ABSTRACT BOOK &
CONFERENCE
PROGRAM GUIDE

Joint Conference
2021

ICMProTech

1st International Conference on Material Processing and Technology 2021

IConMET

International Conference on Manufacturing Engineering Technology

ICoHSE5

5th International Conference on the Roles of the Humanities and Social Sciences in Engineering 2021

14 - 15 July 2021

CEGeoGTech UNIVERSITI MALAYSIA PERLIS

UNIVERSITI MALAYSIA PERLIS

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Joint International Conferences 2021

ICMProTech 2021
1st International Conference on Material Processing and Technology 2021

IConMET 2021
1st International Conference on Manufacturing Engineering Technology 2021

ICoHSE5
5th International Conference on the Roles of the Humanities and Social Sciences in Engineering 2021

PREFACE

These joint conferences are organized simulatenously on 14-15 July 2021 on a virtual platform, comprising of 1st International Conference on Material Processing and Technology 2021 (ICMProTech), 1st International Conference on Manufacturing Engineering Technology 2021 (IConMET) and 5th International Conference on the Roles of the Humanities and Social Sciences in Engineering 2021 (ICoHSE5). The conferences gather more than 150 papers with themes of materials processing & technology, manufacturing engineering & technology as well as social innovation in industrial revolution 4.0.

The aim of these conferences are to be the grand platforms for researchers, educators, students and industries to share and exchange ideas and research findings in respective fields of researches. In this way, both academia and industries can communicate on problems faced in current field of interests. It is also expected that participants can create networks and stimulate potential collaborations between researchers in the same field of research via this conference.

1st International Conference on Material Processing and Technology 2021 (ICMProTech) explores the advances and shares the state-of-the-art knowledge of materials engineering, sciences and to discuss the latest developments and innovations in the fields of related field of research works.

1st International Conference on Manufacturing Engineering Technology 2021 (IConMET) brings together leading researchers, engineers and scientists in the domain of manufacturing engineering and technology.

While the 5th International Conference on the Roles of the Humanities and Social Sciences in Engineering 2021 (ICOHSE5) bridges the gap between academic discussion and public debate to envision ways of reconciling the innovative prospects of science with its much-needed social accountability and credibility.

PROGRAM BOOK

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PART I

Opening Remarks
by
Associate Profesor Ir Dr Shayfull Zamree bin Abd Rahim
Head of Center of Excellence Geopolymer and Green Technology (CEGeoGTech)

In the name of Allah, most Gracious and Merciful.

Assalamualaikum Warahmatullahi Wabarakatuh.

I would like to extend a warm welcome to all guests, speakers, presenters and participants to the Joint International Conferences of IConMET 2021, ICMProTech 2021 and ICoHSE 2021. IConMET 2021 stands for International Conference on Manufacturing Engineering Technology and ICMProTech 2021 stands for International Conference on Material Processing & Technology 2021, both are organised by Centre of Excellence Geopolymer and Green Technology (CEGeoGTech). ICoHSE5 which stands for The 5th International Conference on the Roles of the Humanities and Social Sciences in Engineering 2021, organised by Centre of Excellence Social Innovation and Sustainability (CoESIS) and Faculty of Applied and Human Sciences (FSGM), UniMAP.

I hope that the participants will share knowledge throughout this event and together we learn our recent findings in exploring ways to face various global challenges as researchers and scientists. Also, lets pray to Allah S.W.T so that the pandemic COVID-19 to be over in 2022 so we can meet face to face next year as normal.

Last but not least, congratulations to the committee members and everyone who have been supporting this conference. See you all again next year.

Best wishes,

Associate Profesor Ir Dr Shayfull Zamree bin Abd Rahim
Head of Center of Excellence Geopolymer and Green Technology (CEGeoGTech)

Opening Remarks
by
Associate Professor Dr. Huzili Hussin
Head of Centre of Excellence for Social Innovations & Sustainability

In the name of Allah, most Gracious and Merciful.

Assalamualaikum Warahmatullahi Wabarakatuh.

The 2021 5th International Conference on the Roles of the Humanities and Social Sciences in Engineering 2021 (ICoHSE5) is now held again as an annual conference organized by the Centre of Excellence Social Innovation and Sustainability (CoESIS), Faculty of Applied and Human Sciences. The aims of the conference are to provide a forum for researchers, academicians, professionals, and students from various social sciences fields and with cross- disciplinary working or interest in the development and design of technology to interact and disseminate the latest issues and researchers.

ICoHSE5 2021 also invites the scholars and encourages the researchers to submit high quality manuscript and papers to this conference. It is also to share and exchange of ideas, thoughts and discussions on all aspect of social sciences to facilitate the formation of networks among participants of the conference for improving the quality and benefits of the research. It is a great

pleasure to welcome all the participants through virtual conference.

I would like to appreciate the vast work in this conference as a collaborative effort among Centre of Excellence Geopolymer and Green Technology (CEGeoGTech). I do hope that this conference will be a prestigious forum to communicate and sharing the findings and precious researches in their respective fields which will ultimately increase the source of knowledge.

We thank all authors and parties who have contributed and participated in presenting their works at this conference. We also gratefully acknowledge all reviewers for their respected knowledge from members of Conference Committees. Their efforts were crucial to the success of the conference. We are also blessed by the presence of two keynote speakers and one invited speaker from different institutions which will address significant trends relating to social innovation and sustainability. At last, we wish you all enjoying a one day discussions through this ICoHSE 5 2021 virtual conference.

Very best regards,

Assoc. Prof. Dr. Huzili Hussin
Head of Centre of Excellence for Social Innovations & Sustainability,
Faculty of Applied & Human Sciences

Welcoming Speech
by
Associate Professor Ir Dr Mohd Shukry bin Abdul Majid
Dean, Faculty of Mechanical Engineering Technology,
UniMAP

In the Name of Allah, the Most Beneficent, the Most Merciful.

Assalamualaikum Warahmatullahi Wabarakatuh

It is my great pleasure to welcome you to the International Joint Conferences of IConMET 2021, ICMProTech 2021 and ICoHSE 2021. These conferences disseminate the latest research results and findings with the researchers and academics on related fields of interest.

I would like to quote Sir Terence David John Pratchett once said, "*The best research you can do is talk to people*". Although he is not a scientist, his statement is true because there is no meaning in conducting research if we do not publish or convey it to society. Our research is incomplete if the finding is not seen or learned by people.

These joint conferences represent tremendous efforts of many people, involving two faculties and two Centre of Excellences (CoE) at Universiti Malaysia Perlis. On behalf of the Faculty of Mechanical Engineering Technology, UniMAP, I would like to express my gratitude to Allah s.w.t for the event's success. Also, I would like to congratulate and thank the committee members

and the external reviewers for their hard work in reviewing submissions. Also, we are pleased to acknowledge the keynote and invited speakers for sharing their insights with us.
Finally, the conference would not be possible without the excellent papers contributed by all authors. We thank all the authors for their contributions and participation in this Joint Conferences. We sincerely hope that the conferences will become a much-used source of reference for engineers, researchers and university lecturers
We hope to have your pleasant supports and participation in the year 2022.

Best wishes,

Associate Professor Ir Dr Mohd Shukry bin Abdul Majid
Dean,
Faculty of Mechanical Engineering Technology

Welcoming Speech
by
Assoc. Prof. Ku Halim Ku Arrifin
Dean, Faculty of Applied and Human Sciences (FSGM),
University Malaysia Perlis

In the Name of Allah, the Most Beneficent, the Most Merciful.

Assalamualaikum Warahmatullahi Wabarakatuh

I would like to extend my warmest welcome to all the participants of The 5th International Conference on the Roles of the Humanities and Social Sciences in Engineering 2021 (ICoHSE5).

ICoHSE5, which is organized by the Centre of Excellence Social Innovation and Sustainability (CoESIS), Faculty of Applied and Human Sciences mainly aims at bridging the gap between academic discussion and public debate to envision ways of reconciling the innovative prospects of science with its much-needed social accountability and credibility.

The development of science and technology plays a significant role in achieving Sustainable Development Goals (SDG) targets. Inclusive and sustainable industrialization, together with innovation and infrastructure, can unleash dynamic and competitive economic forces that generate

employment and income. They play a key role in introducing and promoting new technologies, facilitating international trade and enabling the efficient use of resources. Innovation, understood as new forms of social practice and organization, as well as new or improved technological products and processes, is not only an explicit focus of Goal 9 (build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation) but also a key enabler of most - if not all - of the SDGs Goals.

With this year's theme of Social Innovation in Industrial Revolution 4.0, I believe that ICoHSE5 will stimulate thoughts and valuable insights that can enrich transformative efforts which are in line with the Fourth Industrial Revolution (4IR). It will definitely provide a great virtual platform where researchers and educators can discuss and contribute ideas interactively. I sincerely hope that all the participants will benefit from the technical contents of this conference.

I would like to express my sincere gratitude to the distinguished invited speakers, presenters and participants for their presence and contributions to the conference.

Finally, a huge thank you to all ICoHSE5 committee members for their outstanding efforts in organizing such a great event.

Congratulations!

Assoc. Prof. Ku Halim Ku Arrifin
Dean,
Faculty of Applied & Human Sciences

PART II

CONFERENCE SCHEDULE
14 JULY 2021

9:00 am	: Recitation of Do'a
9:05 am	: UniMAP Official Song: WAWASANKU
9:10 am	: Welcoming speech by Deputy Vice Chancellor (Research & Innovation), Professor Ir. Dr. Rizalafande Che Ismail
9:20 am	: Opening speech by Deputy Vice Chancellor (Academic and International) Acting Vice Chancellor of UniMAP Professor Ir. Dr. Mohd Rizal Arshad
9.30 am	: **KEYNOTE SPEAKER 1** Associate professor Dr ***Przemyslaw POSTAWA*** Associate professor (dr hab. inż. prof. PCz) Department of Technology and Automation, Polymer Processing Team Faculty of Mechanical Engineering and Computer Science Czestochowa University Of Technology (Pcz), POLAND
9.50 am	: **KEYNOTE SPEAKER 2** ***Prof. Emeritus Dr. Mohamed Almory Mohammed Ismail*** Dean, Educational Psychology Faculty of Education, Zagaziq University Mesir Presiden/ Founder Arabic Association for Measurement and Evaluation EGYPT
10.10 am:	**KEYNOTE SPEAKER 3** ***Associate Professor Marcin Nabiałek, dr hab. prof. P.Cz.*** Institute of Physics, Faculty of Processing Engineering and Materials Technology, Czestochowa University of Technology (PCz), POLAND
10.30 am:	**KEYNOTE SPEAKER 4** ***Professor Datuk Dr. Rokiah Haji Omar*** University Community Transformation Centre, UCTC, UKM, MALAYSIA

10.50 am: **KEYNOTE SPEAKER 5**

Professor Dr.V.K.Bupesh Raja, PhD,
Head, Department of Automobile Engineering,
School of Mechanical Engineering,
Sathyabama Institute of Science and Technology,
Chennai, Tamil Nadu, INDIA.

11.10 : End of Ceremony

13.00 : Parallel Session starts

(See page 17-31 for details of Parallel Sessions)

Parallel Session 1: ICMProTech 2021 -14 JULY 2021

	ICMProTech 2021 Schedule Virtual Room 1		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
13:00	**INVITED SPEAKER:** Assessment of Musculoskeletal Disorder in Foodservice Industry in Emerging Economy	Associate Professor Dr Kamalakanta Muduli, Papua New Guines University of Technology	GMEET: https://meet.google.com/dda-kmhf-ycf
13:20	Erosion Wear Characteristics of Novel AMMC Produced By Metallurgical Powdered Method	R K Behera and Dr. Birajendu Prasad Samal	
13:30	Mechanical Properties of Particleboard Using Acacia Mangium Wood Particles Binded With Seaweed-Based Adhesives	Associate Professor Ts. Dr. Liew Kang Chiang	
13:40	Practical From Home on Drying Operation Module With Cucumber As The Sample	Bode Haryanto, ST., MT., Phd.	
13:50	Conceptual Model of Enabler Factors For Effective Managing Safety Management And Safety Performance Of High-Rise Building Construction Projects	Muhammad Hafizi Bin Zailan	
14:00	Utilization of Biomass Flyash In Cementitious Application	Dr Aezeden Mohamed	
14:10	Fault Detection And Diagnostic For Air Conditioning System	Munir Faraj Almbrouk Alkbir	
14:20	Effectiveness of Banana Trunk As Protection Wall From High Velocity Shrapnel During Detonation Of Unexploded Ordnance (UXO)	Abdul Rashid Othman	
14:30	Tensile Properties of Polylactic Acid Composite Foamed Via Supercritical Carbon Dioxide	Nurfarahin Binti Mohd. Nordin	

Parallel Session 2: ICMProTech 2021 -14 JULY 2021

	ICMProTech 2021 Schedule Virtual Room 2		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
13:00	**INVITED SPEAKER:** Selective Laser Melting (SLM) using multi diode lasers	Dr Ahsfaq Khan, The University of Sheffield, UK.	GMEET: https://meet.google.com/vci-dido-wbk
13:20	**INVITED SPEAKER:** Methods of producing modern, rapidly cooled materials with an amorphous structure	Associate professor Katarzyna Błoch, University of Technology (PCz), Poland	
13:30	School Public Relations Strategy to Improve School Branding	Dedi Prestiadi, M.Pd	
13:40	Self-Healing Epoxy Coating with Microencapsulation of Linseed Oil for the Corrosion Protection of Magnesium (Mg)	Dr. Juliawati Alias	
13:50	Production and Characterization of Activated Carbon from Baobab Fruit Shells by Chemical Activation Using ZnCl2, H3PO4, and KOH	Radhia Nedjai	
14:00	Advancements in Battery Technologies of Electric Vehicle	Mr. Rahul Kavvampally	
14:10	Laser drilling Parameter optimization using ANN for Ti6Al4V alloy	Mr.P.Vaidyaa	
14:20	Gender Equality: The Moderating Role of Motivation on the Effect of Personality and Emotional Intelligence towards Women Leadership	Hanim Hamdan	
14:30	Gender Equality: Examination on Personality, Work-life Balance, Emotional Intelligence	Hanim Hamdan	

	ICMProTech 2021 Schedule Virtual Room 2		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
	and Women Leadership in the Manufacturing-based Companies		
14:40	Poly(Lactic) Acid Reinforced with Alkaline Lignin Biocomposites Prepared by Thermal Extrusion for Sustainable 3D Printing Process	Nurul Amirah Abd Rahman	

Parallel Session 1: IConMET 2021 - 14 JULY 2021

	IConMET 2021 Schedule		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
13:00	Metal Injection Moulding Of Novel Stainless Steel-Space Holder Feedstock For Production Of Stainless Steel Foams	Assoc Prof Dr Tan Koon Tatt	GMEET: https://meet.google.com/gqf-dkkz-cbi
13:10	Tensile, Water Absorption And Thermal Properties Of Recycled Polyethylene/Nanoclay	Dr. Chen Ruey Shan	
13:20	Conductive Polymer Composites Using 3d Printing For Electronic Devices: A Review	Nisa Naima Khalid	
13:30	Analysis Of Grass Block Structure And Its Performance In Water Absorption Tests	Andre Gunanta Sembiring	
13:40	Reinforced Kenaf Composite As A Feeder For 3D Printing Application	Dr Nabilah Afiqah Mohd Radzuan	
13:50	Effect Of Diameter Hole Tube Of Plate Fin Heat Exchanger By Using Solidworks	Nik Normunira Binti Mat Hassan	
14:00	Levenberg-Marquardt, Bayesian-Regularization, And Scaled Conjugate Gradient Algorithms For Predicting Surface Roughness Accuracy On Side Milling AISI 1045	Dr. Muhammad Yanis	
14:10	A Monte Carlo Simulation For A Variable-Value Stream Mapping (V-VSM) And Risk Assessment - Failure Mode And Effect Analysis (RA-FMEA); A Case Study	Ir. Mohd Shihabudin Bin Ismail	
14:20	Study Of Springback Behavior On U-Bending Part Using Die Shoulder Patterning Method (DSPM)	Miss Nurul Jannah Binti Baharuddin	

	IConMET 2021 Schedule		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
14:30	Changes In The Forming Aspects Of The Public Service Bargains Components In Determining The General Budget Policy	Yetty Setiyaningsih, Sp, M.Eng	
14:40	Inverse And Regression Methods In Determining The Mechanical Properties Of Tin And Tialn Thin Film Multi-Layer Hierarchy Coatings On Automotive Bearings	Dr Wan Fathul Hakim Bin W Zamri	
14:50	Preliminary Study on Ergonomic Posture Analysis and Environmental Stress Exposure Toward Staff in Welding Bay	Ts. Mohd Azrin bin Mohd Said	
15:00	Experimental And Thermal Modeling Of Batik Wax Extruder Via Solidwork	Nurul Anissa Binti Mohd Asri	
15:10	Gender Equality Towards Education, Employment, Family And House Management Among Societies In Karachi, Pakistan	Dr. Amena Sibghatullah	

Parallel Session 1: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 1		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
14:00	ICOHSE5_28 Social Mediated Crisis Communication Model: A Solution For Social Media Crisis?	Siti Najihah Abd Hamid (UniMAP)	GMEET: https://meet.google.com/znu-pjjc-jks
14:20	ICOHSE5_5 A Framework For Investigating The Effect Of Unlimited Improvement On Quality Of Education	Mohammed Hamid Jebur Alalwani (Karabuk University, Turkey)	
14:40	ICOHSE5_30 Risk Factors For Stunting Incidence In Toddlers Ages 2-5 Years At Lampisang Public Health Center Peukan Bada Aceh Besar	Raudhatun Nuzul Za (Universitas Ubudiyah, Indonesia)	
15:00	ICOHSE5_37 Proactive Fraud Audit On Fraud Prevention: A Literature Review	Zardasht Abubaker Qader Barzinji (UniMAP)	
15:20	ICOHSE5_06 Behavior Financial Theory And Analysis Of Investor Behavior In The Capital Markets In Lebanon	Zina Najem Abd Ali (Karabuk University, Turkey)	

Parallel Session 2: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 2		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
14:00	ICOHSE5_11 Assessing The Implementation Of Non Revenue Water (Nrw) Management Efficiency Base On Economic Indicators: Case Of Bechah Tendong, Kelantan, Malaysia.	Mohammad Ghazi Ismail (Dr Ghazi Consultation Sdn Bhd)	GMEET: https://meet.google.com/tgm-qfyx-xvb
14:20	ICOHSE5_12 Effectiveness Of Invented Squirrels Repellent Via Traditional Knowledge In Coconut Farm	Aweng Eh Rak (Universiti Malaysia Kelantan)	
14:40	ICOHSE5_16 The Use Of Information Technology As Political Information Sources And Its Effect To Students' Political Awareness	Patmisari (Universiti Muhammadiah Surakarta)	
15:00	ICOHSE5_18 Malaysian Entrepreneurs' Strategies On Product Pricing During Covid-19 Outbreaks	Nurisyal Muhamad (Kolej Poly-Tech MARA)	
15:20	ICOHSE5_38 Role of Education and Skill on Economic Growth in Malaysia	Noorazeela Zainol Abidin (UniMAP)	

Parallel Session 3: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 3		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
14:00	ICOHSE_19 Mother Behavior Towards Tradition Of Postnatal Care In Jeulingke Community Health Centre Of Banda Aceh District	Faradilla Safitri (Universitas Ubudiyah, Indonesia)	GMEET: https://meet.google.com/qqb-ahii-tey
14:20	ICOHSE5_24 Analysis Of The Incidence Of Anemia In Pregnant Women In The Work Area Of The Peukan Bada Community Health Center, Aceh Besar Regency	Asmaul Husna (Universitas Ubudiyah, Indonesia)	
14:40	ICOHSE5_07 Linear Programming For Profit Maximization In Automotive Industry	Nursafian Bin Haris (UniMAP)	
15:00	ICOHSE5_20 The Influence Of Crisis Emotions And Attitude Towards Health Information Crisis Behavior In Social Media Among Youth In Malaysia	Nordalila Binti Nazri (UniMAP)	
15:20	ICOHSE5_22 Analysis Of Stunting Incidence Factors In Toddlers Aged 23-59 Months In The Work Area Of The Padang Tiji Community Health Center, Pidie Regency, 2020	Fauziah Andika, Skm., M.Kes (Universitas Ubudiyah, Indonesia)	

Parallel Session 4: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 4		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
14:00	ICOHSE5_15 Perimeter Description Of Research Publication On Drones By Prolific Engineering Writers	Ina Suryani Ab Rahim (UniMAP)	GMEET: https://meet.google.com/yhp-hpte-mfo
14:20	ICOHSE5_23 Relationship Of Knowledge And Family Role With Adolescent Girls' Behavior In Maintaining Reproductive Health In Smp Negeri 1 Kuta Baro Aceh Besar	Chairanisa Anwar (Universiti Ubudiyah, Indonesia)	
14:40	ICOHSE5_32 Adoption Of Big Data Analytics In Central Banks: A Conceptual Model	Shamsuddeen Muhammad Ahmad (UniMAP)	
15:00	ICOHSE5_29 The Effect Of Breastfeeding On The Events Of Breast Cancer Study Case Control In Mother Child Hospital (Rsia) Banda Aceh	Eva Rosdiana (Universiti Ubudiyah, Indonesia)	
15:20	ICOHSE5_25 Geographical Information Sytem Mappingof Agricultural Land Potential Index In West Aceh District	Muhammad Bayu Wibawa (Universiti Ubudiyah, Indonesia)	

Parallel Session 5: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 5		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
14:00	ICOHSE5_27 Bullying Behavior Among High School Students In Perlis	Manirah Bt Abdullah (UniMAP)	GMEET: https://meet.google.com/ons-wkvf-eqd
14:20	ICOHSE5_34 The Relationship Between Social Distancing And Interpersonal Communication Through Pandemic Covid	Nan Zakiah Bt Megat Ibrahim (Kolej Universiti Poly-Tech MARA, Kuala Lumpur)	
14:40	ICOHSE5_35 The Effect Of Financial Inclusion On Financial Efficiency And Financial Sustainability In Five Asean Countries	Nur Shira Ain Mohd Nasir (UniMAP)	
15:00	ICOHSE5_36 Medical Staff Engagement In Public Hospital: The Role Of Citizenship Behaviour And Trust During Covid-19 Pandemic	Ummi Naiemah Saraih (UniMAP)	
15:20	ICOHSE5_43 The Influence Of Role Ambiguity On Burnout Among Housemen In The Malaysian Public Hospitals: Organisational Citizenship Behaviour As Moderator	Muhammad Khairudden Bin Sulaiman (UniMAP)	

Parallel Session 6: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 6		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
15:30	ICOHSE5_50 Understanding Variation Of Social Accounting And Accountability: A Comparative Case Within Social Enterprise	Suraiya Ibrahim (UniMAP)	GMEET: https://meet.google.com/dqt-fafw-sar
15:50	ICOHSE5_39 The Mediating Effect Of Work Culture On The Relationship Between Total Quality Management And Employee Performance In Malaysia Manufacturing Industry	Mohd Khairulnizam Bin Zahari (UniMAP)	
16:10	ICOHSE5_40 Performance And Accountability For Sustainable Reporting And Trust: An Exploratory Study	Suraiya Ibrahim (UniMAP)	
16:30	ICOHSE5_41 Conceptualization Of Co-Worker Support: A Qualitative Study Among Human Resource Practitioners	Khairun Nisa Binti Khairuddin (UniMAP)	
16:50	ICOHSE5_03 Challenges During The Period Of Movement Control Order (Mco) Against Unimap Students Following Online Learning From The Psychological Aspects.	Mohd Arsad Bin Johanis (UniMAP)	

Parallel Session 7: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 7		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
15:30	ICOHSE5_49 Gender Equality Towards Work Family Balance, Political Matters And Gender-Based Violence: An Empirical Investigation In The Malaysian Higher Education Institutions	Ummi Naiemah Saraih (UniMAP)	GMEET: https://meet.google.com/tev-wnpm-fwd
15:50	ICOHSE5_08 Qualitative Study For Support System Entrepreneurs With Disabilities (Ewd) At Business Development Stages	Shuhairimi Abdullah (UniMAP)	
16:10	ICOHSE5_45 The Study On Sociodemographic Variables On Youths' Patriotism By Using Non-Experimental Design	Siti Norayu Mohd Basir (UniMAP)	
16:30	ICOHSE5_48 Examination of Gender Equality towards Education, Employment and Family Management among Employees of the Malaysian Higher Education Institutions	Ummi Naiemah Saraih (UniMAP)	
16:50	-	-	

Parallel Session 8: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 8		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
15:30	ICOHSE5_52 Determinant Of Foreign Direct Investment Inflow In Asean+3 Countries	Dayang Hasliza Binti Muhd Yusuf (UniMAP)	GMEET: https://meet.google.com/kpg-natk-spd
15:50	ICOHSE5_53 Funding Sources And Organizational Sustainability - A Conceptual Framework For Social Enterprises	Mas Ervina Samsuddin (UiTM)	
16:10	ICOHSE5_54 Predictor Selection For Progression And Development Of Diabetic Nephropathy Among Diabetes Mellitus Type 2 Patients	Syafawati Ab Saad (UniMAP)	
16:30	ICOHSE5_60 Privacy Concerns As Predictor In Online Self-Disclosure: A Concept	Adila Ismail (UniMAP)	
16:50	ICOHSE5_44 Research Trends On Pekasam As Heritage Food In Malaysia	Ina Suryani Ab Rahim (UniMAP)	

Parallel Session 9: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 9		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
15:30	ICOHSE5_26 The Role Of Safe Digital Branding Practices On Cyber Security Issues In Malaysia	Nurhafiz Bin Abd Razak (UUM)	GMEET: https://meet.google.com/xwd-zyaz-yee
15:50	ICOHSE5_17 Disaster Information By National Disaster Management Agency (Nadma) On Social Media During Disaster: A Qualitative Perspective.	Aida Filzah Binti Ramli (UniMAP)	
16:10	ICOHSE5_21 The Effect Of Innovation Capability And Digital Technology On The Profitability Of Msmes In The Covid-19 Pandemic Time	Soraya Lestari, S.E., M. Si (Universiti Ubudiyah, Indonesia)	
16:30	ICOHSE5_14 The Rhetorical Moves Of Abstracts In Thesis	Faharol Bin Zubir (UniMAP)	
16:50	ICOHSE5_26 The Role Of Safe Digital Branding Practices On Cyber Security Issues In Malaysia	Nurhafiz Bin Abd Razak (UUM)	

Parallel Session 10: ICOHSE5 - 14 JULY 2021

	ICOHSE5 Schedule Virtual Room 10		
TIME	**TITLE OF PRESENTATION**	**PRESENTER**	**PARALLEL SESSION LINK**
15:30	ICOHSE5_31 The Role Of Companies And Financiers In Building A Creative Economy And Promoting A Culture Of Creativity And Innovation Among Students Universities	Amani Ali (UniMAP)	GMEET: https://meet.google.com/gkt-mmxh-ahj
15:50	ICOHSE5_51 Mobile Banking Adoption Among Smes Using Utaut2	Mohd Rosli Abdul Ghani (UniMAP)	
16:10	ICOHSE5_59 Health Related Social Media Use : A Systematic Review	Husna Afifi Mohd Yusof (UniMAP)	
16:30	ICOHSE5_61 Psychological Factors Influencing Online Buying Behaviour	Abdul Rahman Abdul Manaf (UniMAP)	
16:50	ICOHSE5_42 Political Connection And Earnings Management In Government Statutory Bodies	Haslina Binti Hassan Basri (UniMAP)	

PART III
KEYNOTE SPEAKERS

KEYNOTE SPEAKER 1

Przemyslaw POSTAWA
Associate professor (dr hab. inż. prof. PCz)
Czestochowa University Of Technology (Pcz), Poland

Associate Professor Przemyslaw POSTAWA was awarded an MSc in Mechanical Engineering by the Czestochowa University of Technology in 1998. In 2003 he was awarded a PhD in the field of Building and exploitation of machines. In 2014 he presented his habilitation achievement “Theoretical and technological issues of thermodynamic and rheological phenomena of polymer processing”. In 2012 he took part in project of Polish Ministry of Science and Higher Education TOP500 Innovation and Commercialisation and spent 3 month at internship program at Stanford University in California USA. Between 2016 and 2019 was a Head of the Department of Polymer Processing and the Dean's proxy for cooperation with business. Now he is a Head of Department of Technology and Automation.

Professor Postawa is an author of over 120 national and international publications, 5 patents, numerous scientific opinions and research works for industry. He conducted over 70 specialist technological trainings in different companies plastics and automotive industries in Poland. He participated in many conferences and industry seminars presenting the results of scientific research and propagating modern technologies and expert knowledge in the field of polymer processing. From 2018, the owner of the consulting and training company Poliexpert.

For his scientific and organizational activities, he received 16 awards, including the Prize of the Rector of PCz and the Minister of Science and Higher Education and others. He was the chairman or member of the organizing committee of 12 scientific conferences, seminars and steering committee meetings of the FP6, FP7 and H2020 Projects. He was a member of the Senate of the Czestochowa University of Technology and the chairman of the Senate Committee for Students of the PCz. He is a member of many domestic and foreign scientific associations and a reviewer.

For his Innovation activity he got a numerous awards and medals: King Abdulazziz University (Saudi Arabia) - Special Award and Special Prize of Korea Patent Attorneys Association for Innovation Composite Lightweight Agregates CLA – innovative and ecological approach for waste management.

Professor Postawa scientific field of interests is improvement of processing technologies of polymers and possibilities of recycling polymer materials. In his research he use different analytical methods and equipment form thermal analysis group (DSC, DMA, STA, TGA) and technological machines: injection, extrusion and compression moulding.

KEYNOTE 1 SPEECH TITLE

"Biobased and biodegradable polymer materials and its composites – mechanical properties and application"

Polymer materials do not have a very good reputation in recent times due to their problems with recycling from municipal waste. Most of this waste is represented by various types of packaging: PET bottles, films, tubes, caps. These materials has an unique properties, it is cheap and fast for large-scale production but over 40 % of total production of polymers will transform into packaging. We can see a lot of floating packaging, foil, disposable gloves in oceans or lakes. European Union regulations prohibit the use of disposable packaging products from 2021 but in times of a pandemic, disposable packaging allows us to maintain cleanliness and the possibility of using catering, restaurants. We can use biodegradable polymers which has a possibility of degradation in the soil and control condition of composter. There is a one barrier of that solution – price of that kind of materials. There is a one way to make a better material and cheaper one. Physical modification of polymer materials is easy way to cheap and fast modification mechanical properties and reducing raw material in produced parts. There are a lot of fillers can be used in polymers – calcium carbonite, cretaceous (chalk), geofillers (minerals), biochar and wastes from plant production. That's materials and its composites are one of the area of scientific research conducted in Department of Technology and Automation (Polymer Processing Team). Well equipped technological and research laboratory gives our scientists and visiting students the opportunity for development and cooperation with industry and other universities.

KEYNOTE SPEAKER 2

Profesor Emeritus Dr.Mohamed Almory Mohammed Ismail
Faculty of Education, Zagaziq University, Egypt

Professor Almory graduated in BA in Educational Psychology, Zagazig University [1976] and MA in Educational Psychology, - Zagazig University [1981]. He later obtained his PhD in Educational Psychology, Zagazig University [1984] on focusing on the relationship between the factors of the ability to think creatively and some of its defensive aspects.

He is now a Professor Emeritus at Zagazig University, and an Adviser to the President of the University for Measurement and Evaluation Center Affairs, Zagazig University. Apart from that, he is the Scientific advisor to Thebes Academy, President and Founder Arab Society for Measurement and Evaluation as well as appointed as the Professor at Umm Al-Qura University, King Fahd National University. He supervised and enternal, external over than 45 of theses master's and doctorate in many middle east countries. He also works as a private consultant at Amman University

KEYNOTE 2 SPEECH TITLE

"The role of universities in building the creative economy and promoting a culture of creativity and innovation"

KEYNOTE SPEAKER 3

Associate Professor Marcin Nabiałek, dr hab. prof. P.Cz.
Czestochowa University of Technology (PCz), POLAND

Associate Professor Marcin Nabialek was awarded an MSc in Mathematics in 1999, and, three years later, an MSc in Physics - both by the University of Opole in Poland. In 2007, after defending hisdoctoral dissertation, on “Production process, microstructure and magnetisation processes of the bulk amorphous and nanocrystalline Fe-based alloys”, he was awarded a PhD in the field of Materials Science. In 2012, his habilitation thesis, on “Production process and properties of the amorphous and nanocrystalline iron-based alloys” was presented in Czestochowa (Poland).

Between 2008 and 2019, Professor Nabialek has been presented with a considerable number of diplomas and congratulatory letters by the Minister of Science and Higher Education, as well as receivingseveral awards for International Innovation Achievements. During the same period, he was presented with over 200 prestigious awards at international exhibitions of inventions and technical advances. In 2011, he was awarded the Chivalry’s Cross - Chevalier MERITES DE L'INNOVATION LABOR IMPRODUS OMNIA VINCIT (certificate no. 11509) - awarded by the Belgian Royal Chapter.

In 2012, Professor Nabialek was awarded six significant awards and medals: "WORLD INVENTOR AWARD" order, awarded by the WIAF Commission and President Korean Invention News, Seoul,

South Korea,"THE PRIDE OF THE NATION ACADEMIC AWARD" order, awarded by the President of Tiiawa, handed by the Prime Minister of Taiwan, Taipei Taiwan, (certificate no. 005011),"AGPI - Moldovan National Agency for Intellectual Property" medal, and the Tadeusz Sendzimir HONORARY MEDAL SPWIR: for his activity in the development of new materials - amorphous and nanocrystalline alloys.In 2013, he was awarded the BRONZE CROSS OF MERIT for his scientific achievements by the President of the Republic of Poland. During his scientific career, he has been presented with more than 30 awards by the Rector ofCzestochowa University of Technology.

Professor Nabialek's interests lie in magnetic physics and materials engineering. He is a nationally-recognised specialist in the field of manufacturing amorphous and nanocrystalline materials; also, a designer of experimental equipment and technologies enabling the production of modern functional materials with special (specified) properties. Currently, he is a co-author of over 300 scientific papers, of which over 200 are peer-reviewed papers (157 SCOPUS, Web of Science). He is also a co-author of four monographs and one book. His H index is 17. His work has been cited almost 800 times (SCOPUS, Web of Science). He has presented his scientific achievements at many scientific conferences.

KEYNOTE 3 SPEECH TITLE

"Modern supercooled materials with amorphous and nanocrystalline structure"

Metallic amorphous materials are a group of materials that exhibit a number of interesting properties. Their properties are much better than their crystalline counterparts with the same chemical composition. The reason for these differences is their structure. In addition, the properties of these materials can be improved as a result of the designed processes - leading to their controlled nanocrystallization. It should be noted that the production of these materials is very difficult. Therefore, scientists from all over the world are constantly looking for new production methods, as well as new chemical compositions and nanocrystallization methods. At the Department of Physics of the Częstochowa University of Technology, work is being carried out to improve the techniques of producing rapidly cooled materials and the single-stage process of producing nanocrystalline materials. Together with the team of prof. M. Nabiałek has developed over 100 new supercooled alloys showing good glass transition properties. The author's achievements have been patented and several additional patent applications are pending approval.

KEYNOTE SPEAKER 4

Professor Datuk Dr. Rokiah Haji Omar
University Community Transformation Centre, UCTC, UKM

Professor Datuk Dr Rokiah Omar is a leading optometrist and academician at Universiti Kebangsaan Malaysia (UKM). She spent almost 31 years of her academic life at UKM and now a Professor at the Optometry and Visual Science Program, Faculty of Health Sciences, UKM. She is currently the Director at University Community Transformation Centre (UCTC), UKM. Her area of expertise is Low Vision. Her research interests include low vision rehabilitation, special population needs, quality of life, Public Health Optometry and Sports Vision. She received many research, innovation grants and awards at national and international levels. Her research output has impacted in the reduction of vision impairment among children in Malaysia where it became a policy where children at the age of 4, 5 and 6 years old will receive vision screening at all Health Clinics, Ministry of Health Malaysia since 2011. She supervises many research students at undergraduates, Masters and PhD. levels. She played an active role in the establishment of low vision services and prevention of blindness in Malaysia.

In 2006 Professor Datuk Dr Rokiah became the first optometrist in Asia to be inducted as an International Visually Impaired (VI) Classifier by the International Blind Sports Federation (IBSA) and International Paralympic Committee (IPC) in 2011 where she provided consultation as International VI classifier services all over the world. She is currently among the 70 VI International classifiers who are licensed to classify VI athletes for paralympic games. The

biggest sports event that she provided consultation was the London Paralympic Games 2012. She is the Chairman of Classification Committee of Medical Sports Science Committee (MSSC) of Asian Paralympic Committee (APC) since 2014 to 2018 and Classification Director of ASEAN Paralympic Sports Federation (APSF) since 2015 to date. She is also head for VI Classification for the Majlis Paralympic Malaysia (MPM) since 2006 to date. Her contributions for the disable sports not olny for the VI but also for physical and intellectual impairments, where as head of Classification at ASIA level she and her team has developed the APC Athlete Classification Rules which is currently being use by 44 nations of APC members as the Athletes Classification Code since 2017.

She also improved the classification process and standard in Asia, ASEAN and National levels since 2014. She is being referred for consultation by the Incheon Asian Para Games Organising Committee (IAPGOC) 2014 for the 2nd ASIAN Para Games in Korea 2nd biggest sport event in the world after Paralympic, 8th ASEAN Para Games 2015 hosted by Singapore, 9th ASEAN Para Games 2017 hosted by Malaysia and Indonesian Asian Para Games Organising Committee (INAPGOC) 2018 for the 3rd ASIAN Para Games in Jakarta. She also involved with many volunteerism and community engagement projects to provide vision screening and free spectacles to needy family, school children, elderly and disadvantage population. She also headed and initiated many impactful community projects at Universiti Kebangsaan Malaysia.

KEYNOTE 4 SPEECH TITLE

"Leadership in Social Innovation and Entrepreneurship Towards Sustainability"

KEYNOTE SPEAKER 5

Professor Dr.V.K.Bupesh Raja, PhD,
Sathyabama Institute of Science and Technology,
Chennai, Tamil Nadu, India.

Dr.V.K.Bupesh Raja is Professor and Head at Department of Automobile Engineering, School of Mechanical Engineering, Sathyabama Institute of Science and Technology, Chennai, India. He completed his master's degree in Computer Aided Design and under graduation in Mechanical Engineering, from University of Madras, Chennai, Tamil Nadu, India, and obtained Ph.D. degree in Mechanical Engineering from Sathyabama University, Chennai, Tamil Nadu, India. He completed his Overseas Research Fellowship (ORF) from Materials Division, Department of Mechanical engineering, National University of Singapore (NUS), Singapore. He has more than 20 years of experience in teaching and research. He has produced 5 Ph.D. scholars as a supervisor. His current area of research includes advanced Welding Techniques, Super Alloys, Light Metals, Material Characterization, Material Technology, Laser Material Processing and Surface Modification, Bioimplants, Composites, Geopolymer, Corrosion and Wear.

He has published more than 120 papers in International/National journals, and participated and presented more than 130 research papers in International/National conferences. He is a member of several professional bodies like, The Indian Welding Society (IWS), The Institution of Engineers (IE) India, The Indian Laser Association (ILA), Madras Metallurgical Society (MMS), Indian Society for Technical Education (ISTE), etc. He has successfully coordinated and completed several funded research projects.

KEYNOTE 5 SPEECH TITLE

"Drilling Holes without Chip"

Traditionally holes are made in metal by drilling with a multi point cutting tool. Hole making is a crucial process to facilitate assembly of components using fasteners. Friction drilling has evolved as a nontraditional technique for hole making. Friction drilling involves making holes in metal with the aid of frictional heat, through which the material in plastic state is extruded to form the hole. The friction drilling process is also called thermal drilling, form drilling, flow drilling, or friction stir drilling. Generally materials having thickness less than 5mm can be drilled using friction drilling process. The conical tipped friction drill tool is made of a wide variety of materials namely tool steel, high speed steel, tungsten carbide and H13 steel. The tool life could be increased by heat treating and applying wear resistant coatings. The selection proper process parameters and application of optimization techniques such as design of experiments and Taguchi method gives better quality holes. Since the friction drilling produces does not produce any chip and needs no coolant, this technique is a potential green manufacturing technology.

PART IV
INVITED SPEAKERS

INVITED SPEAKER 1

Associate professor Katarzyna Błoch, dr hab. prof. P.Cz.
Institute of Physics, Faculty of Processing Engineering and Materials Technology
Czestochowa University of Technology (PCz), POLAND

Dr hab. Katarzyna Błoch (associate professor PCz) is working at the Institute of Physics of the Częstochowa University of Technology in Poland from 2011 to the present. In 2011 she obtained a PhD degree in physical sciences at the University of Lodz in Poland. In 2018 Katarzyna Błoch became a habilitated doctor in the field of technical sciences in the discipline of materials engineering. Her scientific work is related to the production and testing of the properties of a new group of functional materials, which are amorphous and nanocrystalline alloys characterized by unique properties, in particular magnetic. The achievements of Katarzyna Błoch has about 200 (reviewed papers) bibliometric items. The most important include 82 publications placed in the SCOPUS and Web of Science databases. She is also the author of 20 scientific publications published in magazines from the so-called LMCzPB, one monograph and one popular science publication. He is a recognized reviewer in journals on the JCR list. Scientific work and inventive achievements dr hab. Katarzyna Błoch was honored with the

honorary order of "World Invention Intellectual Property Associations" awarded by the WIIPA Commission and chairman Hsieh HsinMing and the honorary order of "World Inventor Award" given by the World Inventor Award Festival and chairman of Korean Invention News, Seoul, South Korea. She also received the Korea Invention Academy (KIA) honorary award from Dean Soung-Mo Hong for merits in the materials science category. During the conduct of his scientific and research and organizational activities, dr hab. Katarzyna Błoch has been awarded 18 diplomas of the Minister of Science and Higher Education in Poland and honored with 2 awards of the Minister of Science and Higher Education in Poland. In addition, her scientific activity was awarded 15 awards by the rector of the Częstochowa University of Technology (Poland).

INVITED SPEECH 1 TITLE:

Methods of producing modern, rapidly cooled materials with an amorphous structure

Amorphous materials in the form of alloys are one of the most modern groups of materials. The interest in these materials is due to their unique properties, which are much better compared to their crystalline counterparts with the same chemical composition. Initially, such materials were produced in the form of coatings and thin tapes, the so-called classic amorphous materials (seventies). Obtaining the amorphous structure required high cooling rates in the range of 105-107 K/s. However, it was practically impossible to produce a material thicker than several tens of micrometers at such high cooling rates. The thickness of the produced materials alone was insufficient for their full application. In 1989, three empirical criteria were presented, the application of which makes it possible to systematically produce amorphous materials with a thickness greater than 100 micrometers. This group of materials has been called bulk amorphous materials. Mentioned criteria: the alloy should consist of more than three components whose atomic radii should differ by more than 12% (at least the major components of the alloy) and have a negative heat of mixing. The alloy compositions selected in this way should show good glass transition ability, which means that they can be produced at a much lower cooling rate. Since then, many technical solutions have been developed to enable the production of bulk amorphous alloys. At the Częstochowa University of Technology in Poland, there are several devices with the use of which amorphous materials are produced. The author of the paper is the main designer of one of these devices. During the lecture, four devices for the production of bulk amorphous materials will be discussed, in which the following is used: the suction method, the injection method, a combination of the injection and suction methods, and a method in which the liquid alloy is placed in a copper mold using centrifugal force.

INVITED SPEAKER 2

Dr Kamalakanta Muduli, PhD, FIE
Associate Professor
Department of Mechanical Engineering
Papua New Guinea University of Technology

Dr Kamalakanta Muduli, is presently working as Associate Professor in Department of Mechanical Engineering, Papua New Guinea University of Technology, Lae, Morobe Province, Papua New Guinea. He has obtained PhD from School of Mechanical Sciences, IIT Bhubaneswar, Orissa, India. He has obtained Master's degree in Industrial Engineering. Dr Muduli has over 15 years of academic experience in Universities in India and Papua New Guinea. Dr Muduli is a recipient of ERASMUS+ KA107 award provided by European Union. He has published 46 papers in peer reviewed international journals and more than 25 papers in National and International Conferences. He has been also serving as an editorial board member of few journals and books. Dr Muduli also has guided three PhD students. He has received a fund of 33500 Kina for conducting a study in Health Care Waste Management Practices in Papua New Guinean Health Care Establishments. Dr Muduli is a fellow of Institution of Engineers India. He is also a senior member of Indian Institution of Industrial Engineering and member of ASME.

INVITED SPEECH 2 TITLE:

Assessment of Musculoskeletal Disorder in Foodservice Industry in Emerging Economy

Musculoskeletal Disorder (MSD) is a major issue affecting many people particularly working for longer shifts in industries in today's modern societies. It is due to the higher demand of goods and services from various industries and companies operating for long period of hours each day. People working in Papua New Guinean industries are also suffering from MSD like those working in other developing nations. However, the issue of work-related musculoskeletal disorders (WMSDs) in industries/factories and agriculture sector is not that addressed as it should be. Relevant data was collected after critical observation at a food catering unit in Papua New Guinea. The most prevalent MSD at the case organization is observed to be knee pains. From assessment data based on Cornell questionnaires the results indicated that Knees have higher MSD risk for all the 15 samples that were interviewed. Full body analysis data indicates that for both male and female, body parts below the hip has higher MSD score whereas for female the right knee has higher MSD score. According to the P-chart analysis 26.67% of the 15 workers have higher prevalence to MSDs while 73.33% have lower prevalence to MSDs. Results also indicated that right hand has high MSD risks for males in comparison to females. Further, analysis of the results revealed that the 15 workers have demonstrated high MSDs risk for right-hands, 26.67% have high MSDs risk for left hands.

INVITED SPEAKER 3

Dr. Ashfaq Khan
Department of Mechanical Engineering
The University of Sheffield,
United Kingdom

Dr Ashfaq Khan is working at the centre for 'Manufacturing using Advanced Powder Processes (MAPP)', University of Sheffield. MAPP is the EPSRC Future Manufacturing Hub in UK's High Value Manufacturing Catapult. MAPP delivers on the promise of powder-based manufacturing to provide low energy, low cost, and low waste high value manufacturing routes and products to secure UK manufacturing productivity and growth. MAPP is led by the University of Sheffield and brings together leading research teams from the Universities of Leeds, Manchester and Oxford, UCL, and Imperial College, together with 20 industry partners.

Dr Khan, holds a PhD from the University of Manchester, UK in the area of laser material processing. He has since then carried out research and academic work related to design, machining and additive manufacturing. He supervised an industrial grant (SNGPL Ltd, Pakistan) for five years (2014-2019) to design and manufacture commercial systems. He is the co-inventor for the world's first optical nanoscope; the research was published in Nature Communications, and attracted huge public interests and media coverage including BBC, New York Times, and Daily Mail. It was awarded first prize in

a Royal Academy of engineering poster competition event in nano-engineering, and honoured by the RCUK as one of 50 big ideas for the future in year 2011. Ashfaq has several well sighted publications in the field of design and additive manufacturing. He is a British chartered engineer (CIMechE) and Professional Engineer by PEC Pakistan. Dr Khan's current research is in the area of additive manufacturing using selective laser melting. He specialises in additive manufacturing of metals and has speciality for additive manufacturing of highly reflective jewellery materials including gold, platinum, silver and its alloys. Also he is working on the development of a hydride diode area melting system to increase the productivity and net shape manufacturing of titanium alloys. He is collaborating closely with the industry to overcome the limitations of additive manufacturing and commercialisation of new systems and materials.

INVITED SPEECH 3 TITLE:

Selective Laser Melting (SLM) using multi diode lasers

Laser-based additive manufacturing (AM) technologies have developed to a stage where they are massively used to manufacture end-use high-value components from a variety of materials. Compared with traditional fabrication techniques, AM processes are known for their ability to fabricate geometrically complex components that can be easily customised without significant additional cost or lead time delay.

Selective laser melting (SLM) is an AM process that uses a powder bed fusion approach to fully melt layers of powdered metal and create 3D components. Current SLM systems are equipped with either single or multiple (up to four) high power galvo-scanning infrared fibre laser sources operating at a fixed wavelength of 1064 nm. At this wavelength, a limited laser energy absorption takes place for most metals (e.g. alloys of aluminium have less than 10% absorption and titanium 50-60% absorption). The lower absorption of 1064-nm laser sources requires higher laser powers to compensate for the loss of energy due to reflectivity. This makes the use of 1064-nm lasers within current powder bed fusion SLM systems energy inefficient.

Though industrial uptake of the technology has grown in recent years, SLM has drawn criticism due to limits on productivity. Recent studies have attempted to overcome the limitations of low absorption and efficiency by using a shorter wavelength laser to process powdered metal using Semiconductor diode lasers (wavelengths 405–3300 nm). Diode lasers are among the most efficient lasers sources with up to 60% wall-plug efficiency thus offering the potential to decrease the operational cost and occupies a fraction of the space compared to a fibre laser. These advantages of the diode lasers bring us to our innovation to use multiple diode lasers for area processing to achieve massively high production rates.

Part V
TECHNICAL COMMIITEES

ICMProTECH 2021 and IConMET 2021

Organizer:

- Centre of Excellence Geopolymer and Green Technology (CEGeoGTech) UniMAP.

Co -Organizer:

- World Invention Intellectual Property Associations (WIIPA), Taiwan
- Faculty of Mechanical Engineering Technology (FTKM), UniMAP

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Professor Dr. Che Mohd Ruzaidi Ghazali (Universiti Malaysia Terengganu, Malaysia)
Assoc. Professor Ir. Dr. Shayfull Zamree Abd Rahim (Universiti Malaysia Perlis, Malaysia)
Dr hab. Marcin Nabiałek, prof. PCz (Częstochowa University of Technology, Częstochowa, Poland)
Dr hab. inż. Przemysław Postawa, prof. PCz (Częstochowa University of Technology, Częstochowa, Poland)
Dr hab. Katarzyna Błoch, prof. PCz (Częstochowa University of Technology, Częstochowa, Poland)
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Special Thanks to
Mr Ahmad Shauqi Amar bin Muhammad

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- Faculty of Applied and Human Sciences, UniMAP

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Tengku Suriani Tengku Yaakub (UniMAP)
Dr. Yasmin Ahmad (UniMAP)

Part VI
GENERAL INFORMATION

Center of Excellence Geopolymer & Green Technology (CEGeoGTech)

CEGeoGTech was established in July 2011 and located at Taman Muhibbah, Kangar, Perlis. The establishment of CEGeoGTech was made with an intention to induce innovation in green material techology among researchers at Universiti Malaysia Perlis. This centre of excellence now combines experts in various fields to support the academic and research structure in the generation of human capital that cintributes to the development of high quality research. CEGeoGTech is motivated to become the main driver in research and academic activities.

CEGeoGTech has NINE (9) fields if research as below;

- Geopolymer
- Polymer Advanced
- Electronic Packaging Materials
- Green Ceramic
- Elechtrochemistry of Green Materials
- Green Invironment
- Green Design and Manufacture
- Materials in nanotechnology
- Green Materials for Electronic Applications

VISION, MISSION AND OBJECTIVE of CEGeoGTech

Vision

To be a world-class center of excellence in driving research and staff in the field of gopolymer and green technology

Mission

To produce exemplary academic researchers in line with the nation's development and industrial competitiveness agenda

Objectives

- To develop technology-related innovations in geopolymer & green technology via research activities
- To develop researches in reaching visibility and international level and industries

Visit our website: https://cegeogtech.unimap.edu.my/

Part VII

ABSTRACTS for

ICMProTech 2021
1st International Conference on Material Processing and Technology 2021

IConMET 2021
1st International Conference on Manufacturing Engineering Technology 2021

ICoHSE5
5th International Conference on the Roles of the Humanities and Social Sciences in Engineering 202

Erosion Wear Characteristics of Novel AMMC Produced by Metallurgical Powdered Method

R K Behera[1], B P Samal[1], A Mohamaed[2], P K Parida[3], S C Panigrahi[4] and *K K Muduli[2]

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[2]Department of Mechanical Engineering, *Papua New Guinea University of Technology, Lae, Morobe Province, PMB 411, Papua New Guinea.*
[3] Department of Mechanical Engineering, College Engineering and Technology, Bhubaneswar, Odisha, India.
[4] Raajdhani Engineering College, Bhubaneswar, India.

Abstract. Currently, the world of material requires intensive researches to discover a new-class of materials with lower in weight, greater in strength and better in mechanical properties. This led to the study of light and strong alloys or composites. The study focuses to produce attractive powdered novel aluminium composite with an appreciable density, easy machinability, less corrosiveness, high strength, light weight and low manufacturing cost product. In this research, an aluminium metal matrix composites (AMMC) (Al-0.5Si-0.5Mg-2.5Cu-15SiC) is being developed by using the metallurgical powdered method and is subjected to the investigation of erosion wear characteristics. Here the solid particle erosion test was conducted on AMMC samples. The article presents the design of Taguchi experiments and statistical techniques of erosion wear characteristics and the behaviors of the composite.

Mechanical Properties of Particleboard using Acacia mangium wood particles binded with seaweed-based adhesives

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Abstract. The purpose of this study was to evaluate the mechanical properties of particleboards made from *Acacia mangium* wood particles binded with three different types of seaweed-based adhesive. Red seaweed (RS), brown seaweed (BS) and green seaweed (GS) were used as the seaweed-based adhesives., while particleboard using urea formaldehyde (UF) adhesive was produced as control. Adhesives and wood particles were mixed and then undergone mat-forming, pre-pressing, hot-pressing and conditioning process. The test pieces for bending test (Modulus of Elasticity, MOE; Modulus of Rupture, MOR), and internal bonding strength (IB) were cut into size according to JIS A 5908: 2003. From mechanical properties results attained, for internal bonding strength test, all boards using RS, BS and GS adhesives were found to be significantly different at $p \leq 0.05$. Apart from that, RS adhesive showed highest MOE and MOR at 529.4259 N/mm^2 and 1.7900 N/mm^2, respectively. As a conclusion, the mechanical properties of particleboard using RS, BS, and GS adhesives showed RS stands out as the better adhesive among them which have significant effects on its strength.

A Review on the Effect of Heat Treatment on Microstructure and Mechanical Properties of AlSi10Mg Fabricated by Additive Manufacturing

*S.P. Tan[1], M.S. Shaari[1], Akiyuki Takahashi[2] and M.R.M. Akramin[1]

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[2]Department of Mechanical Engineering, Faculty of Science & Technology, Tokyo University of Science.

Abstract. Additive Manufacturing (AM) throws away much of the traditional techniques in manufacturing process. Hence, forcing the whole industry to sketch and develop a complete novel technique in studying and optimizing material properties. This makes AM has go through a remarkable development over the previous many years. The maturity of this technique need strong literatures supports on mechanical properties effected by post-process for wider customized application. The review included the manufacturing process, the change of microstructural behaviour and material properties by post processing, and the effect of fatigue crack growth of AM material. This technology will revolutionize the manufacturing of goods and markets in future.

Simulation of Friction Stir Spot Welding of Copper and Aluminium During Plunging Phase

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Abstract. Simulation is limited and remains briefly addressed in the literature of friction stir spot welding (FSSW) process in joining dissimilar copper and aluminium. Thus, this study simulated the FSSW process of copper and aluminium to investigate the peak temperature during the plunging phase produced by all possible combinations of levels for tool rotational speed, plunge rate, and plunge depth according to the full factorial design. The modeling was established by Coupled Eulerian-Lagrangian (CEL) model and 'dynamic, temperature-displacement, explicit' analysis. The highest peak temperature of 994.4 ^{o}C was produced by 2400 rpm rotational speed, 100 mm/min plunge rate, and 1.6 mm plunge depth. The combination was suggested to be the optimum welding parameters in joining copper to aluminium as sufficient heat input was essential to soften the area around the welding tool and adequately plasticize the material. Three sets of confirmation tests presented consistent responses with a mean peak temperature of 994.4 ^{o}C, which validated that the response produced by the suggested optimum welding parameters was reliable. The statistical result reported that the variability in the factors could explain 84.12% of the variability in the response. However, only the rotational speed and plunge depth were statistically significant. The residual plots showed that the regression line model was valid.

Mechanical properties of Halloysite Nanotubes (HNTs) Filled Polyamide 11 (PA 11) Nanocomposites

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Abstract. This study focused on the influence of different filler loading on mechanical properties of bio-based polyamide 11 (PA 11) and Halloysite nanotubes (HNTs) nanocomposites. Nanocomposites of 100 phr of PA 11 with 2, 4 and 6 phr of HNTs were compounded using the Brabender twin-screw extruder and injected the materials into the injection molding machine processes. Tensile, flexural and impact testing will be observed a homogenous dispersion of HNTs in PA 11 matrix. Incorporating of PA 11/HNTs will improve the stiffness and interfacial adhesion between the matrix and filler. The results show the effectiveness of HNTs on the mechanical properties of the PA 11 matrix. Thus, PA 11 can become a custom-made material with multifunctional characteristics with the addition of nanofillers.

Poly(Lactic) Acid Reinforced with Alkaline Lignin Biocomposites Prepared by Thermal Extrusion for Sustainable 3D Printing Process

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Abstract. The focus of this work is the mechanical characterization of biomaterials produced by 3D printing based on fused filament fabrication (FFF) process that has been mainly used for prototype rather than functional components due to the limited mechanical properties of pure thermoplastics parts. Addition of reinforcements from natural fiber has been adopted to improve the mechanical properties of the 3D printed parts. In this study, alkaline lignin powder that has been extracted from oil palm empty fruit bunches (OPEFB) via alkaline extraction process were used as filler in the production of biocomposites with poly(lactic) acid (PLA). Poly(lactic) acid filaments filled with 1% of alkaline lignin powder and has been compared with the presence of 5% of epoxidized palm oil (EPO) by means of thermal extrusion and further proceed with 3D printing. The samples were mechanically characterized using tensile tests and the fractography were observed. The 3D printed samples of the filament compositions also exhibit similar trend where the said filament has the best mechanical properties when the EPO is incorporated in the filament.

Conceptual Model of Enabler Factors for Effective Managing Safety Management and Safety Performance of High-Rise Building Construction Projects

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Abstract. Safety and health issues have always been a major challenge and concern for the construction industry. Construction accidents still dominate the entire construction industry because of the nature of the industry that leads to accidents and fatalities. This paper aims to provide a conceptual relationship model of enabler factors for effective safety and health management in managing high-rise building projects. The basis of this review is the numerous publications related to safety and health management in construction projects specifically for the high-rise building construction projects from the years 2000 to 2021. The methodology carried up involves systematic review, content analysis, and conceptual model development. Twelve (12) enabler factors of safety and health management and six (6) safety performance indicators are uncovered by this review. The result of the study will be used for the development of questionnaire instruments for empirical study in the next direction of research.

Exploring the potential of durian skin fibre based biocomposites as sustainable 3D printable filament

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Abstract. Three-dimensional (3D) printing is an additive manufacturing technology which drives a controlled addition of materials layer-by-layer to build objects of simple to complex geometries from 3D model data. Due to the ability of the 3D printing technology to custom produce printed parts with desired internal geometries; it has a spectrum of industrial and commercial applications. Current 3D printers preferred fused filament fabrication (FFF) or fused deposition modeling (FDM), which is one of the most versatile technique, cost effective, simplicity, broad material compatibility, high prototyping speed and low environmental impact. For these reasons, this research studied the potential of prototype development of durian skin fibre (DSF) based biocomposites using extrusion to be used as 3D printable material for FDM printing technique. Polylactic acid (PLA) was extruded with DSF in the presence of epoxidized palm oil (EPO) as compatibilizer. The filament produced shall be cost-effective, possess quality characteristics required by consumers, heat-resistant and recyclable. PLA incorporated with DSF showed similar tensile performances to unfilled PLA. The natural fibres incorporated also increased the degradation temperature of PLA biocomposite at certain optimum loading. It is hypothesized that filament produced from PLA/DSF will substitute current polymer filaments used for most 3D printers.

Characterization of Irradiated Wood Plastic Composites (WPCs) Consumer Product

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Abstract. This research paper emphasizes the characterization of irradiated wood plastic composites for consumer product. Throughout this research, it is precisely conducted to observe the mechanical and physical properties of WPCs and their ability to fit in the market globally. The study also carried out to promote WPCs product that came naturally from renewable sources. WPCs in this research can be defined as mixture of wood that can be replaced with pineapple fiber in a polymer matrix. Composite that used in this research mainly consists of 40% polyethylene (PE), 50 % pineapple fiber and the rest is coupling agent that enhance the WPCs mixture. After undergoes several processes such making the raw sample of WPCs mixture, the WPCs were then irradiated under required dose levels of 0.5, 1, 1.5, 2, 2.5 kGy with the aid of the Gamma Cell Irradiator. Soon after, the irradiated WPCs then undergoes characterization process using Fourier Transform Infrared Spectroscopy (FTIR) and Scanning Electron Microscopy- Energy Dispersive X-Ray Spectroscopy (SEM-EDX). Diagnosis on the morphology of WPCs found that there was significant difference between the radiated and irradiated surfaces.

Future of Vegetable Based Ink- A Review

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Abstract. This review explain the production of vegetable-based ink from the *Fabaceae* family. It is something that can generate our knowledge about ink because it is friendly to the environment and has vibrant colors compared to other types of ink. In this part, there will be a review of the discovery of vegetable-based ink, the physical and chemical characteristics of the peanut oil used in the making of vegetable-based ink, the different properties for peanut and soy oil, alkali-refined treatment, offset lithography printing, the effect of irradiation towards the peanut oil, and the benefits of using vegetable-based ink.

Utilization of Biomass Flyash in Cementitious Application

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Abstract. The use of biomass fly ash in concrete and composite materials is designed to ensure optimum use of fly ash and the development of the economic process. This report justifies the purpose of this project and why it is important for the environment and human health to use fly ash. The report also suggests how to use fly ash best and how to archive it.

Fault Detection And Diagnostic For Air Conditioning System

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Abstract. In this paper, a fault detection and diagnosis method is proposed and air quality parameters are considered. Modern mechanical and electrical tools such as digital power meters have been used in a variety of wiring systems and can measure up to three systems in single-phase two-wire circuits. As a result, the highest relative humidity observed, from 12 Pm to 1 Pm, with a value of 80% or more with respect to the non-conversion zone was found.

The Visual Aspect of Modified Hydrothermal Nanotitania Extraction on Skin of Spraque Dawley Rats

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Abstract. Potential antibacterial such as Titanium dioxide (TiO_2) is being extensively studied throughout the research world. The modified hydrothermal nanotitania extraction was shown to inhibit *Staphylococcus aureus* in our lab test. The reaction of our substance to the rat skin and its behaviour is unknown. Methodology: Sprague Dawley (*Rattus norvegicus*) rats were used as the experimental animals. Results: 0.1 mg nanotitania extraction application on dorsum of the rat showed no skin color changes at day 1, day 3, day 5 and day 7 post application. There was no changes in their behaviour up to day 7 with no skin rashes or skin scratches seen or fur changes. 0.5mg of nanotitania extraction showed redness and less fur growth at day 7. Conclusion: Our 0.1mg modified nanotitania extraction is observed as no effect to the rat skin.

Effectiveness Of Banana Trunk As Protection Wall From High Velocity Shrapnel During Detonation of Unexploded Ordnance (UXO)

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Abstract. This paper is to investigate banana trunk fiber to be constructed alternatively for the sand bag and high energy absorption. The aim of this study also for enhancing method of absorption velocity shrapnel during detonated of Unexploded Ordnance (UXO), Explosive Remnants of War (ERW) and Improvise Explosive Device (IED). The study involved blast test which is providing high energy impact based on the amount of explosive used. Type of explosive were used are Emulex 180 with velocity of detonation 4500m/s to 5700m/s, Explosive energy 4.17 MJ/kg, density 1.13g/cc to 1.21g/cc and initiation were used are No. 8 Detonator. The structure of specimen is analysed using Stereo Microscope Image Analyser (35x zoom) which is an optical instrument that can observe the structure of the fragments (banana fiber) after blast test. Results shows that banana trunk can become a protection wall as it can absorb the impact of blast from explosion.

Tensile properties of PolyLactic Acid Composite Foamed via Supercritical Carbon Dioxide

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Abstract. Tensile properties of foamed PolyLactic Acid (PLA) composite were studied. In this work, PLA were incorporate with Durian Skin Fibre (DSF) and Cinnamon Essential Oil (CEO) to form PLA biocomposite and further treat via supercritical carbon dioxide (SCCO2) to form foamed PLA biocomposite. The tensile strength value of foamed PLA biocomposite slightly drop from foamed PLA. As for stress strain graph, the percentage of strain for foamed PLA and PLA biocomposite did not distinct much. Through SEM, the foamed PLA biocomposite showing that it did not fully foamed after treated via SCCO2 which due to treatment period and the thickness of the thin films.

School Public Relations Strategy to Improve School Branding

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Abstract. School and community relations are communication activities between schools and the community, by providing information, seeking information, providing understanding, involving the community, or other activities that show the interaction between the school and the community. The purpose of this research is to understand how public relations strategies improve School Branding. The method used in this study is qualitative. By collecting data through observation, interviews, and documentation. The results of the research are public relations has a very important role in the sustainability of the educational process in improving school branding.

Self-Healing Epoxy Coating with Microencapsulation of Linseed Oil for the Corrosion Protection of Magnesium (Mg)

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Abstract. The ability to self-heal is an important feature for the long-term durability of protective coatings on metal alloys. Microcapsules in the self-healing coating allowed for automatic recovery of any damages or cracks, extending the life of the coating. In this study, self-healing microcapsules containing linseed oil as the core material and polyurea-formaldehyde (PUF) as the shell material were manufactured to epoxy resin matrix. Coatings were applied to a bare magnesium (Mg) substrate and scratched to test the self-healing ability. Optical and scanning electron microscopy (SEM) were used to characterize the microcapsules formed by varied stirring rates of 300 and 800 rpm. By using potentiodynamic polarization in a 3.5 wt.% NaCl solution, the corrosion rate of embedded microcapsules and coatings on Mg was evaluated, and the corrosion rate was studied using the Tafel plot. As a consequence, the epoxy coating containing linseed oil and urea formaldehyde, stirred at 800 rpm, significantly resists corrosion attack on the magnesium sheet, with decreased corrosion current density, icorr (1.552 $\mu A/cm^2$) as compared to the bare magnesium sheet (109.8 $\mu A/cm^2$). During the microcapsule preparation, increasing the stirring rate from 300 to 800 rpm reduces the icorr value by roughly half. As a result, the self-healing coatings demonstrated adequate self-healing and corrosion resistance recovery on magnesium alloys.

Production and Characterization of Activated Carbon from Baobab Fruit Shells by Chemical Activation Using $ZnCl_2$, H_3PO_4, and KOH

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Abstract. Chemical agents have a good influence on the formation of activated carbons, surface characteristic, and its adsorption properties. In this study, the effect of activating agents ($ZnCl_2$, KOH, and H_3PO_4) on baobab fruit shell (BFS) were evaluated. The characteristics of the baobab fruit shell based activated carbon (BF-ACs) were evaluated through the yield and iodine number. BF-ACs were also characterized by Scanning Electron Microscope (SEM), Fourier Transform Infrared Spectroscopy (FT-IR), X-ray Diffraction (XRD), and nitrogen (N_2) adsorption. SEM analysis illustrates those porous structures formed on the surface of BF-ACs were with different sizes. The XRD analysis show that the main structures of BF-ACs are amorphous. FT-IR data demonstrates the presence of different surface groups on the produced BF-ACs. Among activating agent, the KOH was observed to the most appropriate for the production of activated carbon with a large surface area (1029.44 m^2/g) from baobab fruit shell.

Primary Zone Characteristics in a Combustor Utilizing Axial Air Swirler: Cold Flow Investigation

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Abstract. This paper presents an isothermal flow simulation study of a small gas turbine combustor performed using laboratory scale test rig. The main objective of this investigation is to obtain physical insight of the main vortex, responsible for the efficient mixing of fuel and air. Such models are necessary for predictions and optimization of real gas turbine combustors. Air swirler can control the combustor performance by assisting in the fuel-air mixing process and by producing recirculation region which can act as flame holders and influences residence time. Thus, proper selection of a swirler is needed to enhance combustor performance and to reduce NOx emissions. Three different axial air swirlers were used based on their vane angles i.e., 30°, 45°, and 60°. Three-dimensional, viscous, turbulent, cold flow characteristics of the combustor model were simulated via Reynolds-Averaged Navier-Stokes code. The model geometry has been created using solid model, and the meshing has been done using GAMBIT preprocessing package. The solution and analysis were carried out using FLUENT solver. This demonstrates the capability of the code for design and analysis of a real combustor. The effects of swirlers' vane angles and mass flow rate were examined. The computational model predicts a major recirculation zone in the central region immediately downstream of the fuel nozzle and a second recirculation zone in the upstream corner of the combustion chamber, also known as corner recirculation zones. It is also shown that variation of swirler angles has significant effects on the combustor flow field as well as pressure drops.

Axial Flow Development inside the Can Combustor: Effect of Swirl Strength

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Abstract. The main purpose of this paper is to study the internal flow effect of varying the swirl number inside the combustor. The flow field inside the combustor is controlled by the liner shape and size, wall side holes shape, size and arrangement (primary, secondary and dilution holes), and primary air swirler configuration. Air swirler adds sufficient swirling to the inlet flow to generate central recirculation region (CRZ) which is necessary for flame stability and fuel air mixing enhancement. Therefore, designing an appropriate air swirler is a challenge to produce stable, efficient and low emission combustion with low pressure losses. Four radial curve vane swirler with 30°, 40°, 50° and 60° vane angle corresponding to swirl number of 0.366, 0.630, 0.978 and 1.427 respectively were used in this analysis to show vane angle effect on the internal flow field. The flow behavior was investigated numerically using CFD solver Ansys 14.0. This study has provided the characteristic insight into the flow pattern inside the combustion chamber. Results show that the swirling action is augmented with the increase in the swirl number, which leads to increase in the turbulence strength, recirculation zone size, and amount of recirculated mass. The current study report that the 50° swirler (swirl number > 0.7), produced enough swirling flow to generate good CRZ in the combustion chamber.

Natural Batch Adsorption Operation to Remove Dissolved Copper (II) by Carbon Charcoal Rambutan

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Abstract. Carbon charcoal was made from rambutan rods and used as an adsorbent. A gram 70/100 mesh size of adsorbent was then used to adsorb 100 ml of copper ion solution with a 70 ppm concentration. In this investigation, the batch procedure was used without shaking (naturally). The charcoal carbon rambutan ability to remove the copper ion was measured by AAS. The percentage result was 48,135% or about 33,694 ppm. SEM and EDX instrument analysis have applied to confirm the presence of copper ions on the adsorbent surface. The copper ion was found at a concentration of 0.09 percent of the total weight. The carbon charcoal adsorbent in rambutan rods has the ability to purify the water contaminated by metal ions.

Practical from Home on Drying Operation Module with Cucumber as The Sample

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Abstract. Indonesia has recently been hit by the international Covid 19 outbreak. In most parts of Indonesia, it has an impact on all activities. The majority of the teaching and research is carried out at home. The concept of forcing activities at home by providing the opportunity to conduct research in the drying process. It's an example of how students might use the drying process at home. The notion of drying the cucumber as a material sample was implemented and the drying kinetics were influenced by the size or form of the sample, the operation time, and the temperature. The information that affects the rate of drying is provided by the results of drying in an open area naturally and in a room. In comparison to temperature and operation duration, the start weight was the most affected. The time needed 4 to 8 days to dry.

Advancements in Battery Technologies of Electric Vehicle

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Abstract. The Automotive Industry has undergone a huge revolution – Electric Vehicles! Electric cars are growing fast and the demand for them is increasing all around the world, thanks to the more and improved choice, reduced prices, and enhancing battery technology. Introduced more than 100 years ago, electric vehicles have gone through a tremendous amount of advancement. This paper reviews the current major challenges faced by the Electric Vehicle Industry along with possible solutions to overcome them. Although electric vehicles have come a long way, the battery used in the vehicles needs to be further explored to harness maximum energy with a compact design. Electric vehicles should soon be able to compete with combustion engine vehicles in every aspect. Also, this paper reviews alternative materials for electrodes and batteries to make charging faster and reliable than ever. This paper envisages few concepts that could revolutionize Automobile Industry further in the future.

Laser drilling Parameter optimization using ANN for Ti6Al4V alloy

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Abstract. The current work is to increase hole circularity which is dependent on the machining parameters like laser speed, frequency and power. The experimental work comprises of machining Ti6Al4V titanium alloy material utilizing laser drilling. The analysis is carried out by fluctuating the machining parameters. The cycle parameters considered in this experimental work are laser power, laser speed, and frequency for Response hole Circularity. The S/N proportion manages the influencing parameters which influence the hole profile. Then the hole roundness is assessed by utilizing back propagation Artificial Neural Network (ANN).

Gender Equality: The Moderating Role of Motivation on the Effect of Personality and Emotional Intelligence towards Women Leadership

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Abstract. The main objective of this research was to examine the moderating roles of motivation on the relationship between personality and emotional intelligence (EI) on women leadership in the Malaysian engineering-based companies. This study employed a quantitative approach with the distribution of self-directed questionnaires. In this research, convenient sampling is utilised. The sample size was made up of 391 employees from engineering-based companies located in Malaysia. This research provided empirical investigation on the relevance of personality, EI and motivation on their effects on women leadership in the engineering-based companies. Based on regression analyses, results presented that motivation is significantly moderated the relationship between personality and women leadership (β=.117; t= 2.217; p=.027). Also, regression results presented that motivation is significantly moderated the relationship between EI and women leadership (β=-.0380; t= -5.899; p=.000). Theoretical implications have been made by referring to the Trait Theory. Meanwhile, some practical implications have been concluded and can be channeled to the management in the engineering-based companies. This research was essential to ensure that the national goals towards achieving Sustainable Development Goals (SDGs) on gender equality can be achieved.

Gender Equality: Examination on Personality, Work-life Balance, Emotional Intelligence and Women Leadership in the Manufacturing-based Companies

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Abstract. Although the term of women leadership sound familiar due to its significance on achieving gender equality in all nations, however lack of evidence was found on this domain particularly in the context of Malaysia. Following that, this research aims to examine the associations between personality, work-life balance (WLB) and emotional intelligence (EI) towards women leadership, specifically in the Malaysian manufacturing-based industry. A total of 391 out of 1846 engineers from the Malaysian manufacturing-based companies filled out questionnaires. SPSS was used to analyse the associations between all variables. Also, the mean for all variables were reported in this research. Specifically, a high mean indication with μ=4.02 for women leadership; μ=3.96 for personality; μ=3.85 for WLB; and μ=4.10 for EI were revealed based on this research. Next, Pearson correlation results presented the highest association between WLB and women leadership (r=.737, p=.000); followed by personality (r=.724, p=.000); and EI (r=.722, p=.000). This research added new information to the existing literature by empirically tested the role of personality, WLB and EI on women leadership. Thus, by nurturing the proven indicators of polishing the women engineers to be leaders in the manufacturing-based companies, the goal of gender equality for the country was expected can be achieved.

The Comparison of Microstructure and Mechanical Behavior of Stainless Steel 316L Using Near Net Shaped and Fully Embedded Methodologies Using DED Metal Advanced Manufacturing

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Abstract. The objective of this research is to compare the microstructure and mechanical behavior of 3D printed SS 316L using near net shaped and fully embedded manufacturing extraction techniques. Research findings will allow us to determine if two different manufacturing extraction methodologies of a 3D printed stainless steel part will affect the overall performance of test specimens. This research implemented advanced manufacturing, part designing, part modeling, part simulation, part production, CT X-ray scanning, material characterization, and material testing. Printing of test specimens was performed with a Optomec Lens 3D Hybrid Machine Tool Direct Energy Deposition (DED) metal printer. The DED metal printer was used for prototype printing and printing test samples. The areas of study also include modeling and design using SolidWorks CAD software. A comparison of printing orientation/configuration, internal composition, and testing of material structure in the areas of stress to complete failure of test specimens. The internal structure analysis will observe the porosity effects of 3D metal printing with near net shaped and cocoon style print parameters. The study will also address the amount of time, production, strength, composition, and overall performance of SS 316L printed material.

Comparative Study on The Effect of Rhombus and Rectangular Openings of Shear Wall on The Behavior of Tall Building

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Abstract. Reinforced concrete shear wall systems are a standout amongst the most commonly utilized horizontal load opposing systems in tall structure. It is important to determine efficient, effective shape of opening of shear wall in tall building. This paper investigates the effect of rhombus and rectangular opening on lateral displacement, base shear and stress of shear wall of tall building. A residential tall building of (12 Storey) having base size of 20m × 10m with height of floor of 3m is considered. In this paper 12% opening area of concentric rhombus dan rectangular opening of shear wall were modelled. It was found that rhombus produce lower lateral displacement, base shear and stress which is good for tall building.

Metal Injection Moulding of Novel Stainless Steel-Space Holder Feedstock for Production of Stainless Steel Foams

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Abstract. Metal foams are advanced materials with unique and excellent properties. One promising method to produce metal foams is the metal injection moulding-powder space holder (MIM-PSH) method. In this study, experimental work has been performed to identify the feasibility and effect of a novel space holder, namely, glycine, on the MIM-PSH process. Materials used were water atomised stainless steel powder, glycine powder and the multi-component binder consisting of paraffin wax and polythene. Compression specimens were injection moulded, debound and sintered. The porosity, pore size distribution and microstructure characteristics of the samples were characterised. The results show that the glycine is a suitable space holder for the MIM-PSH process. Samples with the porosities in the range of 42.4% to 52.1% were successfully produced. The total porosities of the samples were directly proportional to the glycine content. Marcopores (100 μm) and micropores (1–10μm) were observed in the samples. The microstructure and pore size of the samples are found to have a potential application in certain functional applications such as filters, fluid separation and biomedical implants.

Tensile, Water Absorption and Thermal Properties of Recycled Polyethylene/Nanoclay

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Abstract. In this paper, the effect of nanoclay content (1, 3 and 5 phr) in recycled high-density polyethylene (r-HDPE) on the mechanical tensile, water absorption and thermal properties was studied. The nanocomposites were prepared by a twin-screw co-rotating extruder and followed by hot/cold pressing machine. A fixed amount of 3 % polyethylene-grafted-maleic anhydride (PE-g-MA) was add to couple the polymer matrix and nanofiller in the nanocomposite. The tensile result showed that the nanocomposite reinforced with 3 phr of nanoclay exhibited the highest tensile strength (21.7 MPa) and Young's modulus (937.8 MPa). At 3 phr, the scanning electron microscope (SEM) micrograph showed the good interaction between matrix and filler phases. Based on water absorption testing, the water capacity increased with the content of hydrophilic nanoclay, however, the maximum water absorption of 1.2 % was considered as in the acceptable level in the industry field. The improved thermal stability was observed for the nanocomposites with the incorporation of low loading (1 and 3 phr) nanoclay into r-HDPE matrix where its presence delayed the melting temperature. The addition of 3 phr nanoclay and above was found to reduce the degree of crystallinity for nanocomposites.

Investigation on the Effect of Varied Machining Parameters during Friction Stir Processing on the Effectiveness of Coating Al6061 on Mg Alloy

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Abstract. Friction Stir Processing (FSP) applies the same technique bases as Friction Stir Welding (FSW) however, instead of joining samples together, the technique modifies the local microstructure of consistent specimens to accomplish precisely and desired properties by surface-modifying the microstructure. As in FSW, the tool prompts plastic deformation during the technique, but rely upon on the selection of system parameters, that is applied enforcement, transverse speed and rotational speed to the performance or specification of the material. In friction processing, the high temperature requested to develop the technique is set up by friction heating at the interface. The cylindrical tool is fitted in a chuck started by a motor that is rotated at high velocity against the work piece which is fitted static. The material selection in this study is based on the specification from the researchers which is using Mg alloy block and Al6061 as a coating on the Mg alloy block. The samples after FSP will be evaluate using hardness and microstructure testing. Furthermore, tests utilizing Brinell Hardness Tester and 3D Measuring Laser Microscope are conducted to further clarify the results by determining high toughness and fine grain structure. From this finding, Friction Stir Processing can upgrade properties such as durability, hardness, corrosion resistance, ductility, and formability without changing the bulk properties of the material.

Latest Development of Different Simulation Approaches for Friction Stir Processing (FSP)

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Abstract. Friction Stir Processing (FSP) is a welding form for joining metals which by traditional methods are too difficult to weld. The three-dimensional existence during FSP makes it more complicated for experimental studies. It is also expensive and time consuming for experimental observations. In calculating the data during experiments, there might have some inaccuracies. Different simulations were used to solve the difficulties but also to improve accuracy and minimize costs. It should be noted that strong distortions of the mesh could occur in the numerical simulation as the existence of huge deformations in FSPed materials. The relationship between the deforming continuum of computing regions and grid of finite is determined by numerical technique selection. Other than that, the numerical approach describes the model's ability to resolve large mesh distortions and offers correct boundary and interface resolution. The best choice for numerical technique is the main considerations during process simulation. Lagrangian and Eulerian are different examples of algorithms for continuum mechanics. One of the other techniques suggested which is Arbitrary Lagrangian-Eulerian (ALE), modifying the above methods by combining them. A comparison between the various numerical methods to FSP simulation and the implementations of each tool in the FSP phase has been addressed in this review paper. Observations showed that the Lagrangian method is commonly used in the entire structure field to model thermal behavior. Eulerian approach is rarely used to model deformation and thermal behavior but typically used for modeling the liquid's flow. Finally, some critical issues and topics regarding FSP simulations remain to be addressed and prospects for future study are suggested.

Development of Copper Busbar by Silver Plating under Non-Linear Load Operation using Finite Element Method (FEM).

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Abstract. Generally, busbars are used in electrical transmission and distribution power. The presence of harmonic current in the busbar will generate more heat to the system. The generation of heat will be increasing power losses at the busbar and reduced their conductivity. A three-dimensional (3D) Finite Element Method (FEM) by COMSOL Multiphysics software was used in this research to analyze the heat distribution, average temperature, and power losses of copper busbar with 0.5 mm silver plating on their surface. The dimension of 30 mm × 4 mm × 500 mm copper busbar was utilized based on their suitable current carrying capacity from the measured location. The current source starts from 419 A and varies from 0% until 50% of Total Harmonic Distortion (THD) with an interval of 5%. The findings show improvement condition of copper busbar after silver plated on their surface. The bare copper busbar only meets the requirement range condition of BS159:1992 until the existence of 15% Total Harmonic Distortion of current (THDi) component while silver-plated copper complies until the maximum value of THDi which is 50%.

Conductive Polymer Composites Using 3D Printing For Electronic Devices: A Review

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Abstract. The use of polyamide as a high-performance composite material with low cost and easy handling has expanded its application in industry. A few decades ago, many studies were done to expand the application of electronics in everyday life. However, the growing use of electronic equipment has dangers such as non-uniform temperature distribution and high-performance heat flux resulting in reduced life expectancy and reliability of electronic devices. Thus, the use of polyamide in electronic devices is seen to be cost effective and environmentally friendly. It also offers performance advantages such as abrasion and heat resistant drive in materials suitable for electronic use. The purpose of this study is to examine the influence of polyamide reinforced carbon fiber as a conductive material of composite polymers on mechanical, thermal and electrical properties for electronic devices. Tests on the electrical, thermal, and mechanical properties of polyamide reinforced carbon fibers through 3D printing methods in the manufacture of additives have been studied for the adaptation of composite polymer conductive materials to electronic devices. It found that the use of polyamide as an amplifier has increased tensile strength and modulus to (70.9 MPa and 3261 MPa) respectively. In addition, the thermal properties of polyamide also produce polymer shrinkage of 13800 μm/m. The electrical properties have high strength with decreasing cooling rate. This study provides a promising approach the use of polyamide reinforced carbon fiber has improved the suitability of the material to be used in the manufacture of additives on electronic devices.

Analysis of Grass Block Structure and its Performance in Water Absorption Tests

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Abstract. Many types of paving roads are used for the purpose of reducing flooding or collecting water. The use of pavement is usually placed in yards, parking lots, sidewalks and others. To increase water absorption, there are many types of pavement already on the market. One of them is grass paving/grass block. Grassblock is a type of paving block that has holes where grass grows and absorbs rainwater. This study aims to design, analyze the mechanical response of grassblock with concrete foam material reinforced by durian skin fibers, and to analyze the water absorption capacity of the grassblock structure. The conclusion that can be drawn is that the static simulation results obtained the equivalent stress value of 0.169 and this value is below the safety factor value.

Reinforced Kenaf Composite as a Feeder for 3D Printing Application

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Abstract. Kenaf fiber able to reduce the impact on the environment because the material is recyclable, light density and strong to be used as a product. Natural fiber especially kenaf fiber are still less applied and research for 3D printing technology. 3D technology is gaining rapidly in the industry to replace traditional method because it able to save cost and time production. This study focuses on producing kenaf composites material as a feeder for 3D printing. There are 2 main methods which is mixing composition of polypropylene material with kenaf fiber on physical properties and simulation analysis to identify the effect of using injection molding parameters on mold filling behavior for kenaf fiber reinforced polypropylene composite.

Wear Analysis of Titanium Carbonitride in Machining High Strength Steel (KRUPP 6582) using Used Palm Oil as Cutting Fluid

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Abstract. Palm oil is organic and completely harmless to human and the environment. It is a greener alternative to synthetic oil. Moreover, it has good lubrication properties due to its polar nature. Used cooking oil is usually discarded into the drain and contribute to the clogging in the drain and water pollution. Otherwise, it is ended up in the landfill in a plastic container or plastic bag. Reusing cooking oil is part of circular economy and does to some extent reduce the burden onto the environment. Clean unused palm oil and used palm oil are used as cutting fluid in the machining of high strength steel (KRUPP 6582) using Titanium Carbonitride (TiCN) coated tool in turning process. Analyses on the tool wear, tool life, cutting forces, material removal rate (MRR) and cost are performed. Three different cutting speeds are employed: 194, 245 and 305 m/min with depth-of-cut (0.2 mm) and feed rate (0.1 mm/rev). Used palm oil has shown significant decrease in wear rate by 5.9, 8.8 and 9.5% when machining at 194, 245 and 305 m/min respectively. Using used palm oil has shown increment in tool life and total volume removal of material by 12%, 55% and54% when machining at 194, 245 and 305 m/min respectively. Used palm oil results in a cheaper and more economical option as a cutting fluid since there can be savings up to 17.7-20.7%.

Environmental Sustainability of Electronic Industry in Supply Chain Management in Malaysia: Practices and Efficiency of a Case Study

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Abstract. Environmental sustainability is the study of how a natural system functions, remains diverse and produces everything it needs for the ecology to remain in balance. Sustainability takes into account how we might live in harmony with the natural world around us, protecting it from damage and destruction. Today, we live in a modern and largely urban existence throughout the developed world and consume a large amount of natural resources every day. Sustainability and sustainable development focuses on balancing that fine line between competing needs to move forward technologically and economically, and the needs to protect the environment in which we and others live. While Malaysia has been pegged among the top Electric & Electronic manufacturer worldwide, E-waste has continued to become a known problem across the globe. The objective of this paper is to identify the impact of the environmental sustainability implementation as well as to determine specific collaboration between vendor and suppliers in handling the environmental issue in a case study, named Company A. The analyzed data revealed that effective implementation of environmental sustainability in industry will not only be advantageous to the earth as a whole, but it will also prove to be highly beneficial for the company itself.

EFFECT OF DIAMETER HOLE TUBE OF PLATE FIN HEAT EXCHANGER BY USING SOLIDWORKS

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Abstract. Nowadays, heat exchangers are importantly used in the industry no matter the small or large industry, heat transfer system which is used for internal heat transfer between two or more fluids at different temperatures. In this study was successfully design heat exchanger model with different diameters and lengths by using solid work software. The heat exchanger model has examined the body structure at 450psi of pressure at three diameters of hole tube of fin plate heat exchanger is 10.1mm,13.35mm, and 16.6mm, respectively. The results show the different sizes of diameter give different impacts because the larger the diameter of the hole tube gives larger the surface area. The von mises stress shows the highest value at the highest diameter of hole tubes is 2.827 x 108 N/m2 and oppositely with the displacement results. Therefore, the larger diameter gives more efficiency to the heat exchanger compare to the small diameter hole tube. This development of fin plate heat exchanger successfully useful as basic information and parameter to industry in designing for heating, ventilation, and air conditioning systems (HVAC) applications.

Study of Springback Behavior on U-bending Part Using Die Shoulder Patterning Method (DSPM)

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Abstract. U-bending is increasingly used in the sheet metal industry for the manufacturing of car door pillars and beams. However, the springback phenomenon that occurs after removing the sheet metal from the fixtures leads to altered product accuracy, rejection, and increased manufacturing costs. Thus, minimising springback in the bending of sheet metal is vital to maintain close geometric tolerances in the deformed parts of the metal. Many studies have been performed on the prediction of springback occurrence based on various experiments and simulations. Nevertheless, no study has been performed to reduce springback occurrence, especially during the hat-shaped fabrication process. In this study, the hat-shaped part is deformed using the die shoulder patterning method (DSPM) and validated using three-way ANOVA. It was shown that all the DSPM models improved the accuracy of the deformed parts by exhibiting greater contact area during the bending process, thus reducing the springback of the deformed parts. The DSPM with a radius of 5 mm and rib size of 0.4 mm successfully minimised springback as the contact area and sliding stress between the die shoulder and surface of the blank were optimised for AISI 1030.

Study on the Emulsion Stability of Triproplyne Glycol Diarcrylate in Water

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Abstract. This study addresses the emulsion stability of tripropylene glycol diacrylate (TPGDA) in water. Generally, the oil-in-water (O/W) emulsion is incompatible and tends to separate to an oil and water layer due to the difference in density of both oil and water. This could lead to the occurrence of flocculation and coalescence. However, the emulsion can be controlled with the presence of the right amount of stabilizers such as surfactants (emulsifiers). The emulsion stability of TPGDA emulsion in the presence of Tween 20 (Tw-20) as a surfactant was studied with respect to its concentration effect ranging between 0.1 wt% to 3 wt%. The FTIR spectra displayed the interaction of TPGDA and Tw-20, proving that the emulsion is fully mixed and stabilized. The optical microscopy microstructure also showed a supporting result of no droplet aggregation and flocculation in the TPGDA emulsion with the presence of 0.4% of Tw-20 surfactant. This information about Tw-20 is useful, making it a promising surfactant for enhancing the creaming stability of the TPGDA emulsion.

The Utilization of Chrome Tanned Waste Leather as a Potential Filler on Nanosilica-Natural Rubber/Styrene Butadiene Rubber Blends

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Abstract. Nowadays, leather tanning processes produce huge amounts of leather wastes (LW) where it become a concern due to environmental issue as it generates solid waste, wastewater and gases. Improper way of disposal will develop the oxidation of chromium such as from chromium (III) to chromium (IV) which is extremely toxic. This waste leather may be valuable to be used in rubber based material as a value-added additive such as filler. In this study, natural rubber (NR) and styrene-butadiene rubber (SBR) were blended together at the fixed ratio 60:40 and reinforced with nanosilica (nS) and chrome tanned waste leather (W_L), by varying WL loading ranging from 0 phr to 50 phr by using a two-roll mill. Tensile strength and elongation at break of NR-nS/W_L deteriorates due to weak interfacial bonding between hydrophilic nS/W_L filler and hydrophobic RB although the compatibilizer was added in the formulation. Based on the overall properties, NR/SBR filled nS with higher W_L loading tend to produce a lightweight of rubber products due to the spongy character of W_L .

The Efficiency of Durian Shell Ash as Partial Replacement of Cement in Concrete for Mechanical Properties Improvement

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Abstract. Study on usage of agriculture and food waste as a replacement of building construction materials has become trend due to its potential in lowering the construction cost and reducing the environmental impact. In Malaysia, the demand of durian has kept increasing each year, and so hence, its production. That translates to the increase of durian shell wastage. The burnt durian shell ash has a physical similarity to cement. Hence, the intention to convert durian shell to durian shell ash (DSA) and mixing it into the concrete mixture as a partial cement replacement could help to minimize the environmental issues related to durian shell, and hence minimizing cement use. Results show that the DSA existence in concrete does affects the properties of the concrete. The workability of the fresh concrete decreases as the cement replacement increases and the strength of the concrete decreases as the percentage of DSA in the concrete mixture increases, making it potentially useful in producing a mass concrete. The optimum percentage of 5% of DSA replacement in concrete is possible to produce concrete mix with strength more than 30 MPa. This proves that durian shell ash is a suitable replacement for cement for producing high compressive strength concrete.

Utilization of Mango Leaf Ash as A Supplementary Cementitious Material in Concrete

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Abstract. The importance of trying to find a partial or total alternative due to the negative impact of cement on the environment is because it contributes to acid rain. Therefore, material specialists and researchers are competing in the field of finding suitable and abundant materials, including waste, whether industrial or agricultural to make an additional score and disposal. The aim of this study was to evaluate the effect of mango leaf ash (MLA) substitution as a partial replacement for cement type OPC 53 in the concrete mixture. To achieve the goal, laboratory tests were done to check the efficiency of adding ash to cement with varying 0%, 2%, 5%, 6%, and 8% by weight of cement. The grade of concrete that was used was M30 and the experiments were compressive strength test at 7, 14, 28 days respectively. Also, the flexural test and splitting tensile tests were conducted at 28 days. In addition, the concrete was tested also in a fresh style to check workability from the slump test. The MLA has adversely affected the strength of concrete; the addition of 2% MLA slightly increased the strength of concrete, positive effects can be seen in the 5% addition of MLA, whereas the negative effect for the remaining doses (6% and 8%) can be clearly seen in both strength and workability. However, it was observed that an addition of 2% to 8% MLA replacement is capable of producing concrete strength of more than 30 MPa for all mixes, and more than 40 MPA for 2 to 6 % replacement. This proves that mango leaf ash is a suitable replacement for cement for producing high compressive strength concrete.

Gender Equality towards Education, Employment, Family and House Management among Societies in Karachi, Pakistan

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Abstract. Women are a 50% of the population of the world and over half of the planet's total human resources potential. Also, this aspect limits females and girls since they generally lack professional training. In some Asian cultures, the gender bias is strong, and that leaves women vulnerable to rape and domestic violence. Descriptive statistics such as tables and pie charts and bar-charts were examined with the questionnaires. It utilized descriptive statistics to present the information that was contained in the study results. Both the sample and the findings of the tests are clearly presented. Research involving basic visual analysis is important for nearly all types of statistical study. While primary and secondary education attracted the largest numbers of respondents, the most significant part of the responses came from the tertiary education and secondary education sector. When it was questioned if the family felt reasonably pleased with this edition, all answers ranged from neutral to strongly disagree. When respondents were asked to imagine a husband versus a stay-at-at-home dad situation, the gap was significantly greater on whether the wife spends more time on child-rearing. Not accepting these statements does not disprove the validity of the results. On the whole, people with low incomes felt as if they were receiving reasonable benefits and had a sufficient number of family services, as well as skilled tools.

Numerical Modelling of Penstock Flow in Dam

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Abstract. This paper presents the numerical modeling on the flow in dam penstock structure using conventional finite volume method (FVM) simulation software, ANSYS Fluent. The water flows in the bottom outlet section that comprised of four penstocks were successfully simulated. The numerical model was validated with an experiment, which a considerably low discrepancy of 12%. It was found that the middle section of each penstock observed the highest flow velocity, indicating the regions sustained large stress from the rapid flow, which gives the higher deformation. However, the flow dynamics across all four penstocks are similar. Overall, this numerical study showed that the application of the FVM simulation tool to visualize the penstock flow is viable and useful for the subsequent dam reliability analysis.

Internet of Things Enabled the Quality Test of Refilled Water Using Value and Trust Design Methods

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Abstract. Water is a natural resource and plays an important role in human life to be consumed. Water used for consumption should be clean, colorless, tasteless, odorless according the Indonesia Ministry of Health standards. The water quality test measures parameters such as pH, total dissolve solid (TDS), and water temperature based on IoT and Arduino as a microcontroller. The design of Water Quality Device Test is carried out using the value and trust design method. To solve these challenges, we propose a value-oriented reference process for innovative functionalities of a Water Quality Device Test. We have found that the consideration of the human values involved is of great importance for the identification of stakeholders throughout the development process. The results show that the comparison between laboratory test results versus Water Quality Device Test. The quality test comes from 10 depots. Based on the results of the paired sample t-test, it is known that the t-statistic or t-value for pH, TDS and drinking water temperature values shows lower value (<) than the t-table value (1.81246). These means that the pH, TDS, and temperature values of drinking water do not show differences in results when tested in the laboratory and using Water Quality Device Test.

A Monte Carlo Simulation for a Variable-Value Stream Mapping (V-VSM) and Risk Assessment - Failure Mode and Effect Analysis (RA-FMEA); A Case Study

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Abstract. Value Stream Mapping (VSM) is one of the most used lean manufacturing methods for determining cycle time (CT) and lead time (LT) in the process flow from customer order to shipment. Value-added (VAA) and non-value added (NVAA) events in the flow must be defined and noted in the VSM. However, there are only a few studies that take risk management into account when calculating lead times. Variable VSM (V-VSM) will be used in this report, with (minimum, most-likely(mean), maximum) values for each CT/LT and Risk Assessment-Failure Mode and Effect Analysis (RA-FMEA) for all risks reported. For a more accurate result, the model will be simulated using Monte Carlo simulation with @Risk software. Prior to the simulation, each process must be described by the best-fit probability distribution. The (minimum, most-likely(mean), maximum) time values of total CT/LT and Risk that the management should consider when preparing the raw material order, VAA/NVAA activities in the production line, Work in Progress (WIP), process layout and shipment schedule are the results of this analysis. For management, the current and future VSMs could be finalized, displaying all relevant variables. This model will be tested in a small and medium food manufacturing facility that produces mixed powder drinks. However, the emphasis of this paper will be on the Monte Carlo simulation using @ Risk software based on V-VSM and RA-FMEA model created.

Feasibility Study of FDM 3D Printing Fabrication Process for Customize Automotive Front Grille

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Abstract. In recent years, many automakers starting to adopt 3D printing technologies in producing functional end parts. In line with the industrial revolution (IR4.0), this technology plays a significant role in improving the component's cost efficiency, especially in the low volume market. Nevertheless, these technology facing several challenges such as surface quality and dimensional accuracy that hinder their progress. A feasibility study was conducted to investigate the influence of process parameters on the surface finish and dimensional accuracy when producing automotive component. The automotive front grille component has been chosen as a case study, and Full factorial design (FFF) optimisation approach was employed to the part fabricated by FDM 3D Printing technology to improve the surface finish dimensional accuracy of the parts. Based on the results, layer height and infill percentage are the most significant factors in the dimensional accuracy and surface quality of the 3D printed part. Findings from this research show that process parameters optimisation improves dimensional accuracy, but post-processing is still required to enhance the part's surface finish.

Nondestructive Prediction of Juice Recovery Yield of Pineapple Using Near Infrared Hyperspectral Imaging

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Abstract. During commercial processing of pineapples, fresh fruit selection on the basis of their quality is essential, particularly their juice content. This is to ensure high and consistent product quality, but juice level varies between individual fruit. Therefore, a non-destructive technique for predicting juice recovery yield of pineapple using near infrared hyperspectral imaging (NIR-HSI) was aimed for use in online sorting systems. Pineapples were scanned using NIR-HSI to develop a calibration model for predicting juice recovery yield of pineapple in this study. A set of 122 pineapple samples was divided into a calibration set (n = 81) and a prediction set (n= 41). Spectral pretreatments were investigated in order to obtain the best calibration model. The best model was obtained using Savitzky-Golay smoothing spectral pretreatment at the wavelength range of 935–1720 nm using partial least squares regression (PLSR). The model showed sufficient accuracy for prediction with a correlation coefficient (R_p) of 0.73 and the root mean square error of prediction (RMSEP) of 1.54%. These results indicate that NIR-HSI has the potential for use in prediction the juice recovery yield of pineapple in a non-destructive online system in pineapple processing factories.

Changes in the Forming Aspects of the Public Service Bargains Components in Determining the General Budget Policy

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Abstract. Public Service Bargains (PSB) perspective is used to analyze the relationship between politicians and bureaucrats based on the roles of both parties. This study aims to discuss how the relationship between politicians and bureaucrats and their interactions in two periods of leadership with different backgrounds, to analyze what aspects of interaction, behavior and power are in the PSB framework, particularly in determining budget policy in general. Discussions about governance and leadership as well as the interaction of politicians and bureaucrats are presented based on information and data obtained from primary data sources through in-depth interviews with bureaucratic leaders, that are the Mayor, Chairman of the Regional Representative Council (DPRD) as legislative bodies, Regional Secretary, and other supporting informants. The qualitative method is processed using NVIVO 12. The main findings in this study are aspects of interaction, behavior and power in two leadership eras with different backgrounds, so that this relationship pattern can be used as a reference in analyzing the relationship between bureaucrats and politicians in the PSB framework. The results of this study can be implemented in determining policies, in this case the general budget determination policy in the City of Magelang

Epoxidation of Palm Oleic Acid using In situ-Generated Peracid Mechanism

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Abstract. Vegetable oil are mainly used as a raw material for the chemical industry because it is very valuable due to ability of their main components, which is triglycerides and can undergo various reactions to produce a usable product. Epoxy ring opening as known as epoxide cleavage or epoxide ring degradation occurs in the epoxidation of vegetable oils. DHSA has been successfully produced from palm-based oleic acid via epoxidation with performic acid or peracetic acid with the hydrolysis of the epoxide. Previous researcher patented improved process to produce palm-based hydroxyl fatty acid (DHSA). This research paper was conducted to investigate the effect of types of vegetable oil towards epoxidation by using palm olein, palm kernel oil and sunflower oil at optimum condition by using peracid mechanism.

Green Catalytic Epoxidation of Waste Cooking Oil by Peracid Mechanism

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Abstract. The aim of this paper is focused on catalytic epoxidation of waste cooking oil using in situ generated performic acid. The epoxidation process of waste cooking oil was carried out by using in situ generated performic acid to produce epoxidized waste cooking oil. PFA was produced by mixing of formic acid as oxygen carrier and hydrogen peroxide as oxygen donor. The aim is to produce high product of epoxide-based waste cooking oil through catalytic epoxidation of waste cooking oil using in-situ generated performic acid and study the effect of various temperatures, thermal agitation speed, molar ratio of hydrogen peroxide to waste cooking oil and molar ratio of formic acid to waste cooking oil on epoxidation of waste cooking oil in term of relative conversion to oxirane. The presence of oxirane ring of EPO was characterized by Fourier transformation infra-red. Percentage of RCO(%RCO) determined by determining the oxirane oxygen content (OOC) value and substitute the value into a formula. The results showed that for temperature difference, highest %RCO is 85% at 55 C.

Effect of Rotational Speed for Friction Stir Welding/Processing on the Mechanical Properties and Microstructure of 5083-O Aluminum Alloy

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Abstract. This study looked into the effects of rotational speed on the mechanical and microstructural properties of 5083-O aluminum alloy welded using friction stir welding (FSW) and processing (FSP). 750, 1250, and 1750 rpm rotation speeds, and a steady travel speed of 50 mm/min. The welding and processing joints' tensile strength properties, microhardness, and microstructure were investigated and compared to the base alloy. The rotation of the sub-grains, which produces dynamic recrystallization in friction stir welding, causes fine grains to appear in the weld region. For friction stir processing (FSP), the rotation speed is increased to 94.7 percent of the base metal's ultimate tensile strength.

Imposing Residual Stress within Micro Fin Model to Understand the Deformation Caused by WEDM

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Abstract. This work describes a method of applying residual stress within micro fin model to understand the deformation of the fin machined by wire electrical discharge machining (WEDM). Firstly, transient temperature distribution on a workpiece caused by WEDM discharges was calculated using finite element method (FEM). Then, the result was used to calculate the residual stress. It was found that the residual stress in the radial direction, σ_r (z) along the centre axis of each discharge crater was distributed non-linearly in thickness direction from the crater top surface. Then, based on structural analysis, the σ_r (z) was imposed within the micro fin model. Here, thermal stress field caused by series of sequential discharges was considered. The summation of calculated deflections after three sequential discharges was approximately equal to the measurement result. As a result, the non-linear distribution of σ_r (z) was found to be the main reason that causes the non-uniform bending of the micro fin.

The Effect Of PLA/PVA Composition in FDM Filament Towards Porosity Behavior for Medical Applications

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Abstract. Nowadays, the use of PLA/PVA composites is expanding in medical fields where personalized products are the best way to accommodate human anthropometric differences. Therefore, new materials are being developed to suit the needs for such applications. However, the material used to create porous structures for 3D printing remains a mystery. In this paper, researchers present a PLA/PVA composition to investigate its porosity factor for the purpose of fabricating a 3D filament for external use in medical applications such as splinting devices. For comparison, compositions were processed using the melt blending method with various PLA/PVA proportions: 70/30, 60/40, 50/50, and 100 percent PLA. Increasing the PVA content of the composition could be a factor in increasing porosity. In this analysis, different percentages of PLA and PVA were used in the compositions. The melting temperature was set at 200°C, and the composition's parameters were modified to increase the amount of PVA content by 30 percent, 40 percent, and 50 percent. Ultimately, 100% PLA was used to compare various proportions of PVA to achieve a better porous structure. The best outcome was observed at 50% due to the more PVA content. The water submerge process was successfully conducted to investigate the composition's porosity improvement.

Preliminary Study on Ergonomic Posture Analysis and Environmental Stress Exposure Toward Staff in Welding Bay

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Abstract. In any welding bay or workplace, safety is most important to reduce any risks that can bring harm to the staffs or worker. There are two main objectives of this study which look at any risks related to health in the welding bay. First is the ergonomics postural analysis of the staff or worker. This study focuses on the working postures especially on lifting posture and bending or welding posture. The postures have their own parameters. For lifting posture, it is considered as intermittent while for welding posture is static. There are three staffs are chosen with different Body Mass Index (BMI) in order to find the distinct in the data of their working postures. By assessing these factors using CATIA software, a recommendation can be done to improve the posture of the staffs during working. Second, the environmental stress exposure analysis has been studied. In this study, the environmental stress exposure assessment focuses on heat, noise and air quality in the welding bay. The WBGT and low-cost noise and air quality device has been used to collect the data. For environmental stress exposure, result shows that afternoon session is having higher heat exposure compared to morning session. While for noise level shows about average of 85 dBA – 95dBA and CO2 gas is the highest gas expose with average of 2700ppm but not exceed the PEL OSHA. Therefore, this study will raise the awareness regarding safety in the welding bay among staffs and further improvement should be taken in future.

Near Infrared Hyperspectral Imaging for Predicting Quality of Dehydrated Ginger

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Abstract. The quality of any food product processed from fruit and vegetables can vary depending mainly on the quality of raw material. Near infrared hyperspectral imaging (NIR-HSI) has been shown to be a reliable and effective method of online monitoring of food products and was therefore tested on dehydrated ginger. The quality parameters of the dehydrated ginger assessed were texture and total soluble solids (TSS). In order to improve precision, spectral pretreatments were combined with NIR-HSI and were applied together with partial least square regression (PLSR). The accuracy of the prediction models for hardness was R_p= 0.79, RMSEP= 3.13 N and for TSS was R_p= 0.82, RMSEP= 2.25%. Results showed that NIR-HSI has the potential for determining hardness and TSS of dehydrated ginger non-destructively and could possibly to be used as part of the production process for online grading in dehydration factories.

Magnesium-Ion Conducting Polymer Electrolyte based on CH-g-PMMA with Ethylene carbonate

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Abstract. Solid polymer electrolyte (SPE) based on Ch-g-PMMA – Magnesium Triflate (MgTf) incorporating with Ethylene Carbonate (EC) as plasticizers has been prepared. SPE was first prepared by dissolving polymer Ch-g-PMMA with magnesium triflate (MgTf) (10-50 wt.%) with 1% acetic acid. A different weight percentage (10-50 wt.%) of ethylene carbonate (EC) was added to the best conductivity of Ch-g-PMMA with 40 wt.% MgTf. Ionic conductivity values were calculated from the bulk resistance obtained from impedance plotted at frequency range of 100 Hz to 1 MHz. The ionic conductivity increases as weight percentage of EC increases. Molecular interaction between components in each electrolyte system were analyzed through Fourier Transform Infrared Spectroscopy (FTIR). The complexations between the materials used in electrolyte systems are based on shifting of the bands, changes in intensity, shape and existence of some new peaks in FTIR spectra. X-Ray Diffraction (XRD) was used to investigate the crystallographic structure and chemical composition of all samples. The intensity of XRD peaks decreased as more EC added into the system reducing the crystallinity. The Ch-g-PMMA–40 wt.% MgTf–50 wt.% EC are believing as the best system for this study.

Inverse and Regression Methods in Determining the Mechanical Properties of TiN and TiAlN Thin Film Multi-Layer Hierarchy Coatings on Automotive Bearings

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Abstract. Coatings, such as monolithic and multi-layer coatings, have been used in protecting bearing surfaces. A monolithic coating is a type of basic coating using one type of material while a multi-layer coating is a coating consisting of a combination of soft and hard materials. Although monolithic coatings can improve wear resistance, they can fail due to infiltration and rapid crack expansion. In addition, multi-layer coatings can lower the coefficient of friction and bear heavy loads with a combination of hard and soft materials; however, an increase in the coefficient of friction and temperature will occur when the thickness of the coating is too high. Therefore, multi-layer hierarchical coating will be introduced as it can provide continuous transition with different combinations and thicknesses to overcome the problem of bond strength between layers. ANSYS Mechanical APDL was used to study very high, high, medium, and low hierarchical coatings with nano-indentation simulation. All specimens had similar hardness except for the low hierarchy. The study also proves that multi-layer hierarchical coatings do slightly influence the mechanical and wear properties compared to conventional coatings based on the inverse and regression methods. In the future, nonlinear regression is proposed for further studies in which it will describe a more suitable relationship for nanoindentation.

Future of Sugarcane Bagasse Paper- A Review

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Abstract. Generally, development in the pulp and paper industry requires extensive cutting of trees, which in effect contributes to deforestation. The dramatic growth in demand for wood supply, combined with the increasingly increasing cost of timber, has created a surge of interest in the use of non-wood plant fibres for paper production in widely developed countries. The use of waste material in pulping and paper-based industries could be beneficial as it helps prevent the need for disposal, which currently increases agricultural costs and causes environmental deterioration due to pollution and fires. The manufacture of sugarcane bagasse paper may help to minimize deforestation in the development of paper utilizing wood, which also contributes to the creation of biodegradable, biocompatible, and eco-friendly paper utilizing non-wood fibre. This would help the industry to develop sustainable technology in the current economy and environmental order. In the meantime, the magnetic material inside the paper acts as a filler can improves the quality and strength of the paper. While the incorporation of paper radiation will also improve the quality of pulp production, by preventing the presence of fungi on paper. This will be widely used on food wrapping or packaging that is clean is the most important aspect that should be taken to prevent food from being damaged. Biodegradable implies that it can be spontaneously broken down by microorganisms such as bacteria, fungi under some circumstances such as temperature, humidity and others.

Internalization of Character Values in Extracurricular Activities of Special Forces in the High School

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Abstract. The researcher aims to describe in detail the internalization of character values in the extracurricular activities of the special forces in a high school in Indonesia, starting from the extracurricular profiles of special forces, character values, strategies, measures, problems, and solutions. The method used is a qualitative approach with draft case studies. The key informant of the teacher-builder, and supported by an additional informant of the school principal, commander of PASSUS, Secretary, and member of PASSUS. Data collection techniques are interviews, observations, documentation. Data analysis is done by a series of processes with data collection, data condensation, data presentation, concluding. The results of this study were the extracurricular profile of the PASSUS formed in 2000 to print the younger generation with character, character values developed are honest, discipline, hard work, self-reliant, national spirit, love of homeland, social care, and responsibility, the internalization strategy of extracurricular passus is physical and mental training, hierarchy principles, family approach, internalization measures i.e. planning, implementation, evaluation, problematics and solutions derived from the exercise of passus, parental consent, support from the school, the solution is given a schedule of activities, making a letter of written permission, coordination with the school.

Effect of Various Infill Pattern and Density on Printing Time, Mass, and Cost of Batik Stamp Prototype

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Abstract. Batik block generally consists of handle, pattern holder and pattern and is one of the main tools in producing batik. The fabrication of batik block is done manually by highly skilled batik block fabricator (BBF). The current decreasing number of BBF has compelled this study to identify alternative methods to fabricate batik block in particular Fused Deposition Modelling (FDM). This study was done to optimize the fabrication of 3D printed batik block using FDM. The effect of various infill pattern and density on printing time, mass and cost of batik block was evaluated using Ultimaker CURA, a slicer software. Simulation results showed that that using cubic subdivision as the infill pattern yielded the shortest fabrication time for the batik block. Moreover, the range of infill density for the cubic subdivision was proposed varies depending the function at 25%-100%. The proposed processing conditions, the estimated fabrication time, mass, and cost for the FDM printed batik block are 44.7 hour, RM205.44 and 1.5kg respectively. The outcome of this project showed possible applications in using additive manufacturing technology to produce batik block.

Sodium Ion Conducting Biopolymers Electrolyte Based on Potato Starch-Chitosan Blend

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Abstract. Solid polymer electrolyte was prepared by blending two different polymers to improve their mechanical properties using solution casting method. The conductivity of films was measured by electrical impendence spectroscopy (EIS) and showed a highest conductivity when 10 wt.% of NaCl incorporated with blending polymer of potato starch and chitosan at 4.82 x 10^{-6} $S.cm^{-1}$. This phenomenon is best clarified as the dissociation of ion is higher at this rate and the energy barrier is lowered leads to increase the conductivities. The plot of log σ versus 1000/T for all systems follow the Vogel-Tamman-Fulcher (VTF) rule. ATR-FTIR studies the interaction after addition of salt, shows the shifted band of carboxamide and amine group due to the interaction of salt (Na^+ ion and Cl^- ion). The morphology of the systems was observed using scanning electron microscope (SEM). The morphology of highest conductivity film shows the roughness and pores in the systems indicate the space for the ions to moves and increase the conductivities compared the morphology of films beyond 10 wt.% of NaCl. It was showed that the crystalline structure and the movement of ions were inhibited and decreased the conductivity of films.

Experimental and Thermal Modeling of Batik Wax Extruder via Solidwork

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Abstract. A recent study via survey ratings and House of Quality (HOQ) had identified that the most critical function for an automatic batik printer is the ability of the extruder to distribute heat and maintain its melted wax temperature. This study aims to validate and identify the temperature distribution for an aluminum extruder designed for a batik printer. The steady-state thermal distribution due to the ceramic ring heater was modeled using Solidwork and compared with experimental values. The convection coefficient (as losses through the air) and the bulk ambient temperature were estimated at 5 W/m^2*K and 303 K respectively and defined in the model. Using a heating temperature of 75°C, the thermal model of the initial batik extruder was successfully developed with a discrepancy of less than 4% compared to the experimental values. The extruder body was then redesigned, and its nozzle was fixed to 1 mm adapted from traditional tjanting *rengrengan* design. Thermal studies of the modified extruder design at various die lengths showed low temperature drop of approximately 3°C at the nozzle to ensure continuous wax flow at the right viscosity onto the fabric. This study was able to validate the extruder design and provided a guideline in designing an extruder for a batik printer that utilizes environmentally friendly batik waxes.

An FE Simulation Study of New Friction Materials from Natural Fibres on Automotive Brake Pads

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Abstract. Brake pad is very important nowadays. The performance of vehicle is getting better and better so the braking system also needs to be improved. The usage of asbestos material in manufacturing brake pad is found to be harmful and hazardous to human the environment. The brake dust that produced from the brake pad can cause several cancer to human especially lung cancer. Some research papers are investigating on natural fibres to replace harmful asbestos material. Modern simulation software is developed to simulate the properties of material. This study focuses on the mechanical simulation and thermal simulation of the selected natural fibres which are palm kernel fibre (PKF), Kevlar and wood. For the design of the brake pad, it is referring to the Perodua Myvi 2018 edition. The 3D model is design by using Autodesk Inventor and imported to Ansys FE simulation software for the simulation part to determine mechanical properties and thermal properties of the materials. The palm kernel fibre (PKF) is found to be the most suitable material to replace the asbestos material among the other natural fibres.

Characterization of Physical Properties of 3D Printing Materials on Fabrics

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Abstract. 3D printing otherwise called added substance fabricating, is a technique for making a three dimensional item layer by layer utilizing a PC made plan. 3D printing is an added substance measure whereby layers of material are developed to make a 3D part. Accordingly, 3D printing makes less material wastage. One of the conceivable outcomes of 3D printing is to make composites with an extra worth comprises in consolidating 3D printing materials with material textures. This study concentrates on characterization of physical properties of 3D printing materials and fabrics. 3D printing filaments used in this study was Thermoplastic Polyurethane (TPU), Acrylonitrile Butadiene Styrene (ABS) and Polylactic Acid (PLA) and they are printed on 3 types of fabrics which were cotton, jersey and nylon. Washing test was carried out on the printed fabrics. Next, no of intact layers and the length of torn off layer were measured after washing process to determine the adhesion strength of the 3D filaments on the fabrics. Result shows various behaviors for each combination of the 3D filaments and the fabrics. In conclusion, the combination of TPU and jersey fabric has the highest adhesion strength and recommended to be used for textile-printing application.

Isolation and Characterization of Laccase Secreting Microorganism from Gua Kelam 2, Perlis

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Abstract. The current study, involves isolation and characterization of laccase producing microbes from Gua Kelam 2, Perlis, Malaysia. In our study, all isolates were cultivated on nutrient agar containing guaiacol. Only one isolate (GK1) was detected as a positive laccase producer which was then subjected for growth curve and kinetic analysis using nutrient broth and minimal salt medium. For nutrient broth, short exponential phase was recorded from 2nd h until 4th h in contrast to minimal salt medium that exhibited exponential phase from 8th h until 24th h. The highest laccase activity was recorded in nutrient broth (4.50 U L^{-1}) at 4th h incubation compared to minimal salt medium (3.72 U L^{-1}) at 30 h. The isolate GK1, was characterized to be rod shape and Gram positive bacterium. Based on the 16S rRNA sequencing, the isolate determined to be *Bacillus subtilis.*

Isolation and Characterization of Polyhydroxyalkanoate Producing Microorganisms from Molasses Wastewater

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Abstract. Polyhydroxyalkanoates (PHAs) are polyesters generated by numerous microorganism, where it served as a source of energy and carbon store for bacteria. These plastics are biodegradable, eco-friendly and recyclable. In the present study, 2 strains were successfully isolated and identified from molasses wastewater using staining with Nile Red A. Genotypic identification revealed that the isolates belong to species of Pseudomonas alcaliphila and Pseudomonas hydrolytica. Growth curves of both strains were constructed using POLYMATH software showed similar growth patterns and rates. The PHA accumulation of Pseudomonas alcaliphila and Pseudomonas hydrolytica were recorded at 55% and 45% of dry cell weight. The PHA functional group was further determined through Fourier Transfer InfraRed Spectroscopy (FTIR) analysis.

Experimental Investigation on the Rheological Behaviour and Dynamic Viscosity of Coconut Oil Based Al2O3-TiO2 Hybrid Nanofluid

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Abstract. This study focuses on the experimental investigation of the rheological behaviour and dynamic viscosity of coconut oil based Al_2O_3-TiO_2 hybrid nanofluid for transformer cooling with mixing ratios of 25:75,:50:50 and 75:25. The purpose of the study is to investigate the effect of nanoparticle mass concentration, nanofluid temperature and shear rates on the viscosity behaviour of the nanofluid developed. Besides, the rheological behaviour of the nanofluid also studied experimentally. The temperature and concentration studied spans from 30℃ to 70℃ and 0 – 0.5% respectively at a shear rate of 50s-1. An Anton Pars MCR 92 rheometer was used to measure the dynamic viscosity of the nanofluid. The experimental results indicated that with the increase in temperature from 30℃ to 70℃ and concentration from 0 to 0.5%, the dynamic viscosity increase by approximately 32%. Based on the results obtained, this nanofluid is justified to behaves as a Newtonian fluid at a higher shear rate, and a mixing ratio of 50:50 with a concentration of 0.5 wt% are most suitable due to stable trends.

Levenberg-Marquardt, Bayesian-Regularization and Scaled Conjugate Gradient Algorithms for Predicting Surface Roughness Accuracy on Side Milling AISI 1045

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Abstract. Surface roughness quality is an important requirement for functional machine components such as considerations of wear, lubrication, corrosion, surface fatigue and friction. In machining, this is influenced by machining parameters and it is difficult to develop a theoretical model to describe machining efficiently and completely. In this study, prediction using Artificial Neural Network (ANN) was developed. The Levenberg Marquardt (LM), Bayesian Regularization (BR), and Scaled Conjugate Gradient (SCG) algorithms were compared for the AISI 1045 side milling data. Machining parameters consist of cutting speed, feeding rate, radial and axial depth of cut. The network was trained using structures with the number of neurons 1 to 20 in a hidden layer. It is found that the best network structure for the LM and BR algorithms is 4-10-1 and for the SCG algorithm is 4-9-1. The LM, BR, and SCG algorithms are able to produce predictions that are very close to the experimental results. Based on network performance, the algorithms that produce the best mean square error and coefficient of determination are SCG, LM and BR, respectively.

Study of Albumen as Foaming Agent for Used in Self-Healing High Strength Concrete

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Abstract. Self-healing is an effective solution for sustainable maintenance for concrete to increase its durability against to sensitivity of cracking. As recently, the method of introducing bacterial agent in concrete were modified because of harsh environment in concrete such as small size of pore which cause squeezing of bacteria. In this research, the albumen from egg was used as foaming agent to create voids in concrete matrix. The aerated concrete matrix offer voids to bacteria as concrete will become dense and bacteria would squeezed during hydration process. The effect of albumen as foaming agent in concrete was studied while achieving the high strength aerated concrete type towards its compressive strength, splitting tensile strength and study the voids dissolution (visual) in concrete matrix when incorporation of albumen as foaming agent. The highest compressive and splitting tensile strength of HSAC were 95.40 MPa and 6.67% respectively with 2% FA in comparison to control. The results of water absorption of HSAC also decreased when higher concentration of albumen used. The sizes of voids created in all samples were less than 15 mm. It can deduced that 2% of foaming agent was ideal to produce optimum characteristics in strength, uniform and size of voids in high strength aerated concrete.

Conductivity and Structural Properties of Plasticized Chitosan-g-PMMA-Ammonium Triflate Polymer Electrolyte

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Abstract. Solid polymer electrolytes (SPE) are known as a potential materials as a medium for ion transport process. In the latest study, Ch-g-PMMA was produced by using gamma irradiation grafting method toward chitosan (Ch) and methyl methacrylate (MMA). The grafted polymer (Ch-g-PMMA), ammonium triflate (NH_4Tf) and ethylene carbonate (EC) were then used in the preparation process of the solid polymer electrolytes (SPE) and the gel polymer electrolyte (GPE). All samples were prepared via solution casting. The complex impedance plot was used in the conductivity calculation for all samples. The SPE film containing 40 wt% NH_4Tf in Ch-g-PMMA shows the highest conductivity at 1.03×10^{-04} Scm^{-1} at ambient temperature. The improvement of conductivity can be observed up to 2.57×10^{-04} Scm^{-1} when 40 wt% EC was introduced to the Ch-g-PMMA system. Fourier transform infrared (FTIR) spectra proved that the PMMA was successfully grafted onto the chitosan backbone. X-ray diffractogram (XRD) pattern justified that the amorphous phase of the sample leads to arise in ionic conductivity. Differential scanning calorimetry (DSC) studies show that the plasticized sample has lower value of glass transition (T_g) compared to the plasticizer-free sample due to the lubricant effect.

Estimating Shelf life of Fresh Brazilian Spinach: Paper and Plastic Packaging

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Abstract. The selection of packing materials is an important factor to prolong the shelf life of food products, especially for perishable foods or produces. This research was conducted to determine the effect of packing materials (papers and plastics) on fresh Brazilian spinach leaves quality such as moisture content, water activity and total color difference (ΔE). The samples were stored at ambient temperature (25 °C) for 16 days. The moisture content and water activity of the samples were measure by moisture analyzer and water activity meter, respectively. The total color difference (ΔE) were calculated based on L*, a* and b* parameters. Generally, based on overall results, the packing materials significantly affected the quality of fresh Brazilian spinach leaves throughout 16 days of storage period. The results asserted that the paper materials are not suitable to use to pack fresh Brazilian spinach leaves for long period. It is also not recommended to use any paper material to pack fresh produce, especially perishable vegetables and fruits, in protecting their quality. The use of HDPE and PP plastics is recommended to prolong the shelf life of the fresh Brazilian spinach leaves. However, it has a limitation in controlling the changes of leaves color.

Dispersion Stability and Density of Palm Oil Based Suspension of Al2O3-TiO2 Hybrid Nanofluid

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Abstract. The study of nanofluid stability is vital to fully utilize its potentials, particularly to improve nanofluid qualities. This experimental work focuses on the preparation and evaluation of the dispersion stability palm oil based suspension of Al_2O_3-TiO_2 hybrid nanofluid. Five different mixing ratio mixture of 20:80, 40:60, 50:50, 60:40 and 80:20 of Al_2O_3-TiO_2 nanoparticles were dispersed in palm oil using two step method. The volume concentration of the hybrid nanofluid was set as a constant variable throughout this experimental study at 0.5%. Sodium Dodecyl Sulfate (SDS) were used as surfactant to stabilize the nanoparticle mixture in the base fluid. The stability of Al_2O_3-TiO_2 hybrid nanofluid was visually observed after the preparation and constantly observed from time to time for an interval period. UV-Vis spectrometer and density measurement were conducted in this experimental study to observe the effect of nanoparticle ratio on the stability of Al_2O_3-TiO_2 hybrid nanofluid with palm oil suspension. Lastly, this experimental study findings and results for stability of Al_2O_3-TiO_2 hybrid nanofluid will helps in developing a new experimental study that will be effective with stability of hybrid nanofluid and mixture ratio of nanoparticles in future studies.

A Simulation Investigation on Mechanical Properties of Natural Fibres Reinforced Composite Materials for Packaging Application

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Abstract. The growing environmental concerns and consumer awareness of eco-friendly products have increased the importance of natural fibre. Natural fibres can be described as a fibre that obtained from natural sources such as animals and plants. Natural fibres are categorized as an environmental friendly material, which contains good properties compared to synthetic fibres. Hence, the increasing trend for company to develop products based on the natural resources in order to fulfil demands from customer. This study present the investigation of the mechanical properties of pineapple leaf fibre and jute fibre in terms of their flexural and tensile strength by using simulation method. It is important to find out the mechanical properties of this natural fibre reinforced composite materials in order to compare if it will make better packaging bag that can be used for SME industries compared to existing plastic bags. ANSYS R1 2021 student version software had been used to run the simulation. For the flexural test specimen, the sample shaped is based on the rectangular bar shaped whereas for the tensile test, dog-bone shaped is used. The results shows that each fibre have different flexural and tensile strength. Pineapple leaf fibre (PALF) is found to have the highest flexural and tensile strength in comparison with jute fibre and Polyethylene Hence, PALF is the most suitable fibre to be used as packaging material.

Predictive Model To Support Knowledge Generation: The Case of Outcome-Based Education Assessment in Malaysia

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Abstract. Visual analytics increases human cognition's capabilities through data exploration. Data exploration to further understand data that was produced was made possible by coupling interactive visualization with analytics which became known as visual analytics. With the increasing data production in everyday lives, there has been a notable rise in visual analytics research. However, there has yet to be any research that investigates the skills attained by students outside of the classroom and linking that to the learning outcomes set by the schools, faculties, or universities. This paper reports the a phase of the study that was done in discovering the predictive the relationship between students' outcome-based education results with their out of classroom activities using visual analytics. In order to design the visual analytics system, there is a need to perform research on the suitable interactive visualization and data analysis to achieve the expected outcome. This paper reports the study that was done in discovering the predictive modelling technique that yields the highest accuracy result. This study makes use of students' semester results and the recorded out-of-classroom activities data of theirs from Universiti Malaysia Sabah' Accounting program. The dataset was tested with four algorithms which are Random Forest, Gradient Boosting, Neural Networks, and Support Vector Machine. Results showed that Random Forest yield the highest accuracy result.

The Degradation Mechanisms of Organo-Montmorillonite (O-MMT) Ahead of to Melt Compounding Process in Polymer Nanocomposites

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Abstract. Organic surface modifier in organo-clays are known to go through the degradation during the melt compounding process in polymer nanocomposites. Development of completely exfoliated nanocomposites based on polymer/clay is decisive for achieving the actual value of nanoscale reinforcement in the polymer matrix. In this paper, Thermogravimetric Analysis or Thermal Gravimetric Analysis (TGA) and Field Emission Scanning Electron Microscopes (FeSEM) were applied to study the degradation mechanism by involving the commercial organo-montmorillonite (O-MMT) thermal treated. This O-MMT white power samples were heated for 3 minutes by using the Muffle furnace in variable temperature from 150 celsius to 600 celsius (150°C, 250°C, 350°C and 600°C). The thermogravimetric curve and morphology of FeSEM showed that the organic molecular within the galleries first undergoes the degradation process during thermal heating and the organic surface modifier molecules are the main problem when the organic clays are treated at high temperatures. The results indicate that in thermal resistant capacity the silicate clay structure can protect the organic surface modifier molecules from degradation below 200°C temperature range.

Development Of Education Leader Professionalism Through Orpaer-Based Participatory Group Dynamics Training In The Era Of Covid-19

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Abstract. The purpose of this study was to describe (1) the background of providing innovation management material on the professional development of educational leaders, (2) the background of providing change management in the professional development of educational leaders (3) the profile and characteristics of school principals as education leaders in Bantur district, (4) the implementation mechanism for the implementation of ORPAER-based participatory group dynamics training. This study used a qualitative approach, while data were obtained through interviews, both structured and unstructured, participatory observation and document analysis. The data obtained were tested for validity and credibility by using data triangulation techniques. The results show that the impact of the program in this study has implications for the self-development of educational leaders, (4) the program in this study has a positive impact on a teacher, (5) the program in this study can be a stimulus for the actualization of DNA of Peak Performance for a student in the school environment.

Experimental Study on Practical Applications of Wearable Thermoelectric Generator (TEG)

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Abstract. This study aims to investigate the potential applications that can be used for TEG devices. The application that has been used in this project is to light up the LED light bulb by harvesting human body heat using TEG Peltier Module, and the selected and tested human body part is the forehead. Several experiments are conducted on individuals by considering surrounding temperature, skin temperature, input voltage, output voltage, and body mass index (BMI). The values of input and output voltage generated from the TEG and voltage booster are collected and analysed. It is also found that the voltage generated from TEG and voltage booster mostly decreases with the human samples' increment of body mass index. The results also indicate that the checkerboard pattern heat sink produces a slightly higher voltage than the flat plate heat sink with differences only by 0.33mV for initial input voltage and 0.01V for initial output voltage for a human sample with 18.5kg/m² BMI.

Design and Development of Passive Solar Water Distillation System

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Abstract. Solar distillation process is one of the methods to purify water. This water purifying method consists of two main processes, which are evaporation of water and condensation of water vapor. In a solar distillation system, the system utilizes the solar energy from the Sun to heat up the temperature of the dirty water for water evaporation to occur. The evaporated water vapor will then be condensed, and the condensate will be collected. In this paper, a passive solar water distillation system or also known as solar still was designed and developed to produce clean water. The design requirements of designing a solar still with improved efficiency were discussed. The experimental performance of the prototype was evaluated for seven days. The solar still prototype managed to produce a daily average of 897 ml per day of clean distilled water.

Vision and Depth Perception Tests for the Visual Aid (UI20190059) Developed for Monocular Vision Impaired Patients

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Abstract. This paper evaluates the effectiveness of the visual aid design (UI20190059) intended to help monocular vision impaired patients. The primary objectives of this visual aid are to increase the field of vision and provide a depth perception for the user to help distinguish depth in their vision. Two types of tests were conducted on the visual aid with respondents, the field of vision test and the depth perception test. Based on the visual field measurement test, the visual aid has improved the respondents' visual field, ranging from 132 to 176 degrees. Furthermore, from the depth perception test, all respondents could identify the objects correctly with the help of the visual aid. Thus, the visual aid design was proven to offer the respondents visual improvement. The design, however, may need to undergo more clinical trials before actual patients can fully use it.

Developing a Nondestructive Test System Using Drone for Aircraft Inspection

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Abstract. Safety has always been the most important thing in the aircraft industry. Every aircraft has to be inspected and repaired if there are any defects. The current existing method of aircraft inspection requires heavy machinery, and it is time-consuming. This project is to make an alternative method for inspectors to do a visual inspection that is more efficient than the existing method. For the project, Intel Realsense Depth Camera D435i was used for its depth capability and DJI Phantom 4 Pro V2 as the drone for the new system. Tests were done to analyse the device's accuracy to see if it can be used in an aircraft inspection. The tests involve depth analysis system test, the wireless range for system test, and drone camera movement test with a depth camera. Depth analysis system test has few tests such as maximum distance test, horizontal angled camera test and vertical angle camera test. For the maximum distance test, the distance obtained was 130 cm. The result obtained for the horizontal angle test is that the camera can get accurate data from 60° to 90° horizontally, measured from the aluminium plane surface. In contrast, it can get accurate data from 80° to 90° from the plane surface for the vertical angle test.

Machining Performance of Carbide Insert in Turning Aluminium Alloy 7075-T651

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Abstract. Aluminium alloys are commonly used in the aerospace, automobile and electricity transmission industries due to its excellent strength to low weight ratio. The demand of high accuracy machining in the market today has made the optimizing of the machining parameters an important aspect of machining. Aluminium alloy Al7075-T651 is a ductile material. In continuous machining operation like turning, high amount of friction and heat is generated. This may cause the workpiece's material to adhere to the rake face of the cutting insert and lead to the built-up edge (BUE) formation. This BUE will detach and adhere to the chips in a way the surface roughness of the workpiece would be affected. This project is focusing on the machinability of aluminum alloy Al7075-T651 by measuring the performance of KW10 uncoated carbide cutting tool in terms of flank wear, surface roughness of the machined surface, wear mechanism and volume of material removed. The turning experiment was conducted in dry condition. The cutting speed range was 250 and 450 m/min whereas the feed rate range was 0.05 and 0.15 mm/rev. The depth of cut was kept constant at 1 mm. The results showed that the higher cutting speed and feed rate produced higher flank wear progression and higher surface roughness reading (R_a). The adhesive and abrasive wear can be seen through the SEM for all sets of parameters. It was identified that higher cutting parameters removed higher amounts of volume material with shorter tool life.

An Internal and External Factors Affecting Customer Loyalty: A Case Study of Fast Food Industry in Kulim, Kedah

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Abstract. Malaysia is one of the countries which show the largest household budget spending in food. Fast food industries which operating in Malaysia, having a rapidly expanding and balanced growth for the past few years. It is very convenience to the busy lifestyles. McDonald is the highest leading fast food brand among the food and beverages. It is the most successful fast food chain in the world. McDonald's was originated in California, USA in 1954. It has been the most recognized brand in the world. McDonald's has successfully established more than 30,000 franchising in 119 countries. McDonald's also enhancing its brand image through the social activities and sponsorship of special events sports such as sponsorship for the Champions League Football. Based on the results, the highest mean is Satisfaction which has 3.6614 mean and 0.53362 for standard deviation. The lowest mean is Customer Loyalty whereby the mean is 3.1980 and for the standard deviation is 0.78547. The respondents are among 100 customers' who dine in Kulim McDonald's. This study is aimed to examine the internal and external factors affect customer loyalty. This can craft loyalty customers to their business. Customer's loyalty is an important element for a company or business to generate profit and maintain sustainability in the market. Loyal customers are the customer who purchase the company's products and services and maintains the positive assertiveness towards the service provider.

A Study on Employees Resistance to Change in Managing Organization A Case Study of Public and Private Sectors in Perlis

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Abstract. This research study is implemented to identify the problems faced by employees that bring of resistance to change in private and public organizations. The objection made by employees is the main obstacles for organization to improve their performance and achieve the goals of company. This study involves number of factors that have been chosen from the previous studies as the components of resistance to change among employees. This study will touch on some factors that contributing to this problem such as employee behaviour, organization culture and employee perception. The research method used in this study is the quantitative research design by using questionnaire that will be distributed to 100 of respondent from the public and private sector in the state of Perlis. The analysis that conducted in this study includes correlation analysis, regression analysis and cross tabulation analysis to investigate the relationship between the selected variables to achieve the research objectives. From the study, the result showed the variables involved such as employees behaviour and organization culture are not having a strong influence to the causes of resistance to change but the employees perception has a strong influence to the causes of employee's resistance to change that would be run by the organization. This study is important and helpful to provide a guideline for the local organization to plan the change management in nowadays and for the future organization.

The Defects of Affordable Housing Industries In Malaysia

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Abstract. Home is a very important requirement for human life. Therefore, the government has conducted a social objective in order to meet the basic needs that also helps in the growth of the national economy by providing housing facilities to Malaysians in need. With the growth rate rising population resulting housing needs are as well increasing. As a result, the ministry of housing and ocal government constantly reviews its housing policy to formulate a more compact housing. Among the factors to be taken into account, is the remedy implement housing projects taking into account things like the need, demand and supply, finance, human resources, technology, design, material, infrastructure, utilities and social services, law and ethics. Few low-priced housing programs were introduced by the government of Malaysia to achieve the objectives of some plans. However, the success of the housing programs was reduced because of reported quality problems and defects. These critical review paper have identified the types defects of affordable housing can be solved to improve the quality of housing in Malaysia.

Challenges During The Period Of Movement Control Order (MCO) Against Unimap Students Following Online Learning From The Psychological Aspects.

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Abstract. In the year 2020, the Covid-19 virus has given a great blow to every human being in this world. This is also felt by the whole community in Malaysia when the Movement Control Order (MCO) has been implemented from March 2020 until the next few months. Even until now at the time of this writing, which is 31 January 2021, Malaysia is once again in this PKP situation. The number of infections shows an increase every day and has now reached 4 figures with a record of 5728 and is the highest number to date. Each of the individuals regardless of their background is definitely affected by this PKP and this is no exception has happened to students who go through learning Online. Various issues arise and become the main source of constraints and complexities faced by these students, whether external or internal. Each of the existing students has its own advantages and disadvantages and their ability in dealing with this situation is also different. This is because the level of psychological ability of each human being is different. Therefore, in this study, the researchers took a random sample of 531 students from various backgrounds, years of study, living areas, and different ages.

Utilizing Big Data Illustrative Case in Public Services

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Abstract. By increasing the challenge for organizations that really want to benefit from searching for large amounts of big data, the amount of information that is generated and transmitted across the network has grown exponentially. This is because big data can provide specific insights into market trends, buyer's buying patterns, and maintenance cycles, as well as ways to cut costs, and can provide organizations with more targeted options. This is due to the fact that big data can provide unique insights, particularly in market development, customer shopping patterns, and replenishment cycles (such as cost-cutting techniques and more focused business decisions). Data networks and cloud computing have led to an explosive growth of information in nearly every enterprise and business location. Big data is rapidly becoming a hot topic, and is attracting significant interest from academia, industry, and governments across the industry. In this role document, we first briefly introduce the concept of large statistics, including their definition, functions and costs. Then, from a different perspective, we define the meaning and potential that the great record brings to us. Then, we abandon the big data projects on a global scale. We describe the key challenging situations (for example, data complexity, computational complexity, and equipment complexity), and the possible solutions to these challenging situations. Finally, we conclude this article with several tips that erode big data plans.

A Framework for Investigating the Effect of Unlimited Improvement on Quality of Education

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Abstract. Competency has been defined in many different ways from different perspectives since its establishment. It can be referred to organizationally or individually. This research area has increasingly attracted researchers during the past few years. Currently, reviews in the literature on Quantity Surveyors (QS) competency are lacking. Therefore, considering the contribution by recent studies, a comprehensive review is attempted. This paper aims to provide an in-depth review of the literature on QS competency from both local and global perspectives. Within this study, the authors have reviewed the competency literature in a way that would help other researchers, academicians and professional bodies to have a closer look at the growth and development of QS competency. The authors examined various research papers, and on this basis, propose new competency elements for QS profession in the subsequent phase of the research process. In addition, certain gaps that would provide hints for further research in QS competency were identifieds.

Behavior Financial Theory and Analysis Of Investor Behavior In The Capital Markets In Lebanon

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Abstract. This paper discussed the market emergence in the Middle and East generally and Lebanon specifically. We first consider the main components of market emergence in Lebanon, including the size, depth, activity, and transparency of the market, and proceed to a descriptive analysis. Aggregating these observations into four bootstrapped indexes, we analyze the factors leading to market emergence with a probity model. We find that market size and activity seem to affect market emergence, whereas pricing and transparency do not. Finally, decomposing country-level probabilities and implementing a cluster analysis suggest that the average process of market emergence is more pronounced in the Lebanon region than it is in other emerging areas, such as Latin America and Eastern Europe. Overall, the results suggest that the Lebanon capital markets may attract more capital flows in the future. However, the markets are still heterogeneous: Whereas Turkey, Jordan, and Egypt are moving closer to the standards of developed countries, Lebanon, Tunisia, and Morocco can still be viewed as frontier markets.

Linear Programming for Profit Maximization in Automotive Industry

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Abstract. Manufacturing while gaining the highest profit has always been the ultimate target in any types of industry, including automotive. This is where mathematical optimization models play a crucial role for optimizing various industrial linear problems, especially when it comes to profit maximization or cost reduction. To accomplish this, linear Programming (LP) is exploited for solving budgetary tasks in the industry, by providing visualizedeffectual operation figures. Presented as a mathematical model, it is one of the most significant mathematical models available to achieve the main objective of reducing budget slacks and maximizing profit in Vehicle Lighting Company. Finding the correct production tune of all six Original Equipment Manufacturer (OEM) products manufactured by the company takes into consideration, five objective constraints and nine slack variables constraints. Towards the end, the successfully established LP Model is presented where model recommends how production quantity planning should be tuned so that maximum profit is achieved. With the ability to identify priority rating for each of the six products, it is indeed a very useful tool and can be treated as a concrete justification for decision making, leading to the best profit and cost reduction optimization for the company management.

Qualitative Study for Support System Entrepreneurs with Disabilities (EWD) at Business Development Stages

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Abstract. This study is a qualitative study that aims to explore the elements of support received by OKU entrepreneurs to grow their business. Interview done with 8 informants who are EWD from 4 states in the Northern Zone. The analysis conducted using Atlast ti shows that there are some important elements to support EWD to grow their business. Among them are agencies, partners and associations. The results of the study found that the support element is very important to the development phase of EWD business. In the same time EWD are very dependent on government agencies to grow their business to success based on findings results.

Factors Affected Entrepreneurs with Disabilities (EWD) to be Success

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Abstract. Entrepreneurship is the best alternative for the PWD to overcome issues related to unemployment and poverty. Thus, there are factors that influence a people with disabilities (PWD) to become a successful entrepreneur. This research paper explores the characteristics of a successful EWD. Qualitative study conducted on 8 disabled entrepreneurs in the Northern Region. The results of the analysis conducted found that EWD need knowledge, skills, attitudes and associations to succeed as entrepreneurs

Assessing the Implementation of Non Revenue Water (NRW) Management Efficiency Base on Economic Indicators: case of Bechah Tendong, Kelantan, Malaysia.

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Abstract. The State of Kelantan has recorded high Non- Revenue Water (NRW) Rate every year lately. Among the areas that recorded the highest NRW level was in Bechah Tendong, Pasir Mas, Kelantan with a value of 62%, hence this area was used as a case study. This study aims to assess and identify the economic implications of the implementation of NRW management in the study area from 2014 to 2023. The benefit-cost ratio (BCR), payback period (PBP), return on investment (ROI) and net present value (NPV) were used as an indicator. The results shows that, BCR recorded as 1.03, PBP = 9.32, ROI (%) = 6.40 and NPV = RM 405,576.82. It can be concluded that, the efficiency management of NRW at the case study area was able to generate income through savings in 2023 by RM 270,560.54, spesifically to the Kelantan Water Private Limited (AKSB) and generally to the state government.

Effectiveness of Invented Squirrels Repellent via Traditional Knowledge in Coconut Farm

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Abstract. Squirrels are the main enemy of coconut growers in Malaysia. It also happens to coconut growers in the village of Pasir Puteh, Tumpat, Kelantan. Coconut growers here use non-destructive methods to repel squirrels in their gardens. This repellent is created using natural and waste materials found around the farm. Basically, this device is a tap (kertuk) that has a knock rod and is powered by wind flow. The tap is similar (kertuk) to the wooden plank used by the people in the villages in the past to mark the time of prayer in mosque or to call the people for an important assembly. The device is made of bamboo and a short wooden stick is (one foot) fastened to a piece of string tied to both ends of the tap (kertuk). The knock rod is tied with a used fertilizer sack that acts as a blade and receives wind blows that eventually moves the knocker to knock the tap (kertuk). These three components are hung using a rope on a long pole stick and fastened to a coconut trunk. The generated sound alarms the squirrel and repels them from coconut fruit. This tap (kertuk) produces a loud sound each time the wind blows. Objective of this study is to determine the effectiveness of invented squirrels repellent via traditional knowledge in coconut farm. The methods used are observations and informal conversational interview where observation was conducted for 10 months from March until end of December 2020 at the coconut farm. One coconut tree with 15 fruits without invented squirrels repellent was used as reference and one coconut tree with 32 fruits fixed with invented squirrels repellent were used as a treatment. The results shows that, in 10 th month times six fruits from the reference tree were damaged, meanwhile only two fruits from the treatment tree were only scratched on the husk? But were not damaged. Based on an interview and observation, this invention is effective in repelling squirrels from destroying the coconut fruit in the farm.

The Rhetorical Moves of Abstracts in Thesis

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Abstract. Abstract plays an important role in representing research articles (RAs) or theses. A clear, concise, informative and interesting abstract helps the RAs or theses in terms of visibility and drawing attention towards the research. Being among the first writings read by the target audience, that is after the title and name of the researcher/s, it determines whether the rest of the RA or thesis will be read or not. Therefore, this paper draws attention to the rhetorical moves found in Engineering discipline thesis abstracts compared with the TEFL discipline thesis abstracts. The sample of the study are 10 thesis abstracts, selected from the best thesis award recipients of Universiti Malaysia Perlis (UniMAP). All the thesis analysed are from the engineering discipline and are written in English. The corpus size is 4540 words. Then, the result obtained were compared with a previous study on TEFL thesis abstracts done by Derakshan & Nadi (2020). The finding can be used by instructors for teaching abstracts writing based on best practice and from a more personalized perspective taking into account the discipline and cultural variation of the abstracts. As most instructors teaching academic writing in university comes from the linguistic or English language education background, it is hoped that the comparison made in this study would benefit those instructors teaching academic writing, particularly abstract writing for Engineering students.

Perimeter Description of Research Publication on Drones by Prolific Engineering Writers

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Abstract. Teaching technical writing to engineering researchers particularly post graduate students is a demanding and complex task. Often the challenge faced by the language instructor is in having inadequate understanding on students' expected writing output which is engineering research publication. While the language instructors may find the language use aspect manageable, it is the understanding on expected writing output for engineering discipline that is a challenge; therefore, supporting language module developers to understand those expected outputs is essential and needed for the advancement in language teaching. In view on the need for the description of the targeted output which is engineering publication, this study focuses on supporting the understanding of engineering research publication specifically on drones. This study is aimed to describe the perimeter of research publication on drones written by prolific engineering writers. This study examines 275 research publications indexed in SCOPUS database and also investigates 1947 research publications that cited the 275 publications as reference source. This paper presents the description on the perimeter for both groups. Such description provides a ready narrative to language instructors in this area and support the understanding on audience and reasons of writing in efforts to develop modules on technical writing for engineering postgraduate students particularly in drone engineering.

THE USE OF INFORMATION TECHNOLOGY AS POLITICAL INFORMATION SOURCES AND ITS EFFECT TO STUDENTS' POLITICAL AWARENESS

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Abstract. .Information technology that continues to develop makes it easier for people to access information. This will affect the political knowledge capacity of citizens, so that political awarenessis formed. Political awareness is needed for beginner voters to participate in politics. Someone who participates in politics based on political awareness will produce a good choice because it is based on the knowledge and understanding they have about politics. For this reason, this study aims to determine whether the level of use of information technology will affect the political awareness of beginner voters. The results in this study indicate that the level of utilization of information technology for the beginner voters is mostly 44.5% in the low category, 31.3% in the very low category, 17.3% in the high category and 6 .9% in the very high category. The level of political awareness of beginner voters, mostly 52.8% are in the high category, 32.5% are in the very high category, 14.3% are in the low category and 0.3% are in the very low category. The results of hypothesis is an effect of the use of information technology on the political awareness of beginner voters by 11.5%. It can be concluded that information technology has a role as a source of political information that affects the political awareness of beginner voters. The higher the use of information technology, the higher the political awareness that beginner voters will have.

Disaster information by National Disaster Management Agency (NADMA) on social media during disaster: A qualitative perspective.

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Abstract. Disaster information flashing a warning news and preparing the public to face an inescapable natural disaster. This paper presents a case study approach to explore the disaster information prepared by NADMA on social media during disaster. In-depth interviews were conducted with disaster management teams from National Disaster Management Agency Malaysia (NADMA). It provides the coding frameworks for analysis of semi-structured interviews with five individuals. The interviews were transcribed and then analyzed by using software. Results show NADMA often provides current situation news and disaster help response information for the public. There were clear preferences that the response guidelines and disaster preparedness education were the most information published in social media. Theoretically, this study aims to enrich the study of communication especially sensemaking during disaster situations. The results could guide the aspect of information management by disaster management teams during disasters.

Malaysian entrepreneurs' strategies on product pricing during COVID-19 outbreaks

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Abstract. The outbreaks of Covid-19 have a significant effect on the economy and may therefore affect the decision of the companies to determine prices for goods and services to sustain and being competitive. During this recession period, customers focus on product value and prices, suppliers are concerned about cash and workers are concerned about their jobs. Therefore, due to understand on the price-setting strategies used by entrepreneurs during this pandemic, this study provides an overview of this matter at the early stage of Covid-19 outbreaks in Malaysia. An online survey has been distributed by using the snowballing method to reach out to entrepreneurs for a duration from May to June 2020. The outcomes of this study showed instead of using price promotion strategy to remain competitive, most of the respondents prefer to create product values on customers.

Mother Behavior Towards Tradition of Postnatal Care in Jeulingke Community Health Centre of Banda Aceh District

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Abstract. Aceh is one of the provinces in Indonesia which is located in the westernmost part of the archipelago. From ancient times the people of Aceh have been very consistent in maintaining the customs in postpartum care with the belief that the treatment carried out has a positive and beneficial impact on them. The purpose of this study was to determine maternal behavior towards postpartum care in the work area of Jeulingke Health Center in Banda Aceh City. This type of research is analytic with cross sectional design. Data collection was carried out on 20 November - 12 December 2019 in the working area of the Jeulingke Health Center in Banda Aceh City. Total population of 30 postpartum mothers and sampling by total population. The research instrument used a questionnaire and data collection by interview. Data analysis uses univariate and bivariate analysis. The results of the bivariate analysis of knowledge (p = 0.626), attitudes (p = 1,000), actions (p = 0.000). Conclusion there is no influence of knowledge and attitudes towards the postpartum care tradition. It is expected that health workers in addition to providing health services in a promotive, preventive, curative and rehabilitative manner, can also examine and respond to differences in traditions / culture, issues of childbirth care and rectify the beliefs held by the healthrelated community.

The Influence Of Crisis Emotions And Attitude Towards Health Information Crisis Behavior In Social Media Among Youth In Malaysia

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Abstract. Social media as a one-stop center of information that increased consumer dependency to seeking and sharing information as well as protective action during public health crises. This scenario leads to the dumping of various information including health information. Hence, the study is conducted to discover the relationship between crisis emotions and attitude in health information crisis in social media among students in Malaysian higher education institutions. This study utilized a quantitative research approach through cross sectional design. A total of 471 respondents from selected higher education institutions participated in the present study through simple random sampling technique. Results showed that there is a significant relationship between crisis emotions towards youth behavior. The finding also indicates that a moderate significant relationship between attitude toward youth behavior. Analysis of multiple regression also shows that crisis emotions and attitude were significantly contributed to the proposed model of youth behavior in the health information crisis in social media. Thus, the model reflected the importance of crisis emotions and attitude as predictors of youth behavior in health information crises in the context of social media. Emotion and attitude play a critical role during health information crises. Emotion and attitude are the driving forces behind the interplay of relationships on social networking sites. They have the ability to trigger online viral sharing that can spread both positive and negative sentiments like wildfire.

THE EFFECT OF INNOVATION CAPABILITY AND DIGITAL TECHNOLOGY ON THE PROFITABILITY OF MSMES IN THE COVID-19 PANDEMIC TIME

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Abstract. The occurrence of the Covid-19 Pandemic not only devastated the health aspect, but also a declining economic impact. The economy seems to be paralyzed at any time in 2020, especially for MSMEs. Do not expect a profit, many of them are unable to pay debts to third parties. This is of course very unfortunate, because MSMEs are the spearhead of the community's economy, especially in villages. The purpose of this study was to see the effect of the profitability of MSMEs during the COVID-19 pandemic, with the innovation capability and digital technology variables as independent variables. The method used is to do a questionnaire and test the hypothesis using assumption tests and multiple linear regression. The results showed that partially the innovation capability affected the profitability of MSMEs and digital technology did no effect on the profitability of MSMEs. Simultaneously, innovation and technology capabilities affect MSMEs

Analysis of Stunting Incidence Factors in Toddlers Aged 23-59 Months in the Work Area of the Padang Tiji Community Health Center, Pidie Regency, 2020

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Abstract. Aceh is ranked third nationally for child stunting, behind East Nusa Tenggara (NTT) and West Sulawesi (Sulbar). Currently, he explained, the government is aggressively campaigning for the prevention and handling of stunting. This is because the prevalence of stunting for infants under five years of age (toddlers) in Indonesia in 2018 was 30.8%. Based on a report from Puskesmas Padang Tiji in 2018, there were 114 (18.4%) toddlers aged 23-59 months who experienced stunting, while in 2019 it increased to 138 (20.9%) toddlers with stunting. The purpose of this study was to analyze the incidence of stunting in children aged 23-59 months in the Padangtiji Community Health Center in 2020. This research method uses a case control approach. In the study, the control samples were toddlers who came to Posyandu who were randomly selected. The research sample was 50 cases and 50 controls, namely 1: 1. This research was conducted on December 10, 2020 to December 21, 2020. The statistical test used is the chi-square test by looking at the OR value and data analysis using univariate and bivariate analysis. The results of this study were the relationship between the incidence of stunting with exclusive breastfeeding (P = 0.016) (OR = 3.071), birth weight (P = 0.678), infectious diseases (P = 0.523) and birth spacing (P = 0.043) (OR = 2,421). The conclusion of this study is that there is a relationship between exclusive breastfeeding and birth spacing with the incidence of stunting in toddlers aged 23-59 months in the working area of Puskesmas Padang Tiji in 2020. The suggestions are expected to further improve health promotion in the form of counseling related to the causes and prevention of stunting in order to increase knowledge mothers regarding stunting and prevention related to infectious diseases in reducing morbidity that can lead to stunting.

Relationship of Knowledge and Family Role with Adolescent Girls' Behavior in Maintaining Reproductive Health in SMP Negeri 1 Kuta Baro Aceh Besar

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Abstract. Reproductive health is a state of complete physical, mental and social well-being and not only the absence of disease and weakness, in all matters relating to the reproductive system and its functions and processes. The phenomenon of the popularity of adolescent girls' reproductive health is more discussed and researched, while the reproductive health of young men receives less attention from the community and adolescents themselves. The lack of knowledge about reproductive processes, the importance of maintaining cleanliness of the reproductive organs, and the impact of irresponsible behavior causes some adolescents to experience problems such as adolescents less aware of the importance of maintaining their reproductive health. adolescent girls in maintaining reproductive health in SMP Negeri 1 Kuta Baro Aceh Besar in 2020. This type of research is analytic with cross sectional design. Data collection was carried out on February 24, 2020 at SMP Bar 1 Kuta Baro Aceh Besar. The total population of all young women class VII to IX in SMP Negeri 1 Kuta Baro Aceh Besar was 48 people. The research instrument used a questionnaire and data collection by interview. Data analysis uses univariate and bivariate analysis. The results of the bivariate analysis of knowledge (p = 0.008), the role of the family (p = 0.023). The conclusion is the influence of knowledge and the role of families with adolescent behavior to maintain reproductive health. It is expected that parents can carry out their role in efforts to protect reproductive health of their children by introducing reproductive health from a small age and instilling the value of character, so that children can show good behavior in relationships in the family, school, and community.

Analysis Of The Incidence Of Anemia In Pregnant Women In The Work Area Of The Peukan Bada Community Health Center, Aceh Besar Regency

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Abstract. Iron deficiency anemia is more likely to occur in developing countries than in developed countries, 36% or around 1,400 million suffer from anemia from an estimated population of 3,800 million people, while the prevalence with developed countries is around 8% or approximately 100 million people from estimated population of 1,200 million people. Meanwhile in Indonesia the prevalence in pregnancy is still high, namely around 40.1% (Ministry of Health, 2019). To find out the factors associated with the inciden ce of anemia in pregnant women in the work area of the Peukan Bada Community Health Center, Aceh Besar District, 2020. This research was conducted in the Puskesmas Peukan Bada Puskesmas work area, Aceh Besar district from 09 to 20 November 2020. The population is The entire research object or object to be studied. Population is the entire object of research or objects to be studied. The population in this study were all pregnant women in the Work Area of the Peukan Bada Community Health Center, Aceh Bes ar District in 2020, totaling 48 pregnant women from 09 to 20 November 2020. So the sample in this study used a total sampling technique, namely all pregnant women at Peukan Health Center. Bada, amounting to 48 pregnant women on November 9 to 20, 2020. The results of the bivariate analysis show that based on the results of the research that has been done, the research can collect the results of the following research that there is a relationship between maternal age and the incidence of anemia in pregnant women in the work area. of the Peukan Bada Community Health Center, Aceh Besar District in 2020. With a p value of 0.043 (p 0, 05) and there is a relationship between maternal knowledge and the incidence of anemia in pregnant women of the Peukan Bada Community Health Center, Aceh Besar District in 2020. With a p value of 0.031 (p <0.05.

Geographical Information Sytem Mappingof Agricultural Land Potential Index In West Aceh District

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Abstract. Land is a natural resource needed for agricultural business development. Land potential which has important meaning in land management and utilization. Utilization of land in accordance with the potential land owned in a certain area. Determination of land potential is needed to assist farmers in farming. The method used in determining land potential uses scoring, overlay, scoring and overlapping methods and uses five parameters in determining the Land Potential Index (IPL), namely slope, lithology, soil type, rainfall and flood hazard. The results obtained from this study are from the land potential index of West Aceh Regency and a map that presents five potential classes consisting of very low class, low class, high class, and very high class. The results showed that areas with very low land potential were 19.69%, areas with low land potential were 34.35%, areas with moderate land potential were 20.47%, areas with high land potential were 15.55. % and areas with very high land potential, namely 7.65%.

The Role of Safe Digital Branding Practices on Cyber Security Issues in Malaysia

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Abstract. The 4.0 industrial revolution has led companies towards a borderless world. Using the sophistication of technology now makes entrepreneurs unaware of the disadvantages of its use. Through digital branding practices companies are able to develop brands without market boundaries. Such sophistication has opened up opportunities for hackers to personal data of companies and more critically on national sovereignty and security. This disclosure is important to give awareness to the excitement of entrepreneurs in developing their brands using digital medium. Emphasis on the role of secure digital branding enables digital technology to be harnessed together for the sustainable development of the country.

Bullying Behavior Among High School Students in Perlis

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Abstract. This is a quantitative study that was conducted to study bullying behaviour among secondary school children. The main objective of this study is to profile bullying behaviour between two different types of secondary school that is the single sex and co-ed school. These two different types of schools were from the daily and religious secondary schools. There were two schools involved in this study, with a total number of 286 students that was chosen randomly from form 1, form 2 and form 4. The instruments used in this study were the Olweus Bullying Behaviour Questionnaire (BBQ) in assessing the bullying behaviour and Beck Depression Inventory (BDI II) in assessing depression among the school children. The reliability croncbach alpha for BBQ 0.860 towards n = 268 day high school and religious high school students. As for BDI II the croncbach alpha was 0.954 towards n = 268 day high school and religious high school students. The findings in this study shows that bullying behaviour tends to be committed by senior students. It has been found out that the victims of the bullying behaviour experienced emotional problems with fear when they are at school being the most negative outcome. As a conclusion, this study suggested for future recommendations on studying bullying behaviour focusing in different types of school settings that helps in recognizing certain bullying traits; better preventive programmes by school authorities, government or private concerned parties or agencies.

Social Mediated Crisis Communication Model: A Solution For Social Media Crisis?

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Abstract. This Concept Paper discusses organizational crisis especially social media crisis. The existence of social media makes it difficult for organizations to manage emerging crises. This concept paper is written to explain about crisis management based on the Social Mediated Crisis Communication (SMCC) model. The main purpose of this paper is to see the extent to which it can help in crisis management, especially in organizations. There is an explanation on the addition and simplification of the SMCC model to better facilitate the organization in crisis management and its main focus is through social media. Social media plays an important role when a crisis occurs because of its interactive nature compared to traditional media. The methodology based on previous studies explains the qualitative method used in the description of the addition and simplification of the SMCC model. The result of the concept of this paper is about crisis management especially social media crisis with the use of SMCC model.

The Effect Of Breastfeeding On The Events Of Breast Cancer Study Case Control In Mother Child Hospital (Rsia) Banda Aceh

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Abstract. Background: Cancer / Cancer (Ca) is a health problem for a group of non-communicable diseases. The number of new sufferers continues to increase from year to year. Indonesia as a country with a population of more than 250 million people is the fourth most populous country after China, India and America. Research objective: to determine the effect of exclusive breastfeeding on the incidence of breastfeeding at RSIA Banda Aceh. This type of research is descriptive analytic with a case control approach with 23 cases and 23 control, so that the overall sample size is 46 people. The study was conducted at the General Surgery Polyclinic of RSIA Banda Aceh on July 28 to August 7, 2020. Research results There is an effect of exclusive breastfeeding with the incidence of breast cancer in mothers at the Maternal and Child Hospital Banda Aceh Conclusions and suggestions :. Mothers who give exclusive breastfeeding can prevent the incidence of ca.mamme. It is hoped that health workers will provide health education and intensify counseling activities to be proactive in reminding and paying attention to and supporting women to have their own breasts checked from the age of 20 years. Mammography is carried out from the age of 40-49 years on a regular basis. In addition, health workers can also provide counsel about the importance of exclusive breastfeeding, besides that optimal growth and development of babies can also reduce the risk of breast cancer.

Risk Factors for Stunting Incidence in Toddlers Ages 2-5 Years at Lampisang Public Health Center Peukan Bada Aceh Besar

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Abstract. Stunting can increase the risk of death in children, as well as affect the physical and functional bodies of children. Stunting can result in children being unable to reach their genetic potential, indicating long-term events and the cumulative impact of insufficient nutrient consumption, inadequate health and care conditions. This study is an analytic study with a case control approach. The population in this study were 137 toddlers aged 2-5 years. The sampling technique was carried out by total population with a sample size of 30 toddlers who were stunted and 30 normal children. Data collection was carried out from September 30 to October 8 2020. Data analysis was performed using the chi-square test with a significance limit of 95% (P≤ 0.05). The results showed a relationship between infectious diseases (P-value = 0.039 and OR = 3. 455), income (P-value = 0.044 and OR = 3,143), food suply(P-value = 0.004 and OR = 5,000), and breast milk Exclusive (P-value = 0.018 and OR = 4.297) with the incidence of stunting in children aged 2-5 years. There is a relationship between infectious diseases, income, food suply, and exclusive breastfeeding with the incidence of stunting in children aged 2-5 years. It is hoped that health workers will be able to hold outreach activities about stunting and the impact of stunting on toddlers so that mothers under five can take action to prevent stunting.

THE ROLE OF COMPANIES AND FINANCIERS IN BUILDING A CREATIVE ECONOMY AND PROMOTING A CULTURE OF CREATIVITY AND INNOVATION AMONG STUDENTS UNIVERSITIES

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Abstract. The tendency to draw inspiration from the experiences of countries as it extracted between these experiences aims to focus on fast-growing companies, adding that providing licenses to non-governmental bodies to be present in order to transfer technology, enhance the culture of innovation and create jobs and opportunities, stressing that universities' role is to transform creative thought into A commercial project and an eagerness to go beyond the foundation stage to financial sustainability. Bander Elturki (2017).

Adoption of Big Data Analytics in Central Banks: A Conceptual Model

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Abstract. Big data is rapidly becoming a major driver for many organizations due to increase in the use of digital tools and information systems. Despite the fact that it has been around for a while, most organizations are still in the early stages of adoption. Using a TOE framework, this paper aims to propose a conceptual model consistent with the prior literature to show the moderating effect of environmental factors (government policy and institutional based trust) on the relationship between adoption of big data in central banking and its determinants. The paper has added to our understanding of the factors that influence an organization`s decision to use big data. In general, this study provide organizations, especially central banks with a realistic basis for deciding whether or not to adopt big data. Our study has extended the big data literature and will benefit future big data research.

Perimeter Description of Research Publication on Drones by Prolific Engineering Writers

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Abstract. Teaching technical writing to engineering researchers particularly post graduate students is a demanding and complex task. Often the challenge faced by the language instructor is in having inadequate understanding on students' expected writing output which is engineering research publication. While the language instructors may find the language use aspect manageable, it is the understanding on expected writing output for engineering discipline that is a challenge; therefore, supporting language module developers to understand those expected outputs is essential and needed for the advancement in language teaching. In view on the need for the description of the targeted output which is engineering publication, this study focuses on supporting the understanding of engineering research publication specifically on drones. This study is aimed to describe the perimeter of research publication on drones written by prolific engineering writers. This study examines 275 research publications indexed in SCOPUS database and also investigates 1947 research publications that cited the 275 publications as reference source. This paper presents the description on the perimeter for both groups. Such description provides a ready narrative to language instructors in this area and support the understanding on audience and reasons of writing in efforts to develop modules on technical writing for engineering postgraduate students particularly in drone engineering.

The Relationship Between Social Distancing And Interpersonal Communication Through Pandemic Covid – 19

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Abstract. Through the pandemic COVID – 19, the interpersonal communication can't be applied as our normal routine because the COVID-19 issue disease itself spread when people are to close with one and another. This research aim to identify the relationship between social distancing and interpersonal communication during pandemic COVID – 19. This study applied the Social Exchange Theory. Quantitative method is applied in this study and data were collected through the distribution of questionnaire to 131 respondents. In addition, the finding showed there are no significant difference on social distancing between male and female. This study found there is the relationship between social distancing and interpersonal communication during pandemic COVID - 19. Hence, this study contributes to the field of communication through the establishment of a more comprehensive variable related to participation in benefit of social distancing and help to developed the Social Exchange Theory.

The Effect of Financial Inclusion on Financial Efficiency and Financial Sustainability in Five ASEAN Countries

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Abstract. This study aims to focus on the effect of financial inclusion on the financial efficiency and financial sustainability in five (5) ASEAN countries, in which these countries consist of Malaysia, Thailand, Singapore, Indonesia and Philippines. Database take place from year 2003 to 2017. The empirical results in this study indicate the presence of positive relationship effect of financial inclusion on financial sustainability. On other hand, there is a negative relationship effect of financial inclusion on financial efficiency.

Medical Staff Engagement in Public Hospital: The Role of Citizenship Behaviour and Trust During COVID-19 Pandemic

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Abstract The purpose of conducting this study is to examine the effect of employee citizenship behaviour and trust on employee engagement among medical staff in one of public hospital located in the Northern Region of Malaysia. This research is carried out by using a quantitative method through the distribution of the self-directed questionnaires. Simple random sampling is utilised in this research. The sample size consisted of 160 medical staff who have participated voluntarily to involve in the study. Based on the multiple regression analysis, results presented a significant effect of citizenship behaviour on employee engagement (β=.55, t=8.07, p=.00) among medical staff in this institution. Similarly, a significant effect of trust on medical staff engagement (β=.49, t=3.34, p=.00) is presented in this study. In the current scenario, the public health institutions should actively penetrate the elements of citizenship and trust in order to remain the desired level of medical staff engagement during the COVID-19 pandemic.

Proactive fraud audit on fraud prevention: A Literature Review

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Abstract. This review is related to literature that uses a multi-method approach to assess current information and knowledge gaps concerning proactive fraud audits, internal audits, and fraud prevention. Therefore, from that point, fraud prevention is necessary for firms' activities because enterprises offer info to many sides, so they need robust and protect financial reports. Accordingly, this paper takes comparative discussion by studying and assessing the opinions of fraud threat staffing investigators and practitioners. Through the research, criminal organizations, senior staff, and workers were uncovered weak internal audits, regulations, processes, and a deficient institutional structure. Selfishness on the side of the perpetrators, wicked professionals, recruitment and retention, inefficient independent audit responsibilities, and an economic climate that exalts riches regardless of how it is acquired are all facilitators to scam in financial institutions. As a consequence, the recommendation of this paper is the researchers ought to avoid mistakes of the past by depending on internal audit alone and, most significantly; the assumption of an explicit link between the two variables is evidence of these flaws. This essential research domain would hugely aid in adopting a more deliberate task framework that finds the start-causing link

The Role of Education and Skills on Economic Growth in Malaysia

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Abstract. Economic growth is significant for a country to raise its standard of living. It is found that economic growth can be contributed by several factors such as capital, labour and total factor productivity (TFP). Therefore, this study aims to analyse the contribution of education and labour skills to economic growth in Malaysia. For this purpose, the analysis of the study is to use the Autoregressive Distributed Lag (ARDL) approach. The focus of the study is in Malaysia based on data for the period 1982–2017 obtained from the Department of Statistics Malaysia and the International Labour Organisation. The results show that only capital and labour variables with tertiary education can contribute to economic growth in Malaysia in the long run. Nevertheless, the findings of the study in the short term show that the variables of capital, labour with tertiary education, secondary education and the ratio of skilled labour can contribute to economic growth. Therefore, the country needs to allocate greater expenditure to the education and training sector as education and labour skills have a positive impact.

The Mediating Effect of Work Culture on the Relationship Between Total Quality Management and Employee Performance in Malaysia Manufacturing Industry

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Abstract. Total Quality Management (TQM) is a management philosophy and operational style centered on continuous improvement in all processes, goods, and services, with the goal of continually exceeding present and future expectations of all stakeholders. TQM is critical to the organization's ability to compete in the global marketplace. The main objective of this study is to develop a TQM performance model with the work culture as mediator. A total of 350 questionnaires were delivered to ten Malaysian manufacturing enterprises, yielding a useful sample of 294 completed surveys (84.0 percent usable response rate). The questionnaire was subjected to reliability and validity testing. The association was predicted and estimated using statistical analysis and regression. The model was assessed using Analysis of Moment Structure (AMOS) based Structural Equation Modelling (SEM). The results revealed that TQM methods had a considerable impact on employee performance, with work culture acting as a mediating factor. The findings also reveal that work culture moderated the association between TQM and employee performance to some extent.

Performance And Accountability For Sustainable Reporting And Trust: An Exploratory Study

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Abstract. NPOs in Malaysia rely on public trust to exist. However, trust has always been difficult due to a lack of accountability. This study was implemented through a comparative case of NPOs in Malaysia. Performance accountability reporting practices are crucial because NPOs involve and potentially face implications for public trust. In this study, valorising on institutional work perspective was adopted as its theoretical underpinning and mobilized to trace how NPOs engaged in elective accountability. By using the qualitative case study, in-depth interviews have been done to gain insightful information related to performance accountability reporting. Interestingly, the findings of the study suggested that performance accountability reporting had been shifted to concentrate on the non-financial disclosures include social media platform that is relevant to the public. This study contributes to the new knowledge by understandings how NPOs strategy of accountability enhance public trust and, therefore, support their mission statement.

Conceptualization of Co-worker Support: A Qualitative Study among Human Resource Practitioners

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Abstract. Along with rapid industrial and societal transformations, Human Resource (HR) profession is one of the professions that play a pivotal role in the organizations to keep abreast with the changes. Transformations will be accompanied by the changes in values, thus requiring HR practitioners to make constant revisions in the employment law and practices. In this challenging environment, employees are expected to assume greater responsibilities in or to adapt to the changing environment successfully. Such a challenging environment can be strenuous to employees. In order to cope in such an environment, employees often seek support from their social relationship at work. Therefore, this study attempts to explore the concept of co-worker support among HR practitioners. Based on the findings, six themes of co-worker support were identified. A clearer conceptualization of co-worker support established contributed to the body of knowledge. Practically, the conceptualization of co-worker support can be used to assess support-related issues pertaining to social relationship at work, which can help organizations undertake appropriate actions to strengthen employee relations and create a harmonious working environment.

Competencies of Quantity Surveyors in Construction Industry – A Review

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Abstract. The purpose of this study is to explore the influence of political connection on earnings management (EM) of the Government Statutory Bodies in Malaysia. This study utilises qualitative approach by using semi-structured interviews on 132 participants in Malaysian Federal Statutory Bodies (MFSB). The findings demonstrate that political connection is not a robust threat to EM in MFSBs. However, a good governance practices is needed to ensure that political connection in the board is responsible for the correct company organisation's financial reporting and at the same time does not lead to ethical lapses. This study outlines the need for stakeholders to consider objective mechanism in addressing the poor governance in government statutory bodies as a way to minimise earning management problems. The findings are explained through the lens of agency theory. This study represents one of the first studies that focuses on political connection and EM in government statutory bodies by using qualitative approach. The results have created a different dimension that political connection is not the primary threat to EM in government statutory body.

The Influence of Role Ambiguity on Burnout among Housemen in the Malaysian Public Hospitals: Organisational Citizenship Behaviour as Moderator

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Abstract. Evidences show that the level of burnout among housemen in Malaysia has increased or is increasing. Thus, the purpose of the study is to examine the effect of role ambiguity on burnout among housemen in the Malaysian public hospitals. Additionally, organisational citizenship behaviour (OCB) has been tested as a moderating variable in this study. By utilizing the quantitative approach, questionnaire has been distributed to housemen in 15 public hospitals, Malaysia. The Partial Least Squares Structural Equation Modelling (PLS-SEM) has been used as a tool to analyze the data. Result show role ambiguity have positive significant toward burnout and can reduce the value of burnout among housemen in Malaysia public hospitals. In addition, organizational citizenship behavior (OCB) act as moderator strengthen the relationship between role ambiguity and burnout. The value of burnout among housemen also reduce. Next, the implication of this study will provide a guide for the top management in all public hospitals on the formulation and implementation of the relevant policies. This knowledge on decreasing the level of housemen burnout may help the country to provide a better service to the communities eventually.

Research Trends on Pekasam as Heritage Food in Malaysia

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Abstract. Understanding heritage food is important and useful for planning of national identity conservation, gastronomy tourism marketing and food safety. However, research on heritage food is not uniform globally; it tends to be concentrated in specific areas or region, and thus would hinder our understanding of heritage food acceptance, marketability and sustainability. This study examined the trends in heritage food research, namely Pekasam over the past decade by analysing publication data from Scopus. In particular, this study focused on the countries in which the studies were done, the affiliation of the authors, the funding sponsor, the types of publication discipline area of research, and citation details. A total of 148 publications were examined. The results showed that research on heritage food of Pekasam is not only scarce, to such an extent a large number of the research published are in the discipline of agriculture, chemistry and engineering. Despite the small number of research publications on Pekasam, the citations on the existing publications have grown exponentially since 2017 indicating that Pekasam is a potential research topic in the area of heritage food.

The Study On Sociodemographic Variables On Youths' Patriotism By Using Non-Experimental Design

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Abstract. The objectives of this study is to examine sociodemographic as variables of youth patriotism tendencies in Malaysia. The total population was 3107 while the sample was 351 which was selected through simple random sampling method (N = 351). This survey study used a questionnaire constructed using adaptations from previous studies. Study findings were analysed using T-Test and ANOVA to obtain and compare mean values. In general ,from the 351 respondents, 29.1% of the respondents were male youth compared to 70.9 % of female youth. Respondents aged less than 20 years were 15.7 %, 21 to 22 years was 65.8 %, 23 to 25 years was 17.9 % and 26 to 28 years was 0.6 per cent. Almost half of the respondents are Malays (44.4%) Chinese (9.5%), India (4.4%) and other ethnic groups (4.1%). Therefore, Muslim respondents also showed a higher percentage than other religions (45.9%). The results of data analysis show that there is a significant difference between the tendency of patriotism with gender, ethnicity, religion and parental employment.

President Lyndon B. Johnson's Administration and the Indonesia-Malaysia Confrontation, 1963-1966: A Review of the Foreign Relations of the United States Document

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Abstract. This study focuses on the US administration of President Lyndon B. Johnson and its relationship to the Indonesia-Malaysia conflict from 1963 to 1966. The main objective of this research is to clarify issues concerning economic interests and communist threats that influenced President Johnson's administration's reaction to the confrontation. The emphasis is on the period from the end of 1964, when President Johnson replaced President John F. Kennedy, to the end of the conflict in 1966. This study employs archival research methods with material obtained from the National Archives of Singapore as well as documents from The National Archive in London. The main reference document is the Foreign Relations of the United States (FRUS) file, which contains the President's statements, memoranda, and telegrams during the conflict. The primary document has been selected, processed, analysed, and compiled to form a more objective and authoritative argument. Furthermore, secondary sources such as theses, journals, books, and memoirs were used to create a discussion narrative. In the end, this study concluded that economic interests and the communist threat influenced President Johnson's administration's reaction to the Indonesia-Malaysia conflict.

The John F. Kennedy Administration and the Formation of the Federation of Malaysia 1961-1963: A Review of Foreign Relations of the United States (FRUS)

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Abstract. This study focuses on the administration of John F. Kennedy in the United States (US) and its relationship to the founding of the Federation of Malaysia from 1961 to 1963. The primary goal of this study is to investigate the domestic and regional concerns that led to the formation of the Federation of Malaysia, which drew attention in U.S. foreign policy. The time span covered begins in 1961, when President John F. Kennedy was elected President of the United States, and ends in 1963, when he died. This study employs archival research methodologies, which include the analysis of primary documents from selected archives, including the National Archives of Malaysia, the National Archives of Singapore, and the National Archives in London. The primary document has been selected, processed, translated, and compiled to produce a more objective and authoritative argument. The primary focus was on the United States' Foreign Relations document (FRUS), which was later backed by other sources such as theses, books, memoirs, and articles. In the end, this study concluded that the formation of the Federation of Malaysia was actually within the contemplation of US foreign policy on domestic and regional issues during President Kennedy's administration.

Examination of Gender Equality towards Education, Employment and Family Management among Employees of the Malaysian Higher Education Institutions

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Abstract. The purpose of this research is to examine the perception on gender equality towards several key terms which are related in measuring gender equality in the context of Malaysian Higher Education Institutions (HEI). Specifically, this study aims to reveal the perception of employees in the HEIs located in the Northern Region of Malaysia pertaining to several concerns which are related to education, employment and family management. The sample size consisted of 370 employees of those institutions who have participated voluntarily to involve in the study. In the terms of education, results showed a different perception towards completing education in the secondary and tertiary education. Based on the descriptive analyses, results presented a high level of perception on women and employment (μ=3.46); and a medium level of perception on women and family management (μ=2.93) among employees in this study. In the current scenario, the HEIs should actively increase the level of perception towards education, employment and family management among their employees in order to ensure the overall goals of gender equality for the nation could be achieved.

Gender Equality towards Work Family Balance, Political Matters and Gender-based Violence: An Empirical Investigation in the Malaysian Higher Education Institutions

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Abstract. The goal of this research is to investigate the perception of gender equality toward several key terms related to measuring gender equality in Malaysian higher education. This research aims to reveal the perceptions of communities in the Malaysia's Northern Region higher education regarding a variety of issues such as work family balance, political matters and gender-based violence. This study employs a quantitative approach with the distribution of selfdirected Google Form questionnaires. In this research, convenient sampling is used. The sample size was made up of 370 employees from those institutions who volunteered to take part in the study. In terms of work family balance, the results showed that most participants can manage their housework while also committing to their office work, with the exception of bringing up children, which made them feel difficult to balance. According to the descriptive analyses, the results showed a medium level of perception on women and political matters (μ=3.16), as well as gender-based violence (μ=2.10) among communities in the Malaysian higher education. In the current situation, higher education institutions should actively increase the level of perception toward work family balance and political issues, while decreasing or diminishing the level of perception towards other issues related to gender-based violence. This is to ensure that the nation's overall goals and objectives for gender equality are met.

Understanding Variation of Social Accounting and Accountability: A Comparative Case within Social Enterprise

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Abstract. Social enterprises are a burgeoning sector which can make a contribution to the country's socioeconomic well-being. Numerous social organisations actively promote social values in society and address social accounting issues. Despite having a substantial impact on society, their path to measure and expand their implications is highly problematic and setbacks. This study explores how the implementation of accounting value and implementation of social accounting, particularly in reporting practices within the social enterprise. Within qualitative case study comparatively, we investigated through interviews and triangulated with documentation issues related to expectations and integration of social accounting. Three social enterprises were chosen as a case organisation and analysed using thematic analysis. The findings of our study suggested that the social enterprise tends to implement social accounting in practice. Interestingly accounting value includes reliability, comparability and transparency were less implemented in their daily activities. Also, they lacked accounting experience and practitioner within their sector. The main contribution of this study is to suggest an improvement of the governance role of social accounting as the growth of the sectors become prominent.

Mobile Banking Adoption Among SMEs using UTAUT2

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Abstract. This study examines the technology acceptance of mobile banking by SMEs by using the extended unified theory of acceptance and use of technology (UTAUT2). The context of the study is Malaysian SMEs. All constructs of UTAUT2 are studied along with security as an additional variable. A cross-sectional survey was conducted among 302 participants. The results indicated that all the study variables namely, performance effort, effort expectancy, social influence, facilitating condition, hedonic motivation, price value, habit, and security are positively associated with user acceptance of mobile banking. However, only performance expectancy and facilitating conditions have a positive significant influence on the SMEs' acceptance of mobile banking. The study model was able to explain 48.8% of the variance in user acceptance of mobile banking. The study results further extend the UTAUT2 and expand the scope for further research in technology acceptance of mobile banking, and banking behaviour among SMEs. In addition, the study findings provide insight into to Malaysian financial institutions for effective designing of their mobile banking applications to cater for all their customer segments.

Determinant Of Foreign Direct Investment Inflow in Asean+3 Countries

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Abstract. This study attempts to examine the impact of innovation, interest rate, market size, infrastructure, and inflation on foreign direct investment (FDI) inflows into ASEAN+3 countries. Data on the variables of innovation, interest rate, market size, infrastructure, inflation and FDI inflows are obtained from the World Bank Indicator and UNCTAD and covered a span of 24-year time series from the period of 1994 to 2018. For the sake of examining the long-run relationship between the independent and dependent variables the auto regressive distributed lag (ARDL) model is applied in this study.

Funding Sources and Organizational Sustainability - A conceptual framework for Social Enterprises

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Abstract. The purpose of this paper is to forward a novel conceptual framework linking access of financial or sources of funding and the sustainability of social enterprises. This is a conceptual study that examined the existing literature to propose a new framework for sustainable organizations focusing on the Malaysian perspective. Employing the lens of Resource Dependency Theory, this study explored the sources of funding and its dimensions as a facilitator for sustainable performance among social enterprises. The paper extends the current literature providing insights and forwarding policy implications at the same time. The paper could be beneficial for future researchers, who are encouraged to test the proposed framework empirically. The paper could further support policymakers and social entrepreneurs to make informed decisions.

Predictor Selection for Progression and Development of Diabetic Nephropathy among Diabetes Mellitus Type 2 Patients

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Abstract. The prevalence of diabetic nephropathy is thriving worldwide such as in the United States, Europe and Asia. Diabetic nephropathy or commonly known as “diabetic kidney disease” (DKD) is characterized by the present of albuminuria, hypertension and progressive renal failure. A variety of predictors are associated with the development, progression and severity of diabetic nephropathy. This study divides diabetes patients with diabetic nephropathy into three groups; Group 1 (diabetes patients who were diagnosed with diabetic nephropathy with the same stage for a certain period of time until the current follow-up), Group 2 (diabetes patients who were diagnosed with diabetic nephropathy without obvious clinical findings but have shown disease development) and Group 3 (diabetes patients who were diagnosed with diabetic nephropathy at a certain stage for a period time but progressively worsen over time during the current follow-up). The purpose of this study is to evaluate the predictors that are associated to patients in Groups 2 and 3. Retrospective data were collected from a healthcare center located in northern peninsular Malaysia. A total of 194 patients were included in this study. Characteristics of data include demographics information such as age, gender, race and clinical data such as glycosylated haemoglobin (HbA1c), estimated glomerular filtration rate (eGFR), urea and haemoglobin concentration (Hb). Findings show that few predictors and risk factors are significant to the development and progression of diabetic nephropathy. This study is important to reveal the significant predictors and risk factors as healthcare professionals can identify patients with risk for diabetic nephropathy and may reduce the morbidity and mortality among patients.

Media Literacy In Malaysia: A Systematic Review

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Abstract. Media literacy encompasses the practices that allow people to access, critically evaluate, and create or manipulate media. Media literacy has been defined differently in past studies, and it can be applied in traditional (print media, television, radio) and new media (Internet, video games, mobile telephony). There is a variety of studies about media literacy in different demographic backgrounds and contexts. This present paper is designed to review media literacy in Malaysian contexts. This analysis has used a systematic literature review to map up the media literacy in Malaysia. A total of 13 articles were related to the research of media literacy in Malaysia. There are various methodologies used in that particular study as well the focus group of respondents also varied according to the contexts of the study. None articles have been published about the measurement of media literacy in the Malaysian context. Therefore there is a need for Malaysian researchers to explore and establish the framework of media literacy by considering all important indicators to address issues and challenges related to the media environment.

Cultural Competency Among Malaysian Prospective Teachers

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Abstract. The reality of ethnic and cultural diversity in the classroom today is a huge challenge for teachers, especially prospective teachers. Teacher education program is an important phase in educating prospective teachers with culturally responsive pedagogy as well as to prepare them to teach students from various ethnic and cultural backgrounds. School environment consisting of students from various ethnic and cultural backgrounds requires teachers to meet their needs. Teachers must be culturally competent so they can cater for diversity in their classrooms and prepare their students to live and work in a global society. Preparing prospective teachers for this role is not an easy task and what makes it more difficult is that the diversity of teachers does not always match with the diversity of students in schools. This paper will discuss cultural competency among prospective teachers and related theories regarding this issue. Teachers and prospective teachers should show professional competencies that will enable them to work effectively, respectfully, and ethically with students from diverse ethnic and cultural backgrounds.

The Effects Of Cognitive Behavioural Therapy Group Intervention On Locus Of Control Among Drug Abusers

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Abstract. The reality of ethnic and cultural diversity in the classroom today is a huge challenge for teachers, especially prospective teachers. Teacher education program is an important phase in educating prospective teachers with culturally responsive pedagogy as well as to prepare them to teach students from various ethnic and cultural backgrounds. School environment consisting of students from various ethnic and cultural backgrounds requires teachers to meet their needs. Teachers must be culturally competent so they can cater for diversity in their classrooms and prepare their students to live and work in a global society. Preparing prospective teachers for this role is not an easy task and what makes it more difficult is that the diversity of teachers does not always match with the diversity of students in schools. This paper will discuss cultural competency among prospective teachers and related theories regarding this issue. Teachers and prospective teachers should show professional competencies that will enable them to work effectively, respectfully, and ethically with students from diverse ethnic and cultural backgrounds.

Health Related Social Media Use : A Systematic Review

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Abstract. Social media has been widely used for health-related purposes, especially during the COVID-19 pandemic. Previous reviews have summarized social media uses for a specific health purpose such as health interventions, health campaigns, medical education, and disease outbreak surveillance. This study aimed to provide a systematic review of social media uses for health purposes that have been identified in previous studies. The researchers searched for peer-reviewed journal articles published between 2010 and 2020 in 12 databases covering medicine, public health, and social science. After coding the articles in terms of publication year, journal area, country, method, social media platform, and social media use for health purposes, the researchers provided a review of social media use for health purposes identified in these articles. This study summarized 10 social media uses for various health purposes by health institutions, health researchers and practitioners, and the public. Social media can be used for various health purposes. Several new usages have emerged since 2013 including advancing health research and practice, social mobilization, and facilitating offline health-related services and events. Research gaps exist regarding advancing strategic use of social media based on audience segmentation, evaluating the impact of social media in health interventions, understanding the impact of health identity development, and addressing privacy concerns.

Privacy Concerns as Predictor in Online Self-Disclosure: A Concept

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Abstract. A large number of online interaction and sharing of personal information on social media networking sites has raised new privacy issues. This is said to be due to online users' lack of privacy concerns, thus promoting online self-disclosure in social media. Against this concern, this paper will provide a conceptual understanding on the predictor towards online self-disclosure, which is privacy concerns among the users. According to the summary of literature, it is hypothesized that privacy concerns will hamper self-disclosure online. Based on the proposed framework, propositions are formulated as a basis for the study that will follow.

Psychological Factors Influencing Online Buying Behaviour

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Abstract. Online shopping has become a trend today and a survey shows that youngsters among Generation Y are the most active users on using online shopping. In the meantime, National Consumer Complaints Centre (NCCC) has received lots of complaints about online shopping scams. Therefore, this study determines the psychological factors influencing online shopping behaviour among students of Universiti Malaysia Perlis (UniMAP). A conceptual framework is proposed by applying the constructs of Theory of Planned Behaviour (TPB). This quantitative research used a questionnaire via google form link distributed to 390 respondents selected by convenience sampling among UniMAP students. Descriptive analysis and Pearson Correlation Coefficient are used to analyse the data collected. The results showed that attitude, perceived risks and perceived benefits had no relationship toward online buying due to r-value = <0.05. Meanwhile, subjective norms have a very weak relationship with P-value = .010 and perceived behaviour control very highly correlated with online shopping (P-value = 0.870). Perceived behavioural control influences an individual's understanding of the complexity or ease of executing a specific action, concluding that psychological factors partially influence online shopping among UniMAP's students.

Memory Inhibition and Later Retrieval

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Abstract. Forgetting is adaptive because it decreases future interference (a conflict between information in memory), and it enables selectivity of information recollection. Thus, relevant information can be activated, and irrelevant information can be inhibited. Memory inhibition is the ability to override memory as a whole or a part of it, with or without intention. This conceptual paper will provide an in-depth literature review based on a few empirical types of research that provide evidence that information in memory can be inhibited and the attempt to impede memory would hinder the information retrieval later. Within this study, the author identified various empirical research that inhibition of the memory is possible through (a) retrieval-induced forgetting, (b) directed forgetting, and (c) direct suppression: think and no-think paradigm. In addition, research gaps and limitations are identified, which would provide additional information for extended research in future.

Enhancing Tourist's Experience In Tourism by Developing of Augmented Reality on Penang's Street Art

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Abstract. This study aims to enhance tourists experience in tourism by the development of an Augmented Reality on Penang's street art. The problem is lack of information on street art and the difficulty to preserve street art. The first objective is to preserve the cultural heritage of Penang's street art through Augmented Reality. Other objective aim to develop an animated augmented reality with text, music and graphics that can educate and enhance tourist's experience. Adobe Photoshop, Adobe Illustrator, Adobe Premiere Pro, Adobe After Effects, and Unity3D had been used as the tools. Alessi and Trollip Model (2001) used as a reference in the development of the project. The results shows that the research objective of this study was successfully achieved. Augmented Reality application provides a new experience for tourists in their search of street art in Penang to learn more about the history of Penang and to experience enhanced tourism. Through the interview, the experts, tourism consultants and multimedia students were satisfied with this augmented reality application in enhancing Penang's street art.