. Automobile high speed Internet access would transform the vehicle's on-board computer from a nifty gadget to an essential productivity tool, making virtually any web technology available in the car. It is user friendly and it would allow for free in VoIP services such as GoogleTalk or Skype between employees, and it will lowering the telecommunications costs.This study is on the performance of V2oIP over VANET using a wireless network as a transmission medium. The performance of video call, video streaming and video conferencing are tested based on jitter, delay and MOS. The testing are done at TWO (2) different places; urban and rural areas for THREE (3) different timescale. The study shows, urban area performed better during afternoon for both video streaming and video call while worst for video conferencing activities. In contrast, rural area performed better during evening for video conferencing activities while worst for both video streaming and video call during evening. Another line of work that may be pursuing from this research would be testing on other rural and urban areas, ISPs, number of users, network monitoring tools or video and voice activities.
11	IRCIE-2019-ET-66	**Optimization of Radial Impulse Turbine for Oscillating Water Column Wave Renewable Energy** **Khairul Anuar Mat Saad**; Mohd Firdaus Al Musanna Ahmad *Universiti Kuala Lumpur Malaysian Institute of Marine Engineering Technology (UniKL MIMET)* **Abstract:** An oscillating water column (OWC) extracts the power of waves by trapping air above a water column. This trapped air is compressed and decompressed by the wave action flow inside a turbine power to the mechanical power during process, and it is important as the turbines are expected to operate in oscillating and reversing flows over a wide range of conditions. The objectives of this study are to determine and analyze the type of radial impulse turbine of OWC and to optimize the performance of a radial impulse turbine for OWC by using Computational Fluid Dynamics (CFD). This requires a comprehensive investigation on turbine configuration, turbine efficiency, OWC integration, and turbine operation with respect to climate condition. The outcome of this study to settle the main drawbacks of radial turbine namely lower peak efficiency and damping on OWC can be considered. Later, these problems will be further study to identify the behavior of the airflow through the machine, sources of energy loss, and impact of different parameters on the turbine performance.
12	CONFERENCE-2019-ET-125	**Performance Analysis on Interlocking Brick with Quarry Dust as Mixing Agent** **Mohamad Shahrul Effendy Kosnan**; Nur Humaira Hamri; Fatin Ayuni Mohd Suhaimi; Zulhaimi Mohammad

		Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC) **Abstract:** Sand demand is currently very high and constantly increased up to cause problems in the construction industry. In an effort to solve this problem, various studies have been conducted as an alternative to replace the use of sand and among them are the use of quarry dust as a substitute sand. In this study, quarry dust is used as a substitute of sand in the manufacture of interlocking brick cement-sand. However, it has raised questions about the ability of interlocking brick with quarry dust in terms of compressive strength and water absorption compared to interlocking brick with sand that are often used in construction. Interlocking brick made using an appropriate mixture of sand and quarry dust as the main components, cement as a binding agent. Providing 70 samples of interlocking bricks different mixing and all the interlocking bricks dimensions are 250mm x 125mm x 100mm. The various percentage of quarry dust that to be used in the exerimental. This percentage ratio is required to determine the appropriate percentage to be used in the production of brick in order to produce optimum strength. Interlocking brick will be tested using hydraulic machine for days 7 to days 28 for compressive strength and water absorption test. The results showed that the highest value for compressive strength test is from a sample of 70% quarry dust of 31.07 N/mm ^{2} which consisted ratio of 1 cement: 1.8 sand: 4.2 quarry dust while for water absorption test, the highest reading was recorded by 0 % sample of quarry dust with a ratio of 1 cement mixture: 5.1 sand of 11.8%. As conclusion, quarry dust content can affect the compressive strength of bricks, thereby increasing the compressive strength of brick and reduce the rate of water absorb.
13	IRCIE-2019-ET-76	**Effect of Low Temperature on the Carbon-Based Conductive Ink Resistivity for Flexible Printed Circuit** **Norsheila Buyamin**; Muhammad Zaki Zainal; Mahani Mohd Zamberi; Mohd Nur Azmi Noordin *Politeknik Ungku Omar, Malaysia* **Abstract:** Nowadays, it is known that printing methodologies can be used to print electrically functional devices on a variety substrates includes organic or inorganic materials. Currently, printing technologies have been an attractive alternative printing method to fabricate flexible electronic devices, keeping to its advantages including easy handling, wide use and low cost. However, using flexible substrate open up new possibilities for printed electronic (PE), where certain applications expose the flexible substrate to a mechanical bending which might decreased the performance or becomes a cause to a functionality failure. Moreover, developing of an appropriate ink at an extreme surrounding temperature with high conductivity and good dispersion of the ink-jet printing is one of the critical issues that need to be solved. Thus, the objectives of this study are determine the effects of cyclic loading on the elasticity and the conductivity of carbon-based conductive ink after exposing to low temperature. The sample of conductive ink has been tested by resistivity test using 4-point probe after doing cyclic test. This study is focused on the conductivity behaviour of printed conductive ink after being exposed to different temperature; low temperature at -6ºC and at room temperature of 26ºC. After being exposed to each of the temperature set, the cyclic loading test of 1000 and 5000 cycles each was carried out while non-cyclic sample was prepare as the bench-marking sample. From the cyclic test results, it is understood that the resistivity of printed ink at low temperature is lower than that of at a room temperature. Besides, the lowest resistivity is recorded that as 105.71 Ω/sq for sample that being tested at 5000 cyclic after exposed to low temperature. This is due to the deformation of the elasticity properties of the ink when exposed to the low temperature after the printing process.

14	IRCIE-2019-ET-77	**Reliability Performance of Conductive Ink Subjected to Hygrothermal Aging** **Muhammad Zaki Zainal**; Norsheila Buyamin; Siti Hajar Sheikh Md Fazullah; Rawaida Muhammad *Politeknik Ungku Omar, Malaysia* **Abstract:** In the era of rapid technological development, the popularity in printed technologies and electronic packaging have resulted in a tremendous increase in the use of carbon-based conductive ink due to their advantageous features such as being environmental-friendly, low cost and lower assembly temperature. From the literature, it has been highlighted that the interconnect material are exposed to some degree of humidity and elevated temperature during the service life in an actual application. Therefore, the objective of this research work is to investigate the reliability performance of the conductive ink when subjected to hygrothermal aging. In this study, the samples were exposed to either the room temperature condition with temperature of 20°C and humidity of 60% RH and secondly when subjected to hygrothermal aging in an environmental chamber with humidity of 85% RH and a temperature of 85°C up to 24 hours. Following these, the samples were tested in terms of electrical conductivity using a four-point-probe (ASTM F390) and lap shear test (ASTM D1002) via tensile loading to evaluate the bonding strength at the interface between the adhesive and the substrate. Next, morphological study was done using Scanning Electron Microscopy (SEM). With the presence of water molecule in the conductive ink, the molecule of carbon black and epoxy become unstructured and traces of riverlines are evident. In addition, there is a dramatic decrease in the sheet resistance following hygrothermal aging relative to the samples conditioned at room temperature, possibly due to enhancement in the conductivity of the ink. In contrast, as for the mechanical shear stress, the lap shear stress following hygrothermal aging process becomes weaken compared to those conditioned at room temperature, which could be associated with weak surface energy, brittle and weak bonding between carbon black molecules and the aluminium substrate interface.

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