

UNITING EXPERTISE,
SHAPING TOMORROW'S ENGINEERING

PROGRAMME BOOK & ABSTRACTS

4th September 2024

Palm Garden Hotel, Putrajaya, Malaysia

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**THE 5TH INTERNATIONAL CONFERENCE
ON INTEGRATED ENGINEERING AND
TECHNOLOGY 2024
(INTCET 2024)**

**PROGRAMME
&
ABSTRACTS**

**4TH SEPTEMBER 2024,
PALM GARDEN HOTEL, PUTRAJAYA, MALAYSIA**

WELCOME MESSAGE BY THE CHAIRMAN OF INTCET 2024



Dear participants,

It is indeed an honour and a great pleasure to welcome you to the 5th International Conference on Integrated Engineering & Technology (INTCET 2024). On behalf of the organizers and the committee members, I would like to express our utmost appreciation to the distinguished speakers and presenters who are willing to share your knowledge and experience in this conference.

The INTCET 2024 is held with the intention to provide a platform for interactions among academicians, researchers and industries in the area of engineering, science and technology. It is hoped that INTCET 2024 capable to facilitate interactions among participants and serve as a platform to gather and disseminate the latest knowledge in engineering, science and technology and open doors of opportunity for further collaborations among universities, research institution and industry.

I would like to take this opportunity also to convey my heartfelt gratitude and appreciation to those who had so generously provided assistances and supports whether in the form of sponsorship, consultations, manpower or so forth. Your contributions have benefited this event towards its successful implementation.

Finally, we wish you the very best and pleasant experience while spending your time here in Putrajaya.

Kind regards and wassalam.

ASSOC. PROF. DR. MOHD TAUFIK BIN JUSOH@TAJUDIN

SPEAKER PROFILE 1

PROF. DR. IR. ANDI ADRIANSYAH, M.ENG



He graduated from Universitas Indonesia in 1994 with BSc in Electrical Engineering. He obtained his MSc from Universiti Teknologi Malaysia in 1998. He pursues his PhD at Universiti Teknologi Malaysia again in 2003 and was conferred with the doctorate in 2007 in the field of Control Engineering. He served the Universitas Mercu Buana as a lecturer and researcher in the Engineering Faculty. Held various post including Head of Electrical Engineering Department, Deputy Dean of Faculty of Engineering, and Director of Quality Assurance. He is the editor-in-chief of SINERGI Journal. His current active researches include artificial intelligence (neural networks, fuzzy logic, genetic algorithm, and particle swarm optimization), intelligent control systems and mobile robotic. He is currently a Professor in Electrical Engineering, holding the post of Rektor in Universitas Mercu Buana since 2022.

SPEAKER PROFILE 2

PROF. DR. AIDY ALI



Aidy Ali is a Professor of mechanical Engineering at National Defence University of Malaysia (UPNM). He received his first degree in Mechanical Engineering from Universiti Putra Malaysia, 1999. He then pursued his Ph.D degree in Year 2003 research on Improving Fatigue Life of Aircraft Components By Using Surface Engineering at Sheffield University. He then appointed as lecturer at Universiti Putra Malaysia in 2006, rapidly promoted to Senior lecturer in 2008, rapidly promoted to Associate Professor in 2010, appointed as Professor in 2012, all within 6 years period of time. His expertise is related to mechanical Materials for Defense Applications, Fatigue, Fracture of materials, Failure assessment, Failure prevention analysis, Reliability engineering prediction and Crash analysis. Prof Aidy has Graduated 13 PhD Students, 38 Master Students, 32 Bachelor Supervision, written 19 Books and published 163 ISI Clarivate and Scopus, Impact Journals. Secured 26 Research Grants. H index 23 Scopus.

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Secretariat

Faculty of Engineering, Universiti Pertahanan Nasional Malaysia

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CONFERENCE SCHEDULE

4TH SEPTEMBER 2024

0730 – 0830 REGISTRATION

0830 – 0930 MORNING PARALLEL SESSION

1000 – 1200 OPENING CEREMONY

- a. Welcoming Speech by Chairman INTCET 2024
- b. Opening Ceremony by Lt Jen Datuk Mardzuki bin Muhammad
- c. Keynote Speaker: Prof. Dr. Ir. Andi Adriansyah, Universitas Mercu Buana
“A Comprehensive Approach to Modeling of Electric Vehicle Kinematics and Motor Control Systems”
- d. Keynote Speaker: Prof. Dr. Aidy bin Ali, Dean of Centre for Graduate Studies, UPNM
“Development and Strength Analysis of High Impact and Antiballistic of Malaysian Bamboo Hybrid Laminated Composites”

1230 – 1430 LUNCH BREAK

1430 – 1700 AFTERNOON PARALLEL SESSION

PARALLEL SESSION I

VENUE: RAFFLESIA A

Chairperson: Ir. Suriyadi Sojipto & Kapt. Assoc. Prof. Ir. Gs. Dr. Neza Bin Ismail (R)

Timekeeper: Ts. Dr. Nordila Ahmad & Assoc. Prof. Ts. Dr. Ng Choy Peng

SEQ	PAPER ID	DOMAIN	TITLE	AUTHOR
1	INTCET2024 C-201	CE	Comparative Analysis of Load-Resisting Mechanisms in Welded Beam-Column Connections of Double-Span Steel Beams: With and Without Consideration of Damage Plasticity and Element Deletion Models	Nor Idahyu Mohd Zaman
2	INTCET2024 C-202	CE	Evaluation of Recycled Steel Properties Originated from Construction Steel Waste	Mohamad Zarif Mirza Alias
3	INTCET2024 C-203	CE	Experimental investigation of the Moment Bolted Coupler (MBT) with steel on the bond strength under different monotonic pull-out tests	Mohamad Amir Mohamad Nor
4	INTCET2024 C-204	CE	Evaluation of Moment Resisting Steel Frame Structure Resistance to Progressive Collapse Using Quantitative Algorithms and Force-Based Approaches	Nur Ezzaryn Asnawi Subki
5	INTCET2024 C-107	CE	Dynamic of sediment transport capacity by overland flow: A Review	Siti Norhafizah Hamizak
6	INTCET2024 C-113	CE	Mineralogy Analysis of Plutonic and Volcanic Rock at Selected Slope Sections of Kuala Lumpur-Karak Highway	Nurul Afiffah Khairulzaman
7	INTCET2024 C-102	CE	Seismic Response of Tunnels Under Effect of Overburden Depth Using Simplified Pseudo-Static Analysis	Faizzuan Fazully
8	INTCET2024 C-111	CE	Historical Flood Events in Malaysia 1970-2024	Ts. Dr. Nordila Ahmad
9	INTCET2024 C-106	CE	Accuracy Assessment of 3D Point Cloud Data for Elevated Structures Using TLS at Various Distances	Wan Mohamed Syafuan Wan Mohamed Sabri

10	INTCET2024 C-104	CE	The impact of foundation scour on the behaviour of a bridge pier	Nurul Shafrina Atika Saiful Nizam
11	INTCET2024 C-114	CE	Comparative Study of Pseudo-Static Finite Element Analysis and Closed-form Solutions of Circular Tunnels Embedded in Soft Soil and Rock	Nursyafikah Hafizi
12	INTCET2024 C-109	CE	Performance of Bamboo Reinforced Interlocking Soil-Cement Hollow Block Wall Under In-Plane Loading	Ts Ir. Dr. Siti Khadijah Che Osmi
13	INTCET2024 C-108	CE	Mechanical Properties of Masonry Brick Using Pineapple Fibre	Prof. Ir. Dr. Mohammed Alias Yusof
14	INTCET2024 C-115	CE	Mitigation of Delay in Malaysian Armed Forces Construction Projects	Lt. Col. Ir. Dr. Vikneswaran A/L Munikanan (R)
15	INTCET2024 C-110	CE	Analysis and Simulation of Evacuation Routes During Disaster Situations: A Case Study in Kuala Lumpur City (KLC)	Assoc. Prof. Ts. Dr. Ng Choy Peng
16	INTCET2024 C-112	CE	Experimental study on slope runoff and sediment concentration on different underlying surface	Dr. Zuliziana Suif
17	INTCET2024 C-118	CE	Analysis of the Response of a Roadway Bridge Under Hydrodynamic Effects and Local Scour	Syuriya Binti Mohamad
18	INTCET2024 C-116	CE	Effect of Bamboo Fibers in Hydrated Lime - Treated Residual Soil on Permeability Characteristic	Dr. Mohd Nazrin Mohd Daud
19	INTCET2024 C-117	CE	Spatio-Temporal Patterns of Soil Erosion and Sediment Yield in UPNM Catchment	Dr. Zuliziana Suif
20	INTCET2024 C-120	CE	Instrumented Model Slope to Investigate the Influence of Rainfall Intensity on Negative Pore Pressure of Silty Sand Soil	Aina Syahirah Ahmad Ishak
21	INTCET2024 C-119	CE	Experimental Study of Rainfall Intensity on Silty Sand Slope	Ts. Dr. Jestin Jelani
22	INTCET2024 C-103	CE	Numerical simulation of steel plate subjected to explosion	Ir. Suriyadi Sojipto

23	INTCET2024 C-101	CE	Experimental Investigation on the Parameters Influencing Local Scour Types around Scaled Triangular Nose Bridge Pier in Nonuniform Mobile Bed	Ts. Dr. Nordila Ahmad
24	INTCET2024 C-105	CE	Mapping Disaster Hazards and Risks – A Case Study in Kuala Lumpur City (KLC)	Assoc. Prof. Ts. Dr. Ng Choy Peng

CE – Civil & Environmental Engineering.

PARALLEL SESSION II

VENUE: RAFFLESIA B

Chairperson: Dr. Norazrina Binti Mat Jali and Prof. Madya Dr. Khisbullah Hudha

Timekeeper: Prof Madya Dr. Raja Nor Izawati Binti Raja Othman and Dr. Noor Hafizah binti Amer

SEQ	PAPER ID	DOMAIN	TITLE	AUTHOR
1	INTCET2024 M-107	ME	Effect of Nano Composite Boron Carbide on the Mechanical and Corrosion Behaviour of Aluminium Matrix Composite	En Zaifol Samsu
2	INTCET2024 E-116	ME	Reduced Graphene Oxide-ZnO Hollow Microsphere Composite for Supercapacitor Applications	En. Albaqari Luthfi Albert Bin Abdullah
3	INTCET2024 M-102	ME	Effect of Multiple Orifices of Wave Energy Converter Air Columns Towards Overall Turbine Output	Prof. Madya Ir. Ts. Dr. Mohd Rashdan bin Saad
4	INTCET2024 E-117	ME	Sc203 PVA Film for Q-Switching and Application in Erbium-Doped Fiber Laser Cavity	Dr. Latifah Sarah binti Supian
5	INTCET2024 M-111	ME	Enhanced dielectric properties of PMMA polymer matrix using conductive filler CB, CNT and AgNPs	Puan Noor Amieza Binti Mohamad@Ibrahim
6	INTCET2024 M-104	ME	Mechanical Properties of Hybrid Silica epoxy of Nano and Micro Silica: The effects of particle size and weight percentage	Kapten Dinesh Kumar A/L Subramaniam
7	INTCET2024 M-101	ME	Dynamic Modelling and Validation of Tracked Vehicle with In-Track Motor	Dr. Noor Hafizah binti Amer
8	INTCET2024 E-118	ME	Development of Strained Measurement System fro Detecting Rubber Elasticity for Structural Health Monitoring Application	Dr. Elya Binti Mohd Nor
9	INTCET2024 M-106	ME	Verification of a 3-Degree-of-freedom Bus Handling	Dr. Zulkiffli bin Abd. Kadir

			Model Due to Steering Wheel Input	
10	INTCET2024 M-112	ME	Path Navigation in Designated Environment Using Half-Sweep Modified TOR	Dr. A'qilah Ahmad Dahalan
11	INTCET2024 M-108	ME	Enhancement of Mechanical and Dielectric Properties of PVC Composites with the Addition of Flame Retardant via Electron Beam Radiation	Dr. Norazrina Binti Mat Jali
12	INTCET2024 M-110	ME	Evaluating the Aerodynamic Performance of High Aspect Ratio Wings using Two-Way Fluid-Structure Interaction Analysis	Cik Ainaa Nabilah Mohd Nazri
13	INTCET2024 M-103	ME	Design and Fabrication of an Automatic Cloth Ironing Machine	Puan Nur Akmal Haniffah
14	INTCET2024 M-105	ME	The Effects of CTBN on Mechanical and Viscoelastic Viscosity Properties of Epoxy-Silica Composites	Assoc. Prof. Dr. Raja Nor Izawati Binti Raja Othman
15	INTCET2024 M-109	ME	Mechanical Properties of Recycled High-Density Polyethylene (rHDPE) with Bamboo Fiber Composite	Dr. Norazrina Mat Jali
16	INTCET2024 M-113	ME	Effect of Radome Modification on Aerodynamic Performance of Aircraft Fuselage	Lt. Cdr. Dr. Norzaima Nordin TLDM (R)

ME – Mechanical & Material Engineering.

PARALLEL SESSION III

VENUE: RAFFLESIA C

Chairperson: Dr. Latifah Sarah Supian, Dr. Elya Mohd Nor & Cik Nazatul Shima Moh Nazar
Timekeeper: Dr. Noor Fadzilah Mohamed Sharif, Dr. Siti Noormiza Makhtar & Dr. Nor Laili Ismail

TIME	PAPER ID	DOMAIN	TITLE	AUTHOR
1	INTCET2024 E-101	EE	Improving the Efficiency of Thermoelectric Generator using Perturb and Observe MPPT Algorithm	Nurul Izzah Izzati Zaihan
2	INTCET2024 E-102	EE	A Modelling of 500 Kv Long Transmission Line and Fault Detection Using Matlab Simulink	Khairun Neesya Mohamed Shafiee
3	INTCET2024 E-104	EE	Detection of Benzoic Acid Using Tapered Surface Plasmon Resonance Polymer Fiber	Dr. Chew Sue Ping
4	INTCET2024 E-105	EE	Simulation of Electric Field Distribution in XLPE Cable Containing Alumina Nanoparticles	Muhammad Akmal Marican Abu Bakar Marican
5	INTCET2024 E-109	EE	Faulty Classification System for VTOL UAV Acoustic Signal using Machine Learning	Fareisya Zulaikha
6	INTCET2024 E-113	EE	Response Surface Modelling of Titania Photoanode Dye Sensitized Solar Cell (DSSC) Using Central Composite Design	Nur Fatin Izzati Tajudin
7	INTCET2024 E-119	EE	Flexural Behavior of The Fibrous Cementitious Composites (Fcc) Containing Hybrid Fibres	Nurul Amiera Mohd Baseri
8	INTCET2024 E-120	EE	Assessment of Soil-Embedded Tapered POF Sensor for Geotechnical Monitoring	Nur Masyitah Muhmin
9	INTCET2024 E-121	EE	Study on Modeling of a Solar Electric Boat Power System Using Matlab/Simulink	Harikrishnan Baalakrisnan Lekshmikanth
10	INTCET2024 E-106	EE	An analysis of effect and consequence associated with stress among technical	Ir. Ts. Dr. Sazwan Syafiq Mazlan

			vocational teachers in Malaysia using artificial intelligence (AI) machine learning	
11	INTCET2024 E-112	EE	Optimizing Generation Cost for the Non-Convex Economic Dispatch Problem Using Barnacles Mating Optimization Algorithm	Dr. Nor Laili binti Ismail
12	INTCET2024 E-110	EE	Performance Comparison of Booth-Wallace Tree and Vedic Multiplier Designs	Dr. Anis Shahida Niza Mokhtar
13	INTCET2024 E-100	EE	Activation Function based MLP Network for Shape Aggregate Classification	Encik Nazrul Fariq Makmor
14	INTCET2024 E-103	EE	Synthesis of Hybrid CNT Nanocomposite for Skin Sensor	Dr. Nurul Sheeda Suhaimi
15	INTCET2024 E-114	EE	Electrical Properties of Palm oil (PO) Under Magnetic Field Applied and Different Concentration Doping of Semiconductor Particles in Transformer Application	Assoc. Prof. Dr. Muhamad Faiz Md Din
16	INTCET2024 E-108	EE	Logsig Activation Function based MLP Network for Aggregate Classification	Encik Mohd Salman Mohd Sabri
17	INTCET2024 E-111	EE	Training Algorithm based MLP Network for Shape Aggregate Classification	Encik Ja'afar Adnan
18	INTCET2024 E-115	EE	Bayesian Regularization Training Algorithm based MLP for Aggregate Classification	Assoc. Prof. Dr. Fakroul Ridzuan Hashim
19	INTCET2024 E-107	EE	Energy Scavenging from Wastewater Management using Electromagnetic Induction and Piezo	Assoc. Prof. Dr. Siti Nooraya Mohd Tawil

EE – Electric, Electronic & Computer Engineering.

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ABOUT US

The 5th International Conference on Integrated Engineering and Technology (IntCET 2024) is a premier event that brings together scholars, researchers, and professionals from various engineering disciplines to exchange knowledge, share innovative ideas, and collaborate on cutting-edge technologies.