



ARC-IPN CONFERENCES LANGKAWI 2023





ARC - IPN Kuala Lumpur Conference 2023

International Conference on Applied Science and
Mathematics (ICASM 2023)

5th International Conference on Business and Management
(ICBM 2023)

7th International Conference on Mechanical and Automotive
Engineering (ICMA 2023)

KUALA LUMPUR, MALAYSIA

03-05 MAY 2023





Welcome to ARC-IPN Conferences 2023

Dear Professor, Dr and distinguished delegates,

Welcome to the ARC-IPN Conferences 2023 in Kuala Lumpur, Malaysia. On behalf of **AAN Research Center (ARC) and IPN Education Group Conference Management (IPN)**, I would like to thank all the Conference Chair, Program Chairs and the Technical Committees. Their high competence and professional advice enable us to prepare the high-quality programs. For the participants, we hope all of you have a wonderful time at the conference and also in Kuala Lumpur, Malaysia.

We believe that by this excellent conference, you can get more opportunities for further communication with researchers and practitioners. For the **International Conference on Applied Science and Mathematics (ICASM 2023)**, **5th International Conference on Business and Management (ICBM 2023)** and **7th International Conference on Mechanical and Automotive Engineering (ICMA 2023)** more than 50 submitted papers have been received and 27 papers have been accepted and published finally.

In order to hold more professional and significant international conferences, your suggestions are warmly welcomed. And we are looking forward to meet you again next time.

**Best Regards,
Thank you.**

Yours Sincerely,

A handwritten signature in black ink, appearing to read "Syed", with a long horizontal stroke extending to the right.

Dato' Syed Azuan Syed Ahmad, DIMP
Director of Conference Management
AAN Research Center

Message from ARC Honorary Advisor

On behalf the AAN Research Center (ARC), it is my privilege to welcome you to the ARC-IPN Kuala Lumpur Conferences 2023. ARC is an independent, non-political, non-governmental organization of distinguished scientists dedicated to advancing science around the world. We aim to help scientists and researchers to publish their findings in scientific journals and to promote and help to organize worldwide conferences. We believe that has no boundaries, regardless of the great distances between countries and continents. Thus ARC welcomes contributions from researchers from all concern irrespective to the race, colour, religion and nationality.

Best Regards



Prof. Dr. Makhmud Kharun
Advisor of AAN Research Center

About AAN Research Center

AAN Research Center, we perceive the process of discovery as a creative and rigorous endeavor. We encourage such exploration by supporting the research and development of ideas, solutions, and applications to benefit our community. AAN Research Center strives to inspire students and academic staff to share and serve in the educational field. The AAN Research Centre at ASEAN Academic Network aims to promote the enjoyment of learning and publishing research. ASEAN community values learning and research at all levels. A dynamic range of conferences, workshops, and programs related to research in all disciplines exists to supplement this research center's ongoing development.



www.aseanacademicnetwork.org
<http://www.aseanacademicnetwork.org/arc-conferences.html>
www.ipneducationgroup.org

ANNOUNCEMENT

All accepted papers will be published in International Referred Journal indexed in MyCITE, Crossref, Google Scholar etc.

Selected papers subject to reviewers' comments will be invited for submission to the Scopus / WOS-ESCI Indexed journals with extra publication fee.

One Best Presenter Award will be selected from each oral session. The Certificate for Best Presenter award will be awarded after presentation session.

KEYNOTE SPEAKER:



Prof. Dr. Khalid Hussain

School of Computing and Informatics,
Albukhary International University
Alor Setar Kedah Malaysia

Abstract:

Thought Borrowing to Support the Declined Business Trends

Humanity is enjoying the fruition of digital era as things are evolving and enhancing at a rapid pace. All aspects of our lives are influenced by many digital systems from mobiles, watches, medical devices, home appliances, work area computerization and digital economies. The amount of data that is being produced is mammoth in size. Most of this data carry sensitive private information that must be protected. Due to the ease and low price of communication networks and devices we have grown comfortable with the idea of generating data that is concerning our private lives. Also, without following any guidelines this private data as well as work related data is being transmitted across social media platforms. In 2013 UK government announced a £1.9 billion investment in cybersecurity for the next five years because of the fact that they realized the importance of securing their systems and work environment as soon as possible. In 2016 a single breach that had an impact of £1.3 Million was reported in UK. According to literature review a survey report published by Institute for Criminal Justice Studies, University of Portsmouth in 2019, data loss in a business environment was up to 31% due to hardware or system failure. Whereas 29% data was lost due to human error and 29%

was due to data breach and the financial impact was around \$3.86 million. Specifically, Healthcare organizations had the highest costs associated with lost or stolen records at \$408 Million. During the last 30 years, many more countries has undergone extreme transformations concerning population and economic conditions. This pushed Pakistan and Malaysia into a vulnerable position than ever before, it is increasingly essential to proactively address cyber security related vulnerabilities and counter measures. During the last few years in Pakistan and Malaysia has been hit by a series of hacking attacks on critical banking and government digital infrastructure. For compiling a report that could furnish some bench marks of types of data loss and their financial impact a pilot project, where 422 software houses technical and managerial staff was interviewed or asked to fill a survey form was initiated in 2019. The questions asked were related to the lost data due to viruses, malware, and ransomware and the precautions or counter measures taken by the relevant staff. This study was focused on identifying the amount of data lost and its financial implications as well as the preparedness of the technical staff in handling such hacking attacks. Due to the novelty of the domain the amount of data that was captured was limited hence several simplifying assumptions had to be made during this study.

LIST OF THE CONFERENCE COMMITTEE

ARC-IPN Kuala Lumpur Conferences 2023, Honorary Advisor

Prof. Dr. Hany El-Mesiry, Jiangsu University, China

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INSTRUCTION FOR ORAL PRESENTATION

Devices Provided by the Conference Organizer:

- Laptop (with MS-Office & Adobe Reader)
- Projector & Screen
- Laser Sticks

Materials Provided by the Presenters:

- PowerPoint or PDF files

Duration of each Presentation (Tentatively):

- Regular oral presentation: about 15 minutes (including Q&A)
- Keynote speech: about 40 minutes (including Q&A)

Notice: Please keep your belongings (laptop and camera etc) with you!

During registration:

Original Receipt

Representative / Pass Card with lanyard

Participation Certificate (collected from Session Chair after the session)



ARC-IPN Kuala Lumpur Conferences 2023
3-5 May 2023
Kuala Lumpur, Malaysia

May 03, 2023	Venue:	1000 - 1200	Registration	
	Venue:	0830 – 0845	Opening Remarks	Opening Remarks
May 04, 2023		0845 – 1000	Plenary Speech 1	Keynote Speaker
		1000 – 1030	Group Photo and Coffee Break	
	Venue:	1030 – 1230	Session 1	
	Venue:	1230 – 1400	Lunch	
	Venue:	1400 – 1600	Session 2	
May 05, 2023	Lobby hotel	0800 - 1200	Networking	

Session 1
Time: 0915 - 1030
Venue:
Session Chair:



No	Paper ID	Presenter
1	011-icasm	Interaction of Hidden Behaviours, and Influencing Factors on Bitcoin Prices Movement via Linear Structural Time Series (STS) Nurazlina Binti Abdul Rashid, Mohd Tahir Bin Ismail <i>Universiti Sains Malaysia, 11800 USM, Pulau Pinang, Malaysia</i>
2	018-icasm	A Bibliometric Analysis of The ARFIMA Model During 1993-2022 Amirah Hazwani Abdul Rahim and Mohd Tahir Bin Ismail <i>Universiti Sains Malaysia, 11800 USM, Pulau Pinang, Malaysia</i>
3	005-icasm	Humanitarian Emergencies: Visual Kinship Recognition for Forensic Identification Nurbaity Sabri, Faiqah Hafidzah Halim, Abdul Hasib Sadiqin Adam Shukri , Anis Amilah Shari, Noor Suriana Abu Bakar, Zuhri Arafah Zulkifli and Hazrati Zaini <i>Universiti Teknologi MARA (UiTM), Cawangan Melaka, Malaysia</i>
4	006-icasm	Role of mediation of Social Media Engagement between Social Media Digitalization of SMEs performance with the moderation of Organizational Agility in Central Thailand Chanyanan Somthawinpongchai <i>School of Liberal Arts (Digital Arts), Metharath University, Thailand</i>
5	008-icasm	Annealing Temperature Dependent Morphological and Optical Properties of Indium Gallium Zinc Oxide Thin Films Jieh Sim Lim and Fong Kwong Yama <i>School of Physics, Universiti Sains Malaysia (USM), 11800, Penang, Malaysia</i>
6	004-icasm	The Characterization and Physicochemical Properties of Vegetable Oil and Animal Fat Based Soap with Stearic Acid as Emulsifier Atiqah Aziz, Zalina Zakaria and Nor kartini Abu Bakar <i>Universiti Malaya Halal Research Centre (UMHRC), Malaysia</i>
7	014-icasm	Workload Analysis Using the Full Time Equivalent Method for the Manual Pre-Feasibility Study Document Mukhoiyarotuz Zamrudah, Filscha Nurprihatin, Surya Danusaputro Liman, Tika Endah Lestari, Vanessa Bertholdo Vargas, Moacyr Machado Cardoso Junior <i>Sampoerna University, Indonesia</i>
8	003-icma	Mechanical Properties of Nano-Coating Materials Journal Bearing, Part-1 Salloom A. Al-Juboori <i>Engineering Faculty, Mutah University, ALKARK, JORDAN</i>

Session 2
 Time: 1400 - 1630
 Venue:
 Session Chair:

No	Paper ID	Presenter
1	007-icasm	<p>The Recent Trends in The Extraction of Lignin from Kenaf Fibers by The Soxhlet Extraction Method</p> <p>Hifza Rouf, Anita Bt Ramli</p> <p><i>Universiti Teknologi PETRONAS, 32610 Seri Iskandar, Perak, MALAYSIA</i></p>
2	013-icasm	<p>Computational Scheme for Inverse Electromagnetic Scattering using Global Optimization and Generalized Mie Theory to Reconstruct Multiparticle Aggregate Configurations</p> <p>Yoon Tiem Leong</p> <p><i>Universiti Sains Malaysia, Malaysia</i></p>
3	002-icbm	<p>Based Bibliometric Analysis</p> <p>Hao Wu*, Anusuiya Subramaniam and Syafiqah Rahamat</p> <p><i>Universiti Putra Malaysia, Selangor, Malaysia.</i></p>
4	015-icasm	<p>Service Quality Performance Measurement using Customer Satisfaction Index, GAP Analysis and Importance Performance Analysis</p> <p>Joelinus Jason Hidayat and Filscha Nurprihatin</p> <p><i>Sampoerna University, Indonesia</i></p>
5	016-icasm	<p>Testing Service Quality of Fixed Broadband Services, Indihome, During Pandemic Covid-19 Using SEM</p> <p>Nyayu R. Tridanisa, Filscha Nurprihatin and Nurul Retno Nurwulan</p> <p><i>Sampoerna University, Indonesia</i></p>
6	009-icasm	<p>Influence of CBD Growth Duration on the Morphological, Structural and Optical properties of ZnO</p> <p>Yexing Luo, Oluwaseun Adedokunb and Fong Kwong Yam</p> <p><i>Universiti Sains Malaysia (USM), Malaysia.</i></p>
7	020-icasm	<p>Brain Evoked Potential of Emotional Arousal Processing in Young Malaysian Adults</p> <p>Yogendren Murugia and Nasir Yusoff*</p> <p><i>Universiti Sains Malaysia, Kelantan, Malaysia.</i></p>
9	012-icasm	<p>Transfer Learning with CNNs for Age and Gender Prediction</p> <p>Kshitiza Vasudeva and Saravanan Chandran</p> <p><i>National Institute of Technology, Durgapur, India</i></p>

Conference Venue



Ibis Styles Kuala Lumpur Fraser Business Park
1, Jalan Metro Pudu 2, Fraser Business Park,
55200 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur

Conference Secretariat Contact:

AAN RESEARCH CENTER
No. 7, Tingkat Atas,
Jalan Penjara, 01000 Kangar,
Perlis, Malaysia

Programme website:
www.aseanacademicnetwork.org



Note



List of Abstract

No	Paper ID	Presenter
1	004-icasm	<p>The Characterization and Physicochemical Properties of Vegetable Oil and Animal Fat Based Soap with Stearic Acid as Emulsifier</p> <p>Atiqah Aziz¹, Zalina Zakaria¹ and Nor kartini Abu Bakar²</p> <p>¹Universiti Malaya Halal Research Centre (UMHRC), Universiti Malaya, 50603, Kuala Lumpur, Malaysia ² Department of Chemistry, Faculty of Science, Universiti Malaya, 50603, Kuala Lumpur, Malaysia</p> <p>Abstract: Soap is used as a body cleanser, in the form of solid, foamy, with or addition of other ingredients. The use of stearic acid gives an added value to the soap products for daily used. In this study, the characterization of vegetable oil and animal fat was evaluated by GCMS and FTIR. The cosmetic soap samples used in this work were prepared in the laboratory and the quality parameters of the soap samples were evaluated based on the Malaysian Standard Guidelines. The FTIR spectra showed the presence of ester, alkene, amine salt, and carboxyl compounds in palm oil whereas lard revealed different types of biomolecules than palm oil except for the carboxyl and alkene group. FAME in palm oil and lard shows a balance ratio of saturated and unsaturated fatty acid. The stearic acid level in lard also is very high. By the analysis of soaps, the values obtained for free caustic alkalinity, total fatty matter content (TFM) and degree of acidity (pH) were closer to the International standard. According to this, the total free alkali content is 2%, total fatty matter content is minimum 76 % and pH is 9 – 11. Among analysed soaps, it is observed that, all of them is having alkali content in the range of 2-5%, TFM between ± 70-90% and pH value of 8-10. The quality of foam for soap products is not determined by other standards, but it is related to consumer perception and aesthetics.</p>
2	005-icasm	<p>Humanitarian Emergencies: Visual Kinship Recognition for Forensic Identification</p> <p>Nurbaity Sabri, Faiqah Hafidzah Halim, Abdul Hasib Sadiqin Adam Shukri, Anis Amilah Shari, Noor Suriana Abu Bakar, Zuhri Arafah Zulkifli and Hazrati Zaini</p>

		<p><i>Kolej Pengajian Pengkomputeran, Informatik & Media, Universiti Teknologi MARA (UiTM), Cawangan Melaka, Kampus Jasin, 77300 Merlimau</i></p> <p>Abstract: As the most fundamental and ubiquitous human connections, kinship is established on marital bonds or blood. The link that parents have with their children, including the links among siblings and specific individuals or groups in relation to the model of biological relationships can establish a network of enduring ties. In humanitarian emergencies, forensic scientists need a blood sample, dental and physical to identify the relationship between the children and the family member is crucial. Therefore, this research aims to visually kinship recognition using the Malay family in Malaysia as a dataset. This research includes the face detection process, the feature extraction method, and finally the classification process. First, the process of face detection will determine the facial region before extracting the eye area from the facial surface. The features extraction method was applied to extract the eyes area into numerical value for the classification process using three layers of a Convolutional Neural Network (CNN) prior to using a Support Vector Machine (SVM) for the classification of images according to family classes. 45 out of 60 images have been successfully recognized according to two classes of families and achieved 75% overall classification accuracy. This research shows promising results where it able to be applied by the Malaysian forensic team when facing a humanitarian emergency</p>
3	006-icasm	<p>Role of mediation of Social Media Engagement between Social Media Digitalization of SMEs performance with the moderation of Organizational Agility in Central Thailand</p> <p>Chanyanan Somthawinpongsai</p> <p><i>School of Liberal Arts (Digital Arts), Metharath University, Thailand</i></p> <p>Abstract: The study aims to evaluate the association between Central Thailand SMEs' performance and social media digitalization elements. Through adequate strategic planning to integrate the right digital skills into the work culture, SMEs can maintain the implementation of digitalization to achieve performance sustainability. This study examines how digital strategic planning could help SMEs perform better. The data is measured and analyzed using SPSS and Smart-PLS software. According to the study's criteria, all hypotheses are accepted and supported because the p values are significant and the t values are greater than 1.96. It has been determined that there is an important relationship between the established hypotheses. This is a result of developing digital abilities. SMEs with sufficient digital capabilities are proficient in using digital platforms for e-commerce, such as social media.</p>
	007-icasm	<p>The Recent Trends in The Extraction of Lignin From Kenaf Fibers by The Soxhlet Extraction Method</p> <p>Hifza Rouf, Anita Bt Ramli</p> <p><i>Hi-COE Centre for Biofuels & Biochemicals, Fundamental & Applied Sciences Department, Institute of Self-Sustainable Building, Universiti Teknologi PETRONAS, 32610 Seri Iskandar, Perak, MALAYSIA</i></p> <p>Abstract: Because of rising and uncontrolled dependence on fossil fuels, appropriate sources are vitally required. The most appealing potential approach is the conversion of biomass (natural fiber) into energy and chemicals. In recent</p>

		<p>years, kenaf has been extensively cultivated among the many natural fibers due to its tensile strength, lightweight, and cost-effective characteristics. Cellulose, hemicellulose, and lignin are the primary components of kenaf fiber. After cellulose, lignin is the most prevalent natural polymer. Due to its recyclable, carbon-neutral qualities, environment-friendly, antioxidant, and antibacterial properties, lignin is widely used as an industrial by-product. Different techniques are extensively used to extract lignin from kenaf fiber which may affect the molecular mass, functional group, and structural heterogeneity of lignin. Kraft, sulfite, and soda pulping are the three most popular lignin extraction techniques. As opposed to the kraft process, which produces lignin with the sulfur present as thiols, soda pulping can produce sulfur-free lignin. The sulfite procedure yields lignin with the maximum sulfonate moiety concentration. Due to current environmental regulations, sulfur-free lignin is more appropriate for industrial applications. This study aims to extract sulfur-free lignin from retted kenaf fiber through the Soxhlet extraction method using ethanol and water as solvents. The extracted lignin was evaluated using Fourier transform infrared spectroscopy (FTIR), ultraviolet-visible (UV-vis) spectroscopy, and thermal analysis (TGA) after being separated using the Soxhlet apparatus. The percentage of lignin extracted was 27.5%, which was more than previously recorded yields.</p>
<p>4</p>	<p>008-icasm</p>	<p>Annealing Temperature Dependent Morphological and Optical Properties of Indium Gallium Zinc Oxide Thin Films</p> <p>Jieh Sim Lim and Fong Kwong Yama</p> <p><i>School of Physics, Universiti Sains Malaysia (USM), 11800, Penang, Malaysia</i></p> <p>Abstract: Indium gallium zinc oxide (InGaZnO₄) films were grown on p-type silicon (100) and quartz substrates using radio frequency (RF) magnetron sputtering at room temperature. Based on the measurement and characterization techniques of field-emission scanning electron microscopy (FESEM), atomic force microscopy (AFM) and ultraviolet-visible-near infrared (UV-Vis-NIR) spectrophotometer, the effect of postdeposition annealing temperature in nitrogen (N₂) ambient on the surface morphologies, roughness, atomic composition and optical properties of InGaZnO₄ films grown under the same conditions was investigated. The results indicate that the change in optical bandgap is closely related to the indium to gallium (In/Ga) atomic ratio. FESEM measurement reveals changes in the grain size of InGaZnO₄ thin films with varying annealing temperatures. The surface becomes rougher, i.e. from 1.49 to 18.3nm upon annealing up to 850°C. The average transmittance of IGZO films decreases as the annealing temperature is raised from 400 to 700°C, but slightly increases back when the annealing temperature is further elevated to 850°C. The optical bandgap narrows from 3.83 to 3.71eV with the increase in annealing temperature, correlating well with the rising trend of In/Ga atomic ratio.</p>
<p>5</p>	<p>009-icasm</p>	<p>Influence of CBD Growth Duration on the Morphological, Structural and Optical properties of ZnO</p> <p>Yexing Luo, Oluwaseun Adedokunb and Fong Kwong Yam</p> <p>¹<i>School of Physics, Universiti Sains Malaysia (USM), 11800, Penang, Malaysia.</i> ²<i>Dept. of Pure and Applied Physics, Ladoke Akintola University of Technology, Ogbomoso, P.M.B 4000, Nigeria</i></p> <p>Abstract: This paper reports the study of physical properties of Zinc oxide (ZnO) thin films grown on glass as the substrate by chemical bath deposited (CBD) method with different durations. The morphological, structural and optical</p>

		<p>properties of ZnO films have been studied by the field-emission scanning electron microscopy (FESEM), X-ray diffraction (XRD) and ultraviolet-visible-near infrared spectrophotometer (UV-Vis-NIR). The FESEM measurements demonstrate that all the films consist of homogeneous and well-aligned ZnO nanorods, and the film thicknesses increase with growth time. The XRD patterns show that all the ZnO films have good crystal quality with intense and sharp (002) dominant peak. Optical bandgap as derived from UV-Vis-NIR measurements is found to be ranging from 3.36 to 3.40 eV. The Swanepoel method also has been employed in determining the refractive index and optical thickness of ZnO thin films. The optical thickness values calculated based on Swanepoel method is relatively in good agreement with the physical thickness measured by FESEM.</p>
<p>6</p>	<p>011-icasm</p>	<p>Interaction of Hidden Behaviours, and Influencing Factors on Bitcoin Prices Movement via Linear Structural Time Series (STS)</p> <p>Nurazlina Binti Abdul Rashid^{1,2}, Mohd Tahir Bin Ismail¹</p> <p>¹<i>School of Mathematical Sciences, Universiti Sains Malaysia, 11800 USM, Pulau Pinang, Malaysia</i> ²<i>Mathematical Sciences Studies, College of Computing, Informatics and Media, Universiti Teknologi Mara (UiTM) Cawangan Kedah, Kampus Sungai Petani, 08400 Merbok Kedah, Malaysia.</i></p> <p>Abstract: In cryptocurrency series, it can be challenging to make accurate predictions when the data series contain nonstationary and nonlinear patterns. Furthermore, recent studies have shown that demand and supply, as well as macroeconomic information, can immensely influence cryptocurrency price movements. Therefore, this study aims to identify the interaction between hidden behaviours and influencing factors on the movement of Bitcoin closing prices. In this study, the linear structural time series (STS) model has been proposed to deal with uncertainties by using prior information about the structure of the model. As a result, the best-proposed model will identify and investigate the interaction of hidden behaviours and influencing factors of Bitcoin price movement in the STS. The results were obtained with explanatory variables (Local Level with Drift + Deterministic Seasonal) being the best estimated model compared to other proposed models in detecting the interaction of Bitcoin price movement.</p>
<p>7</p>	<p>012-icasm</p>	<p>Transfer Learning with CNNs for Age and Gender Prediction</p> <p>Kshitiza Vasudeva and Saravanan Chandran</p> <p><i>Department of Computer Science and Engineering, National Institute of Technology, Durgapur, India</i></p> <p>Abstract: Facial traits are unique to each individual and have various applications in computer vision research. Facial traits are used for person identification, preventing identity fraud and exploitation, forensics, and in nutrition recommendation systems. Hand-crafted features, face detection and identification, regression models, and the use of demographic data were all traditional ways for estimating age and gender. These algorithms had limitations, but the introduction of deep learning techniques has resulted in increased performance and accuracy in age and gender estimate. However, it is one of the demanding research area due to diversity in appearance, unbalanced data distribution, a lack of labelled data, and privacy concerns. Therefore, this research word addresses the topic of estimating human facial age and gender</p>

		utilizing transfer learning of some pre-trained CNNs, specifically EfficientNetB7 and ResNet50 architecture. An improved CNN model is proposed which is trained on pre-processed Adience benchmark dataset. The model's performance is compared with seven state-of-the-art approaches. Our proposed method achieved highest test accuracy 69.78% for age estimation and 74% for gender prediction on Adience benchmark dataset.
	013-icasm	<p>Computational Scheme for Inverse Electromagnetic Scattering using Global Optimization and Generalized Mie Theory to Reconstruct Multiparticle Aggregate Configurations</p> <p>Yoon Tiem Leong</p> <p><i>Universiti Sains Malaysia, Malaysia</i></p> <p>Abstract: A forward scattering problem involves calculating the scattered electromagnetic (EM) field based on information about the configuration of an aggregate target. The Generalized Mie theory (GMT) provides a framework for solving forward scattering problems, allowing the optical response of a scattering event in which an electromagnetic wave interacts with a target composed of multiple particles to be calculated. However, deducing the aggregate's configuration from the scattered EM field poses a significant challenge as it requires solving a global optimization problem. In this paper, we propose a computational scheme to address this challenge by combining the global optimizer of the Design Analysis Kit for Optimization and Terascale Applications (Dakota) package with the Generalized Multiparticle Mie-solution (GMM) calculator. We demonstrate the working principle of our approach by applying it to synthetic scattering cross-section curves generated using randomly generated aggregate configurations. Our results show that the Dakota-GMM scheme can reproduce the scattering curve by minimizing the discrepancy between the experimental and synthetic data. However, we observed that the globally minimized configurations did not match the ground-truth configurations used to generate the mock data. This discrepancy is attributed to the inability of global optimization algorithms to locate the desired global minimum in high-dimensional parameter space. Nonetheless, our study provides valuable insights into future attempts to solve inverse electromagnetic scattering problems using the proposed approach</p>
8	014-icasm	<p>Workload Analysis Using the Full Time Equivalent Method for the Manual Pre-Feasibility Study Document</p> <p>Mukhoiyarotuz Zamrudah¹, Filscha Nurprihatin¹, Surya Danusaputro Liman¹, Tika Endah Lestari¹, Vanessa Bertholdo Vargas², Moacyr Machado Cardoso Junior²</p> <p>¹<i>Department of Industrial Engineering, Sampoerna University, L'Avenue Building, Jl. Raya Pasar Minggu No.Kav. 16, Pancoran, South Jakarta 12780, Indonesia</i> ²<i>Instituto Tecnológico de Aeronautica, Praça Marechal Eduardo Gomes, 50 - Vila das Acacias, São José dos Campos - SP, 12228-900, Brazil</i></p> <p>Abstract: This research proposes the importance of workload analysis to keep the burden of workers distributed fairly or on a normal scale. The workload distribution determination using the FTE (Full-Time Equivalent) quantitative approach. This study aims to measure the total burden of each category of workers while adding improvement analysis for team arrangement and minimum time required to complete one product of engineering tools as a form of pre-feasibility study manual document in the Engineering Development of New</p>

		<p>Renewable Energy Power Generation Department at Indonesia's State Electricity Company. There are nine discipline categories involved with a total of 16 workers. There are two overloaded categories which are civil engineer staff and electrical and I&C requires additional workers. Since both tasks' responsibilities are crucial and a lot of details have to be inputted. As for the evaluator and project administration categories, they are underloaded and can be reduced by one worker each for efficiency. For minimum time required calculate using software of QM for windows and resulting up to 51.6%-time efficiency.</p>
9	015-icasm	<p>Service Quality Performance Measurement using Customer Satisfaction Index, GAP Analysis and Importance Performance Analysis</p> <p>Joelinus Jason Hidayat and Filscha Nurprihatin</p> <p><i>Department of Industrial Engineering, Sampoerna University, L'Avenue Building, Jl. Raya Pasar Minggu No.Kav. 16, Pancoran, South Jakarta 12780, Indonesia</i></p> <p>Abstract: Increasing competition in the electricity industry and green energy options encourage the electricity industry to respond swiftly to fulfill customer needs by providing the finest service quality. PLN, Indonesia's largest electrical company, and state-owned enterprise must continue to strive to provide the best services to its customers. The purpose of this research is to assess and analyze customer satisfaction at DIV PET PLN to provide solutions and areas for improvement in the company's service quality. This study is descriptive quantitative research with a sample of 11 respondents who are company entities that use company products and services; assessed using the Customer Satisfaction Index (CSI), Gap Analysis (GAP), and Importance Performance Analysis (IPA). With a score of 94.087, the customer satisfaction level for company service quality was found to be very satisfactory. According to gap analysis results, five significant negative gaps in company service quality need to be rectified. The result from the Importance performance analysis showed that the company should concentrate on five service quality attributes that fall in quadrant I and place a low priority on three service quality attributes that fall in quadrant III. The company is suggested to continuously improve its service quality to increase customer satisfaction with company services.</p>
10	016-icasm	<p>Testing Service Quality of Fixed Broadband Services, Indihome, During Pandemic Covid-19 Using SEM</p> <p>Nyayu R. Tridanisa, Filscha Nurprihatin and Nurul Retno Nurwulan</p> <p><i>Department of Industrial Engineering, Sampoerna University, L'Avenue Building, Jl. Raya Pasar Minggu No.Kav. 16, Pancoran, South Jakarta 12780, Indonesia</i></p> <p>Abstract: Nowadays, the globalization era requires people to have an internet connection to do their daily business activities that always connect people in real-time interactively. The earliest and largest internet provider state-owned company that hugely serves telecommunication for Indonesian received a massive demand for the internet which also means an increasing number of internet users as well as broadband service during the Pandemic Covid-19. Hence, the performance of this largest state-owned internet provider needs to be identified to see the customer's experience. Service quality theory becomes a powerful tool as the indicator to help identify and measure each of the latent variables, where in this case, this research uses Structural equation modeling to analyze the multivariate variable that combines the regression and path analysis model. This research used a questionnaire and interview procedure to collect</p>

		<p>the data and process it to the AMOS Software. From SEM analysis, the relation between Tangible to Customer Satisfaction, Reliability to Customer Satisfaction, Responsiveness to Customer Satisfaction, Assurance to Customer Satisfaction, and Empathy to Customer Satisfaction showed the p-values failed to reject the hypotheses, which accepted the null hypothesis. Thus, the customers were not satisfied with the services in all five service quality dimensions. The five dimensions indicated a problem in customer level of satisfaction. Therefore, it is recommended for the company to have further analysis to increase satisfaction in specific dimensions. They may use market research methods, quality control, survey feedback, and other techniques to increase customer satisfaction.</p>
11	018-icasm	<p>A Bibliometric Analysis of The ARFIMA Model During 1993-2022</p> <p>Amirah Hazwani Abdul Rahim^{1,2} and Mohd Tahir Bin Ismail¹</p> <p><i>¹School of Mathematical Sciences, Universiti Sains Malaysia, 11800 USM, Pulau Pinang, Malaysia</i> <i>²Mathematical Studies, College of Computing, Informatics and Media, Universiti Teknologi MARA (UiTM) Cawangan Kedah, 08400 Merbok, Kedah.</i></p> <p>Abstract: The Autoregressive Fractionally Integrated Moving Average (ARFIMA) model is the best choice for the long-term memory data series. In this research, we review and evaluate the literature on ARFIMA models. ARFIMA research activity was examined using a bibliometric technique using a sample of 784 papers from the Scopus database that were published between the years 1993 and 2022. Moreover, we identified the primary research areas, categories of published documents, most significant platforms and sources of ARFIMA publications, widely cited studies, productive authors, author's institutions and countries, as well as evaluated the publication's citation pattern. The titles and keywords, including abstracts of the documents, are also included, as well as their terms and occurrences. Microsoft Excel was used for frequency analysis, Harzing's Publish or Perish for citation analysis and metrics, as well as VOS viewer for data visualisation. The results indicate that there is an increment in the publications' number. The network analysis and statistical analysis revealed that the year 2018 had the most papers issued.</p>
12	020-icasm	<p>Brain Evoked Potential of Emotional Arousal Processing in Young Malaysian Adults</p> <p>Yogendren Murugia and Nasir Yusoff*</p> <p><i>Department of Neurosciences, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, 16150 Kubang Kerian, Kota Bharu, Kelantan, Malaysia.</i></p> <p>Abstract: Psychological model suggests that the level of stimulation is positively correlated with the emotional arousal strength. This study aimed to examine the effect of visual stimuli with varying levels of arousal (by controlling the emotional valence domain) on the emotion process (amplitude and latency of the N200 and P300 ERP components) in young Malaysian adults. Participants aged between 18 to 24 years old (N=30) from Kota Bharu, Kelantan, Malaysia involved in this experimental observation study that was held in Neuroscience Laboratory, Health Campus, Universiti Sains Malaysia. An event-related potential (ERP) technique was used to record the emotional reaction while participants viewed a series of images with various levels of emotional arousal (with constant valence values). All images were taken from the Images International Affective Pictures Systems (IAPS). The 128 HydroCel Geodesic Sensor Net was applied on participants during the session to capture</p>

		<p>the brain potential of P300 and N200. Significant effect of emotional arousal was seen in central midline (Cz) of N200 latency ($p < 0.01$). However, no significant effect was seen in N200 and P300 amplitude (in all midline area) and latency (in frontal-Cz, parietal-Pz and occipital-Oz midline). Post hoc analysis of N200 latency in central midline indicated that the low arousal was perceived as significantly more aroused (shorter time was taken) than the moderate arousal ($p < 0.01$). Arousal strength exhibits unpredictable effect on brain potential mechanism. This interpretation should consider the variation of arousal optimization among individual that can be influenced by factors such as cultural experience.</p>
13	003-icma	<p>Mechanical Properties of Nano-Coating Materials Journal Bearing, Part-1</p> <p>Salloom A. Al-Juboori</p> <p><i>Engineering Faculty, Mutah University, ALKARK, JORDAN</i></p> <p>Abstract: Journal bearing is one of the most important part in rotating machinery, so improving the mechanical properties of its inner surface will reflect positively to its performance. Journal bearing failure commonly due to scratching, wiping, wear, corrosion and fatigue. Consequently, will cause high-energy consumption, short cyclic life, misalignment and over loading. In this work, crankshaft journal bearing for internal combustion engine was coated by using ANSYS software (R2 2020) and tested by modelling and simulation, using layers of stainless steel and titanium Nano-materials with different thicknesses (100, 400, 700, 900) μm. The operating conditions are at rotating speed of 6500 rpm, which can generate a pressure on inner surface bearing enough to withstand an external load of 3.15 kN, these conditions were studied and analyzed using lubricant SAE 10-40. The results have shown that a significant improvement in mechanical properties in comparison with uncoated case. In addition, the results have revealed that the titanium coated with 400 μm is better than stainless steel in improving mechanical properties, which showed an improvement in deformation about (16.126 %), in hardness (99.065%) and in strain (3.166%). Therefore, coating with Nano-titanium is very promising to improve journal-bearing performance.</p>
14	002-icbm	<p>Mapping the Landscape of Psychological Contract Literature: A Scopus-Based Bibliometric Analysis</p> <p>Hao Wu^{1*}, Anusuiya Subramaniam² and Syafiqah Rahamat³</p> <p><i>¹School of Graduate Studies, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia.</i></p> <p><i>²School of Business & Economics, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.</i></p> <p><i>³Department of Dietetics, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.</i></p> <p>Abstract: The employment relationship between employees and organizations has changed with the advent of the knowledge economy era in the 21st century and the transformation of economic models. Psychological contracts are significant in understanding the employment relationship between employees and organizations. More and more scholars began to focus on psychological contracts. Therefore, the systematic arrangement of psychological contract literature is meaningful. This study used bibliometrics to review 2,097 articles and conference papers from psychological contracts. The Scopus database is the source of literature collection in this study. This study used VOSviewer and</p>

	<p>Microsoft Excel for the bibliometric analysis of these documents. Firstly, this study summarized the temporal trends and primary sources of psychological contracts. This study found an exponential increase in publications and a Matthew effect in sources of psychological contracts. Secondly, eight major co-authorship groups were found and discussed the significant contributions made by these scholars to psychological contract theory. Thirdly, this study also analyzed the countries, affiliations, funding sponsors, and subject areas of the psychological contract. Finally, the hot topic of psychological contracts and suggested future research were discussed. This study systematically summarized the literature on the psychological contract and future research direction.</p>
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