

IIUM Engineering Congress 2018



International Islamic University Malaysia

Programme Book



ICMAAE'18

4th International Conference on
Mechanical, Automotive, and Aerospace Engineering
2018



Organized by:
Department of
Mechanical,
Kulliyyah of Engineering



**International Islamic University
Malaysia**



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FOREWORD FROM THE 4th ICMAAE'18 CHAIRMAN



PROF. DR. MOHIUDDIN
Chairman

International Conference on Mechanical, Automotive and Aerospace Engineering 2018

Assalamu 'alaikum Warahmatullahi Wabarakatuh,

All praise to ALLAH SWT. It is my pleasure to extend a warm welcome to all delegates attending the 4th International Conference on Mechanical, Automotive and Aerospace Engineering (ICMAAE'18) at the International Islamic University Malaysia in Kuala Lumpur. The conference organizers have put together excellent scientific programs that encompass both the latest research in mechanical engineering and provide an opportunity to renew old friendships and make new acquaintances.

Mechanical, Automotive and Aerospace engineering form the backbone of much of the industrialised world and play a vital part in steering the national goal of self-reliance and marching forward towards competitiveness in all areas of science and technology. It is hoped that the conference would provide a unique opportunity for academics, engineers and postgraduate students to meet, present and discuss the latest research developments, challenges and trends in mechanical, automotive and aerospace engineering.

The success of ICMAAE'18 depends completely on the effort, talent, and energy of researchers in the field of Mechanical, Automotive and Aerospace engineering who have submitted papers on a variety of topics. We are indeed glad at the favourable response received from the scientific community around the world. I would like to extend my thanks to the members of the organizing committee for their hard work in organising this excellent event. My thanks go to all the sponsors and all participants in making this conference a success.

I would like to take this opportunity to express my sincere gratitude and appreciation to all the reviewers who have helped in maintaining the high standard of the conference. It really gives me great pleasure to offer sincere thanks for your participation in ICMAAE'18. We hope that you will enjoy staying in Kuala Lumpur and take the advantage to see many beautiful sights in the city. We highly appreciate your presence and wish you every success in your research undertakings and look forward to seeing you at ICMAAE 2020.

Wassalam.

PROF. DR. AKM MOHIUDDIN



ORGANIZING COMMITTEE

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Co-Chairman

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Prof. Dr. Waqar Asrar

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Dr. Norfazrina Mohd Yatim

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Prof. Dr. Sher Afghan Khan

Dr. Moumen Mohammed Idres

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Dr. Muhammad Saifuddin Mohd Rehan

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Dr. Norfazrina Mohd Yatim – Co-Chair

Zamilah Abd Aziz

Publication in Proceedings/Journals

Dr. Erwin Sulaeman –Chair

Prof. Dr. Waleed Fekry Faris

Dr. Muhammad Hanafi Azami

Dr. Tengku Nordayana Akma Tuan Kamaruddin

Dr. Alia Farhana Abdul Ghaffar

Dr. Amelda Dianne Andan

Keynote/Invited Speakers

Dr. Muhammad Saifuddin Mohd Rehan – Chairman

Dr. Mohd. Azan Mohammed Sapardi – Co-chairman

ORGANIZING COMMITTEE

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Dr Dzun Noraini Jimat

Assoc. Prof. Dr. Mohamed Elwathig Saeed Mirghani

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Programme Book

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Dr. Mohamed Okasha

Dr. Sultan Ibrahim

Dr. Amelda Dianne Andan

Registration

Dr. Jaffar Syed Mohamed Ali – Chair

Dr. Zahir Hanouf – Co-Chair

Mohammad Azizudeen

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Nooryani Haji Ali

Hospitality, and Transportation

Dr. Sanisah Saharin - Chair

Dr. Muhammad Saifuddin Mohd Rehan

Firdauz Hakem

Nor Hafez Adnan

M Farid

Advisory board Local and International

Prof. Dr. Meftah Hrairi – Chairman

Prof. Dr. Yulfian Aminanda

Prof. Dr. Sher Afghan Khan

Dr. Hilmi Hela Ladin

Dr. Razi Nalim (IUPUI, USA)

CONFERENCE TOPICS

Mechanical Engineering

Energy
MEMS and Nanotechnology
Experimental Techniques and Measurements
Modeling and Simulation
Dynamics and Controls
Structures
Thermo-fluids

Automotive Engineering

Engine and its Systems
Combustion and Emission control
Vehicle Structures and Crashworthiness
Power train
Vehicle Dynamics and Control
Automotive Industry
Alternative Power Systems and Management
Vehicle Aerodynamics
Experimental Methods and Measurements
Noise Vibration & Harshness

Aerospace Engineering

Aerodynamics and Aeroelasticity
Aerospace Dynamics and Controls
Aerospace Propulsion
Aerospace Structures
Aerospace Design, Testing, and Performance
Aerospace Industry
Experimental Methods and Measurements
UAV
Flight Systems
Aerospace Manufacturing
Aerospace Industry and Support Services
Aerospace Maintenance

REVIEWERS

AKM Mohiuddin
Meftah Hrairi
Sher Afghan Khan
Mohammed Aatur Rahman
Waqar Asrar
Waleed Fekry Faris
Sany Izan Ihsan
Erwin Sulaeman
Jaffar Syed Mohammed Ali
Fadly Jashi Darsivan
Mohd Sultan Ibrahim
Sanisah Saharin
Hilmi Hela Ladin
Hanan Mokhtar
Norfazrina Mohd Yatim
Muhammad Saifuddin Mohd Rehan
Syed Noh Syed Abu Bakar
Muhammad Hanafi Azami
Tengku Nordayana Akma Tuan Kamaruddin
Alia Farhana Abdul Ghaffar
Mohd. Azan Mohammed Sapardi
Amelda Dianne Andan

CONFERENCE KEYNOTE SPEAKER



PHILIPPE OLIVIER

Professor
University of Toulouse

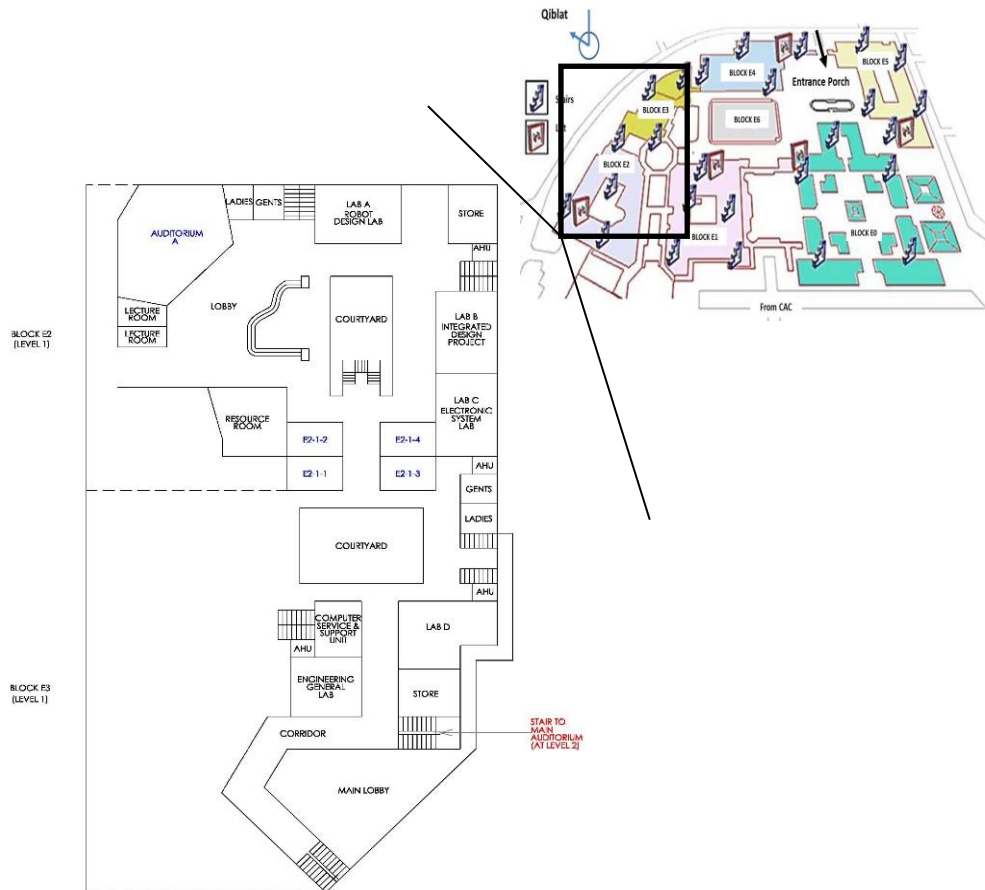
Professor Philippe OLIVIER obtained his Ph.D. in Mechanical Engineering from University Paul Sabatier Toulouse 3 in 1994 working on process-induced stresses in high performances composite materials. From 1994 to 2007 He worked as an associate professor in mechanical engineering at university Toulouse 2 and gave courses upon mechanical design, materials science, strength of materials and non-destructive testing. He received the Daniel Valentin prize in 1998 from AMAC (AMAC: French Scientific Society for Composite Materials) for his work on composite manufacturing processes. He served as a member of AMAC administration board since 1999 (he is currently AMAC vice-president). Philippe OLIVIER became full professor at University Paul Sabatier Toulouse 3 in 2008. He has been the leader of the composite materials and structure research group of Institut Clement Ader (UMR CNRS 5312 – a research institute on mechanical engineering) from 2010 to 2013. Philippe OLIVIER also served as a member of the ESCM executive committee (European Society for Composite Materials) from 2010 to 2018. Since 2013 Professor Philippe OLIVIER is director of Institut Clement Ader (90 researchers, 110 Ph.D. students and 40 engineers, administrative and technicians). He is still given some courses on composite manufacturing (at University of Toulouse and Pau), on strength of materials and finite elements and on non-destructive testing.

FLYING BLUER: COMPOSITE MATERIALS FOR AIRFRAME STRUCTURES

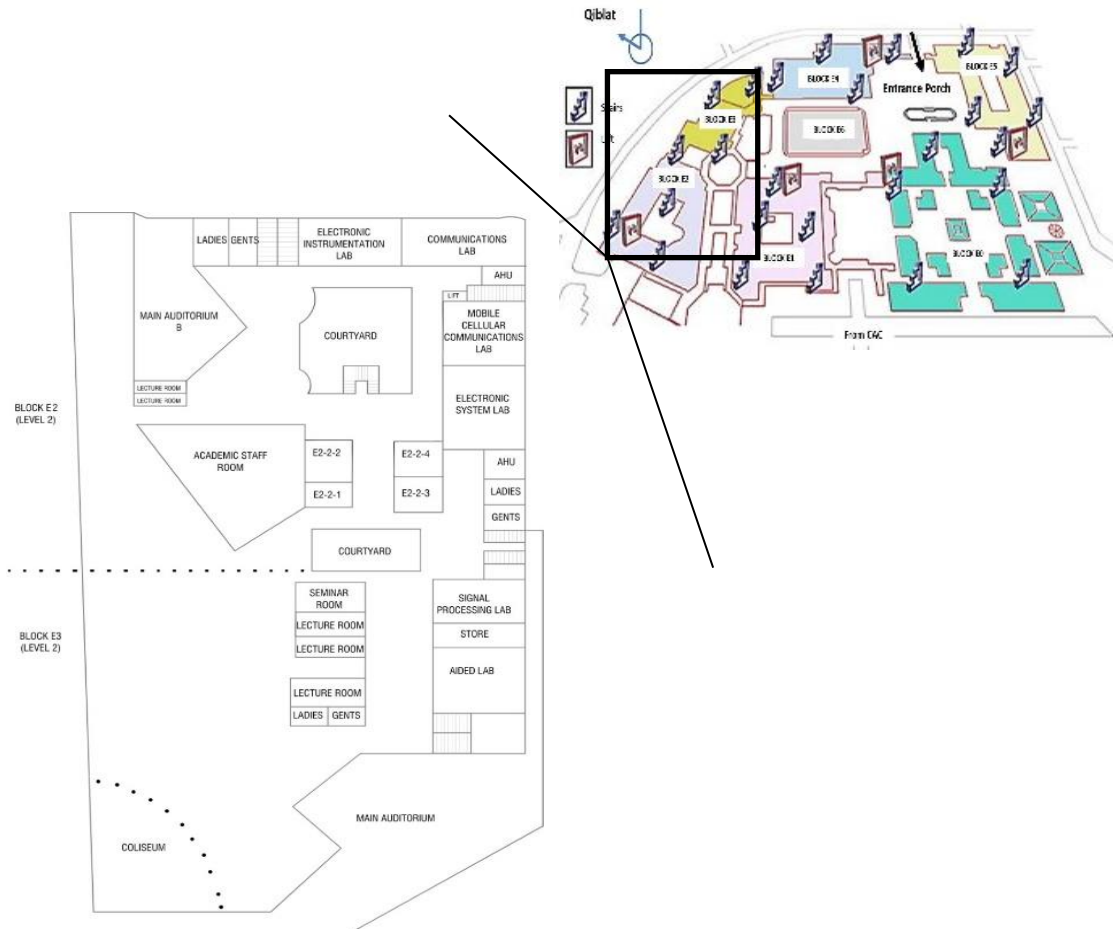
Composite materials (matrix reinforced with fibres) have been used in aerospace construction for several years. Currently a large variety of composite materials are used in aircrafts. These materials are playing more or less important roles in airplanes integrity. Composite materials for primary structures represent 53% of the whole mass of the recent Airbus 350-900 (take-off max. weight 268 tons) enabling important weight savings synonymous of reductions in of fuel consumption and polluting emissions. In the A350 aircraft high performance composite materials are used for manufacturing fuselage panels frames and ribs, central wing box, keel beam, wings, flaps, ailerons, spoilers, belly and engines fairings, horizontal and vertical stabilizers. Within the whole industrial process giving birth to composite material structural parts, the manufacturing steps are among the most critical ones. Effectively it is during theses steps that the part gets its shape, dimensions and stiffness. At Clément Ader Research Institute, one part of our investigations is focussed upon high performances composite manufacturing issues. This keynote lecture will provide the audience with the ways our researchers are trying to solve these manufacturing issues.

ICMAAE'18 VENUE

**KULLIYAH OF ENGINEERING – INTERNATIONAL
ISLAMIC UNIVERSITY MALAYSIA
(LAYOUT PLAN MEETING AND EVENTS)**



ICMAAE'18 VENUE



DAY 1, WEDNESDAY, 19 SEPTEMBER 2018	
REGISTRATION: 8.00 – 8.30	
OPENING CEREMONY: 9.00 – 10.00	
COFFEE BREAK & NETWORKING 10.00-11.00	
<p>Keynote: 11.30 -12.30 Speaker: Prof. Philippe Olivier Venue: Audi B Title: Flying bluer - Composite Materials for Airframe Structures Chairperson: Prof. Dr. AKM Mohiuddin & Assoc. Prof. Dr. Sany Ihsan</p>	

Parallel Technical Sessions 1, Wednesday, 19 September 2018: 2.00 – 3.30			
M1A: AEROSPACE ENGINEERING			
Chairperson: Prof. Dr. Meftah Hralri Co-Chairperson: Dr. Alia Farhana Abdul Ghaffar			Venue: E2-2-3, Block E2
2.00 – 2.15	2.15 – 2.30	2.30 – 2.45	2.45 - 3.00
ID 165: Aerodynamics Investigation Of Delta Wing At Low Reynold Number <i>Ilya Bashiera Hamizi, Sher Afghan Khan</i>	ID 166: Aerodynamics Of A Circular Planform Wing <i>Suliman M.M Ali, Ashraf A. Omar, Waleed Fekry Faris, Ahmad Faris ibn Ismail, Jaffar Syed Mohd Ali</i>	ID 178: Numerical Investigation Of Mach 1.73 Jet Characteristics In Two-Dimensions Using Turbulence Modeling Techniques <i>Humrutha G., Mrinal Kaushik, Sher Afghan Khan</i>	ID 250: Numerical and Experimental Study on the Effect of Cab-Extender on the Flow Characteristics of a Tractor-Trailer <i>J. S. Mohamed Ali, Ashraf Ali Omer, M. F. Diuzzaman bin Nasikin</i>
3.00 – 3.15	3.15 – 3.30		
ID 266: Numerical Investigation of Critical Range for the Occurrence of Secondary Peaks in the Nusselt Distribution Curve <i>Siddique M. Umair, Abdul Rehmen A. Al-Robaian, S. A. Khan, Marthande G. K., Patil Rajesh</i>	ID 270: Grooved Cavity as a Passive Controller Behind Backward Facing Step <i>S. A. Khan, Abdulrahman A. Al-Robaian, Mohammed a Asadullah, Abdul K Mohsin</i>		

Parallel Technical Sessions 1, Wednesday, 19 September 2018: 2.00 – 3.30			
M1B: AEROSPACE ENGINEERING			
Chairperson: Prof. Dr. Waqar Asrar Co-Chairperson: Dr. Mohd Azan Mohammed Sapardi			Venue: E2-2-4, Block E2
2.00 – 2.15	2.15 – 2.30	2.30 – 2.45	2.45 – 3.00
ID 190: Modelling The Performance And Emission Prediction Of Rb211 Aero-Gas Turbine Engine Fuelled By Jatropha-Based Biofuel <i>Muhammad Hanafi Azami, Zahid Noorazman, Mark Savill, Yi Guang Li, Mohd Radzi Hilmi</i>	ID 191: Modelling The Performance Of Aero-Gas Turbine Engine Using Algae-Based Biofuel With Emission Prediction <i>Muhammad Hanafi Azami, Muhammad Zaki, Mark Savill, Yi Guang Li</i>	ID 242: Developing Nutation Damper System For A Microsatellite <i>Ari Legowo, Erwin Sulaeman, Danial Rosli</i>	ID 244: Discrete Tonal Noise Of Naca0015 Airfoil At Low Reynolds Number <i>Amelda Dianne Andan, Duck-Joo Lee</i>
3.00 – 3.15	3.15 – 3.30		
ID 247: Evaluation of LQR, 1 DOF LQG and 2 DOF LQG on Quadrotor Platform Based on Tracking Performance and Control Efforts <i>M. Islam, M. Okasha, A. Legowo, S. Fatai, E. Sulaeman</i>	ID 268: Performance and Emission Trade Off Assessment for Aero-Gas Turbine Engine <i>Muhammad Hanafi Azami, Mark Savill</i>		

Parallel Technical Sessions 1, Wednesday, 19 September 2018: 2.00 – 3.30			
M1C: AUTOMOTIVE ENGINEERING			
Chairperson: Assoc. Prof. Dr. Moumen Mohammed Idres Co-Chairperson: Dr. Nabilah Ramli			Venue: E3-2-1, Block E3
2.00 – 2.15	2.15 – 2.30	2.30 – 2.45	2.45 – 3.00
ID 144: Study Of Ride And Handling Of Ground Vehicle <i>Farah Zulyana Rusli, Fadly Jashi Darsivan</i>	ID 173: Study On The Electromagnetic 2-Speed Seamless Gearbox For EV <i>Ataur Rahman, Hasan MD. Nurul</i>	ID 177: Malaysian Automobile Industry And Green Supply Chain Management <i>Rafia Afroz, Md Ataur Rahman, Md Muhibullah</i>	ID 179: Structural Capacitor Technology For EV <i>Kyaw Myo Aung, Md Ataur Rahman</i>
3.00 – 3.15	3.15 – 3.30		
ID 200: Computational Validation Of Magnetorheological Elastomer For Engine Mount Application <i>Ismail Ladipo. Fadly Jashi Darsivan, Waleed Fekry Faris</i>	ID 214: Study On Intelligent Control System Of EMA-CVT <i>Abdul Hassan Jaafar, Ataur Rahman</i>		

Parallel Technical Sessions 2, Wednesday, 19 September 2018: 4.00 - 5.30			
M2A: AUTOMOTIVE ENGINEERING			
Chairperson: Dr. Jaffar Syed Mohamed Ali Co-Chairperson: Dr. Fadly Jahshi Darsivan			Venue: E2-2-3, Block E2
4.00 - 4.15	4.15 - 4.30	4.30 - 4.45	4.45 - 5.00
ID 199: Study Of ZnO/SiO₂ Semiconductor Thermoelectric Generator Technology For IC Engine <i>Yusuf Abdi Abubakar Hassan</i>	ID 202: Optimization Of Driving Mode Switching Strategy For A Multimode Plug-In Hybrid Electric Vehicle <i>Moumen Mohammed Idres, Mohamed Okasha</i>	ID 212: Consideration Of Dwelling Time On Diesel Split Injection Strategy For Combustion Process <i>Frengi Mohamad Felayati, Semin Semin, Muhammad Badrus zaman</i>	ID 221: Stateflow Control Mechanism in the Battery State Controller System for the Electric Motorcycle Application <i>Rabiatuladawiyah Abu Hanifah</i>
5.00 - 5.15	5.00 - 5.30		
ID 224: Design And Development Of A Retrofit Electric Motorbike <i>Z. Zainol, S. F. Toha, W. M. S. W. Bukhari</i>	ID 234: Composite Coated Duplex Stainless Steel For Automotive Tribo-Component Applications <i>Md. Abdul Maleque, Fairuz Shafira</i>		

Parallel Technical Sessions 2, Wednesday, 19 September 2018: 4.00 - 5.30			
M2B: MECHANICAL ENGINEERING			
Chairperson: Prof. Dr. Sher Afghan Khan Co-Chairperson: Dr. Sanisah Saharin		Venue: E2-2-4, Block E2	
4.00 – 4.15	4.15 – 4.30	4.30 – 4.45	4.45 – 5.00
ID 149: Evaluation Of Air Flow Pattern For Conceptual Design Of Automotive Painting Line Using Computational Fluid Dynamic (CFD) For Better Dust Particle Reduction <i>Muhammad Hafizan Yosri, Pauziah Binti Muhammad, Norfazrina Hayati Binti Mohd Yatim</i>	ID 153: Hexapod Robot For Autonomous Machining <i>Murshiduzzaman, Tanveer Saleh, Md. Raisuddin Khan</i>	ID 155: The Whirling Frequency Of High-Speed Shaft With Torsional Effect <i>Siti Amni Husna Roslan, Abdul Malek Abdul Wahab, Zainudin A. Rashid, Amiduddin Abu, Noor Fawazi Mohd Noor Rudin, Fitri Yakub</i>	ID 156: Prototype Of Single Degree Of Freedom Optical Resolver <i>Saiful Islam, Tanveer Saleh, Marsad Latief, M. R. M. Asyraf, Asan GA Muthalif</i>
5.00 – 5.15	5.15 – 5.30		
ID 168: Flexural Behavior Of Open-Cell Aluminum Foam Sandwich Under Three Point Bending <i>Muataz Hazza F. Al Hazza, Nur Asmawiyah Binti Ibrahim, Erry Y. T. Adesta, Nor Amalina Endut</i>	ID 171: Numerical Analysis Of Aluminum Foam Sandwich Subjected To Compression Loading <i>Muataz Hazza F. Al Hazza, Nor Amalina Endut, Erry Y. T. Adesta, Nur Asmawiyah Binti Ibrahim</i>		

Parallel Technical Sessions 2, Wednesday, 19 September 2018: 4.00 - 5.30			
M2C: MECHANICAL ENGINEERING			
Chairperson: Prof. Dr. Mohammed Ataur Rahman Co-Chairperson: Dr. Hanan Mokhtar			Venue: E3-2-1, Block E3
4.00 – 4.15	4.15 – 4.30	4.30 – 4.45	4.45 - 5.00
ID 150: Effect Of Solvent Media On The Concentration Yield Of Liquid Phase Exfoliated Graphene <i>A. Arifutzzaman, A. F. Ismail, I. I. Yaacob, M. Z. Alam, A. A. Khan</i>	ID 151: Stability Investigation Of Water Based Exfoliated Graphene Nanofluids <i>A. Arifutzzaman, A. F. Ismail, I. I. Yaacob, M. Z. Alam, A. A. Khan</i>	ID 152: Experimental Correlation For Flow-Boiling Heat Transfer In A Micro-Gap Evaporator With Internal Micro-Fins <i>Shugata Ahmed, Ahmad Faris Ismail, Erwin Sulaeman, Muhammad Hasibul Hasan</i>	ID 158: Thermal Performance Of Mini-Channel Heat Sink: The Effect Of Fins <i>Suliman Mohamed Mohamed Ali, Waleed Fekry Faris, Ahmad Faris Ismail</i>
5.00 – 5.15	5.15 – 5.30		
ID 162: Cooling Using Mini-Channel Heat Sinks: Effect Of Embossed Vortex Generators <i>Suliman Mohamed Mohamed Ali, Waleed Fekry Faris, Ahmad Faris Ismail</i>	ID 167: Numerical Investigation Of Heat Transfer Improvement Of Embossed Fin Macro-Channel Heat Sink <i>Suliman Mohamed Mohamed Ali, Waleed Fekry Faris, Ahmad Faris Ismail</i>		

DAY 2, THURSDAY, 20 SEPTEMBER 2018

Parallel Technical Sessions 3, Thursday, 20 September 2018: 9.00-10.30			
M3A: MECHANICAL ENGINEERING			
Chairperson: Dr. Zahir Hanouf Co-Chairperson: Dr. Mohamed El Sayed Aly Abd El Aziz Okasha			Venue: E2-2-1, Block E2
9.00 – 9.15	9.15 – 9.30	9.30 – 9.45	9.45 – 10.00
ID 164: Experimental Investigation Of Straight Shape Thermosyphon Filled With R410A Refrigerant <i>Rajeandran Revichandran, AKM Mohiuddin</i>	ID 172: Battery Characterization For Hybrid Car <i>Wan Tarmizi Wan Isa, Sanisah Saharin, Wan Wardatul Amani Wan Salim</i>	ID 175: Performance Analysis Of A Smaller Capacity Horizontal Axis Wind Turbine Using QBlade <i>Ali Said, Mazharul Islam, Mohiuddin A.K.M, Moumen Mohammed Idres</i>	ID 184: Influence Of Internal Fill Pattern, Polishing Time And Z Axis Orientation On Tensile Strength Of 3D Printed Part <i>Dicky Seprianto, Iskandar, Romi Wiza, Erry Y. T. Adesta</i>
10.00 – 10.15	10.15 – 10.30		
ID 185: Optimization Of Parameters In Three-Dimensional Printing Objects With FDM Technology Against Geometry Accuracy <i>Romi Wilza, Iskandar, Dicky Seprianto, Erry Y. T. Adesta</i>	ID 215: Two-Phase Thermosyphon Filled With R410A Refrigerant Operating At Low Evaporator Temperature <i>Rajeandran Revichandran, AKM Mohiuddin</i>		

Parallel Technical Sessions 3, Thursday, 20 September 2018: 9.00-10.30			
M3B: MECHANICAL ENGINEERING			
Chairperson: Dr. Hilmi Hela Ladin Co-Chairperson: Dr. Hanan Mokhtar		Venue: E2-2-2, Block E2	
9.00 – 9.15	9.15 – 9.30	9.30 – 9.45	9.45 – 10.00
ID 194: Review Of Manufacturing Process For Good Quality Of Composite Assessment <i>Il Zulkepli, H Mokhtar, Y Aminanda, M S I Shaik Dawood, M S M. Rehan</i>	ID 204: Experimental Work And Finite Element Analysis On Kenaf-Banana Hybrid Composites <i>M.I. Ayob, A. Zuraida, M. Tajuddin</i>	ID 205: Effect Of Poly(Vinyl Alcohol) Addition On The Properties Of Calcium Phosphate Cement Prepared At The Powder-To-Liquid Ratio Of 1.5 <i>Muhammad Azrulriezam, Iis Sopyan, Ramesh Singh</i>	ID 217: Experimental Testing Of Oil Palm Fibre Composite Manufactured Via Vacuum Bagging Method <i>N S Binti Mohd Hafidz, M S Bin Mohamed Rehan</i>
10.00 – 10.15	10.15 – 10.30		
ID 220: Adopting Dynamic Transient Response Analysis For Sensors Positioning To Monitor Cable Stayed Bridge <i>Mohammed Idris Mohammed, Erwin Sulaeman, Faizal Mustapha</i>	ID 233: Convergence And Error Analysis Of A Bi-Quadratic Triangular Galerkin Finite Element Model For Heat Conduction Simulation <i>Erwin Sulaeman, S. M. Afzal Hoq, Abdurahim Okhunov, Irfan Hilmy, Marwan Badran</i>		

Parallel Technical Sessions 3, Thursday, 20 September 2018: 9.00-10.30			
M3C: MECHANICAL ENGINEERING			
Chairperson: Dr. Nabilah Ramli Co-Chairperson: Dr. Mohd Azan Mohammed Sapardi			Venue: E2-1-4, Block E2
9.00 – 9.15	9.15 – 9.30	9.30 – 9.45	9.45 – 10.00
ID 223: Two-Wheel Balancing Robot; Review On Control Methods And Experiment <i>M. R. M. Romlay, M. I. Azhar, S. F. Toha</i>	ID 227: Carbon Diffusion In 304L Austenitic Stainless Steel At 650-750 OC In Carburizing Environment <i>F. I. Haider, Suryanto, M. H. Mahmood</i>	ID 228: Improvement Of Thermal Conductivity By Anodized Copper Coating <i>M. H. Mahmood, Suryanto, F. I. Haider</i>	ID 246: Design And Development Of Automatic Inner Mirror Endurance Test System <i>A. M. Yaakob, S. F. Toha, M. A. A. Kadir, M. S. M. Yusof</i>
10.00 – 10.15	10.15 – 10.30		
ID 265: Finite Element Modelling and Analysis of a De-bonded Smart Beam in Actuation <i>A. M. Yaakob, S. F. Toha, M. A. A. Kadir, M. S. M. Yusof</i>	ID 269: Gait Identification and Optimization for Amphi-Underwater Robot by using Ant Colony Algorithm <i>M. S. M. Yusof, S. F. Toha</i>		

Parallel Technical Sessions 4, Thursday, 20 September 2018: 11.00 – 12.45			
M4A: MECHANICAL ENGINEERING			
Chairperson: Assoc. Prof. Dr. Erwin Sulaeman Co-Chairperson: Dr. Muhamad Hanafi Azami		Venue: E2-2-1, Block E2	
11.00 – 11.15	11.15 – 11.30	11.30 – 11.45	11.45 – 12.00
ID 229: Determination Of Mill Scale Derived Hematite Process For NiO.3ZnO.7Fe2O4 As Electromagnetic Interference (EMI) Suppressors In Terms Of Electrical Properties <i>Adzly Anuar</i>	ID 232: Monosodium Glutamate As Natural Corrosion Inhibitor Of Mild Steel In Hydrochloric Acid Solution <i>M. M Rashid, Suryanto, M. H. Mahmood, F. I. Haider</i>	ID 239: A Study Of Total Productive Maintenance (TPM) And Lean Manufacturing Tools And Their Impact On Manufacturing Performance <i>Herry Agung Prabowo, Erry Y. T. Adesta</i>	ID 245: Nonlinear Dynamics Of Heated Falling Films Under The Influence Of Long-Wave Van Walls Intermolecular Force Interactions <i>Ahmad Tariq Jameel, Mohammad Ameer Hamza, Waqar Asrar</i>
12.00 – 12.15	12.15 – 12.30		
ID 248: Design Of A Fuel Pump System For Fuel Tank To Bowser Conversion <i>Mohamad Afdzal Faiz, Sany Izan Ihsan</i>	ID 252: Autonomous Boat For Underwater Surveillance <i>Azizi Bin Hazim, Muhammad Mahbubur Rashid, MD. Julkar Nayan, M. A. Hannan</i>		

Parallel Technical Sessions 4, Thursday, 20 September 2018: 11.00 – 12.45			
M4B: MECHANICAL ENGINEERING			
Chairperson: Prof. Dr. Ahmad Faris Ismail Co-Chairperson: Dr. Syed Noh Syed Abu bakar		Venue: E2-2-2, Block E2	
11.00 – 11.15	11.15 – 11.30	11.30 – 11.45	11.45 – 12.00
ID 249: Educational Software For Stress Analysis Of Non-Idealized Closed Thin Walled Sections <i>Jaffar Syed Mohamed Ali, Mir Owais Ali Ibrahim, Miah Mohammed Riyadh</i>	ID 251: Study on the Aerodynamics and Stability Characteristics of a Canard Aircraft <i>Mohamed Ali Jaffar Syed, M. Mubin Saleh</i>	ID 260: Determination of Stress Intensity Factor of Actuated Cracked Aluminum Plate Using Strain Gages <i>Meftah Hrairi, Awang Hadi Ifwat Awang Bujang</i>	ID 261: Multi-Objective Optimization of Incremental Sheet Metal Forming <i>Fiz Zakaria, Meftah Hrairi, Jamal I. Daoud</i>
12.00 – 12.15			
ID 262: Finite Element Analysis of Thermal Stress Intensity Factors for Cracked Bimaterial System Under Convective Cooling <i>Arafathali S. B., Meftah Hrairi, Jaffar Syed Mohamed Ali</i>			

Parallel Technical Sessions 4, Thursday, 20 September 2018: 11.00 – 12.45			
M4C: Mechanical ENGINEERING			
Chairperson: Dr. Muhammad Saifuddin Mohamed Rehan Co-Chairperson: Dr. Nur Azam Bin Abdullah			Venue: E2-1-4, Block E2
11.00 – 11.15	11.15 – 11.30	11.30 – 11.45	11.45 – 12.00
ID 181: Efficiency Of Photovoltaic Paint: A Review <i>Shaheer A. Khan, Ataur Rahman</i>	ID 241: Development and Investigation of a Cooling System for a Parked Vehicle using Solar Energy <i>AKM Mohiuddin, Amirah Osman</i>	ID 267: Development of Electro-hydro Automatic Inner Mirror Endurance Test System <i>Ataur Rahman, Ahsan Sakif</i>	ID 272: Parametric Study of Ground Vehicle Suspension System <i>Mohamad A. H. Ruslan, Fadly J. Darsivan</i>
12.00 – 12.15	12.00 – 12.30		
ID 275: Development of Rapid Charging System for EV Battery <i>Ataur Rahman, Abdul Hassan Jaafar</i>	ID 278: Electromagnetic Contactless Torque Transducer: Torque Measurement and Shaft Impediment Approach <i>Ataur Rahman, Badrul Md Daud</i>		

Parallel Technical Sessions 5, Thursday, 20 September 2018: 2.00 – 3.30			
M5A: MECHANICAL ENGINEERING			
Chairperson: Prof. Dr. Waleed Fekry Faris Co-Chairperson: Dr. Amelda Dianne Andan		Venue: E2-2-1, Block E2	
2.00 – 2.15	2.15 – 2.30	2.30 – 2.45	2.45 – 3.00
ID 195: Mass Estimation of a Quadrotor using Composite Mode Reference Adaptive Control <i>Alia Farhana Abdul Ghaffar</i>	ID 257: Experimental Investigation On Fresh Water Production Using Air Gap Membrane Distillation <i>Mohamad Hafizuddin bin Roslan, Rubina Bahar, Irfan Hilmy</i>	ID 258: Thermo-Electro-Mechanical Vibration Of Piezoelectric Plates In Contact With Bounded Fluid <i>Korosh Khorshidi, Mahdi Karimi</i>	ID 263: Satellite Attitude Tracking Control using Thrusters and Momentum Wheels <i>M Okasha, M Idres, A Ghaffar</i>
3.00 – 3.15			
ID 271: Experimental Study on Low Temperature Power Generator <i>Sarah Shamila Rosili, Sany Izan Ihsan, Syed Noh Syed Abu Bakar</i>			

Parallel Technical Sessions 5, Thursday, 20 September 2018: 2.00 – 3.30			
M5B: MECHANICAL ENGINEERING			
Chairperson: Assoc. Prof. Dr. Sany Ihsan Co-Chairperson: Dr. Nur Azam Bin Abdullah			Venue: E2-2-2, Block E2
2.00 – 2.15	2.15 – 2.30	2.30 – 2.45	2.45 – 3.00
ID 225: Design And Modeling Of Regenerative Dispersion Magnetorheological (Mr) Damper <i>Mohammad Abdul Aziz, MM Rashid, Mhd Salim Saadeddin, MD Raisuddin Khan</i>	ID 230: Calcium Phosphate/Poly(Ethylene Gly-Col) Bone Cement: Cell Culture Performance <i>Sufiamie Hablee, Nurhusna Samsudin, Iis Sopyan, Maizirwan Mel, Hamzah Mohd. Salleh, Md. Mujibur Rahman</i>	ID 253: Design And Performance Test Of A Compressed Air Operated Reciprocating Machine <i>Mohammad Abdul Aziz, MM Rashid, Rupal Roy, Arifuzzaman</i>	ID 254: Development Of A Glucose Sensor System With Real-Time Calibration <i>Nadhirah Mokhtaruddi, Muhammad Mahbubur Rashid, Md. Julkar Nayan, M. A. Hannan</i>

Parallel Technical Sessions 5, Thursday, 20 September 2018: 2.00 – 3.30			
M5C: MECHANICAL ENGINEERING			
Chairperson: Dr. Mohd Sultan Ibrahim Co-Chairperson: Dr. Norfazrina Hayati Binti Mohd Yatim			Venue: E2-1-4, Block E2
2.00 – 2.15	2.15 – 2.30	2.30 – 2.45	2.45 – 3.00
ID 255: Shape Control of Composite Plates with Piezoelectric <i>J. S. Mohamed Ali, Munir Mohamed Mahmood, M. S. I. Shaik Dawood</i>	ID 256: Springback Of CFRP Thick Laminate Composite <i>M. Zakaria, M. S. Shaik Dawood, Y. Aminanda, S. A. Rashidi, M. A. Mat Sah</i>	ID 259: Modelling Different Repair Configurations of an Aluminum Plate with a Hole <i>Abdul Aabid, Meftah Hrairi, Mohd Sultan Ibrahim bin Shaik Dawood</i>	ID 274: Roll Control Reversal of Variable Swept Wing in Supersonic Flow <i>Mohamed Ibren, Erwin Sulaeman, Ari Legowo, Nur Azam Abdullah</i>

MALAYSIA – TRULY ASIA



With the land size of 329,758 sq km the Federation of Malaysia comprises of Peninsular Malaysia and the states of Sabah and Sarawak on the island of Borneo. Located between 2° and 7° north of the Equator, Peninsular Malaysia is separated from the states of Sabah and Sarawak by the South China Sea. To the north of Peninsular Malaysia is Thailand while its southern neighbour is Singapore. Sabah and Sarawak are bounded by Indonesia while Sarawak also shares a border with Brunei.

Malays who make up about 57% of the 25 million populations are the predominant group in Malaysia, with Chinese, Indians and other ethnic groups making up the rest. Bahasa Melayu (Malay) is the national language but English is widely spoken. The ethnic groups also speak various languages and dialects. The official religion in Malaysia is Islam but all other religions are freely practiced.

Malaysia is blessed with a tropical climate with warm weather all year round. The temperatures ranged from around 21°C (70°F) to 32°C (90°F) and the annual rainfall varies from 2,000mm to 2,500mm. Manufacturing constitutes the largest single component of Malaysia's economy. Tourism and primary commodities such as petroleum, palm oil, natural rubber and timber are other major contributors to the economy.

Malaysia is divided into Peninsular Malaysia (West Malaysia) and East Malaysia. The capital, Kuala Lumpur, lies midway along the West Coast of Peninsular Malaysia. Kuala Lumpur represents the heartbeat of Malaysia, serving as its administration, cultural, commercial and transportation centre.

It all began in the Middle of the 19th century when a group of tin prospectors came to settle around the convergence of the Klang and Gombak rivers. This marked the foundation of Kuala Lumpur and it has been its share of growth and setbacks to become metropolitan centre of today.

With a population of over 1.3 million, Kuala Lumpur is by far the largest city in Malaysia. Malays, Chinese and Indians comprise the main races among others in this multicultural backdrop. This ethnic diversity has shaped the city over the years and is clearly seen in the various cultural customs and religious beliefs, as well as languages, cuisines and architecture.

Better known as KL to the locals, the city is a heady mix of history and culture intertwined with mushrooming skyscrapers and office towers. Kuala Lumpur is one of the best examples of a city that has managed to preserve the best of its cultural heritage and combine it with modern conveniences to offer a wholly unique experience to visitors.

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA (IIUM)



IIUM was established in 1983 to fulfill one of the major aspirations of the contemporary global Muslim community. This yearning of the Ummah is a key element in IIUM's vision statement: "To be an international centre of educational excellence which integrates Islamic revealed knowledge and values in all disciplines and which aspires to the restoration of the Ummah's leading role in all branches of knowledge."

IIUM operates under the direction of a Board of Governors with representatives from the eight sponsoring governments and the Organization of Islamic Conference (OIC). Currently, IIUM is home to over 15,000 students including students from more than 100 countries and 3,000 teaching and administrative staff members.

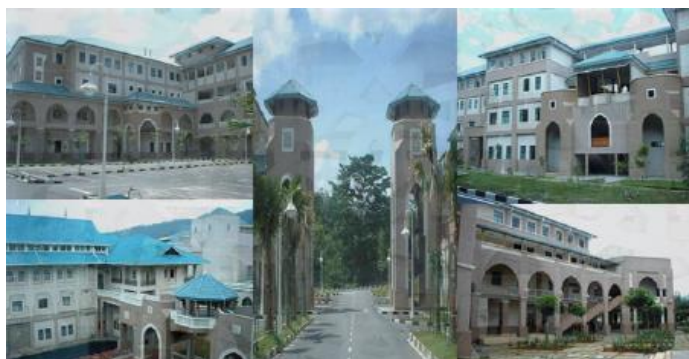
The university's current physical facilities are located at three sprawling campuses in Gombak, Kuala Lumpur, and Kuantan, and a Matriculation Centre in Petaling Jaya. This is a far cry from its humble beginnings in 1983 when it operated from temporary quarters with 153 students and a handful of lecturers and administrators.

IIUM offers a wide range of academic programmes through its faculties of Science, Laws, Medicine, Engineering, Islamic Revealed Knowledge and Human Sciences, Economics and Management, Nursing and Allied Health Sciences and Architecture and Environmental Design. These are geared towards both skill-building and scholastic attainments and designed in accordance with IIUM's philosophy, which is built upon the belief that knowledge must be pursued and propagated in the spirit of tawhid, as an act of worship, in full recognition that it is a trust which Allah has placed upon mankind. Malaysian graduates of IIUM have performed well in both the public and private sectors. Since 1987 IIUM has been producing about 3,000 graduates annually.



Website: <http://www.iium.edu.my>

KULLIYAH OF ENGINEERING, IIUM



The mission of the Faculty of Engineering is to provide quality engineering education, with sufficient scope to include fundamental and specialized knowledge and practice in engineering and a broad base in management, ethics, and humanities. This will enable our graduates to be ready to serve the current and emerging needs of the society.

Besides being professionally qualified and competent, the graduates will acquire spiritual, intellectual, moral and ethical characteristics towards the development of an integral and harmonious relationship with Allah (the creator), fellow human beings and with the natural environment. The interdisciplinary approach to engineering education not only allows the graduates to solve industrial and human problems; it will also enable them to bring about and manage changes in conformity with the worldview based on the principles of Islam.

Currently, there are eight programmes being offered: Aerospace Engineering, Automotive Engineering, Biotechnology Engineering, Communication Engineering, Computer and Information Engineering, Manufacturing Engineering, Materials Engineering, and Mechatronics Engineering. The faculty is also offering postgraduate engineering programmes leading to MSc. and Ph.D. degrees. At the moment the student population at the undergraduate level stands at 1981 with 200 students at the postgraduate level.

Research and development is one of the primary activities in the Faculty of Engineering and there are excellent facilities, qualified and competent academic staff, and conducive environment which enhance active participation in research activities in various fields of Engineering. To foster research collaboration amongst faculty members, research units and research groups have been established. Presently, there are three research units and fifteen research groups which span various areas of engineering, encompassing both conventional and emerging fields. There are also well equipped Advanced Laboratories to support research and development activities and postgraduate studies. The Faculty of Engineering offers PhD and Master degree programmes. The PhD programme is by research whereas the Master degree programme is conducted in three modes, namely, research only, mixed mode (equal number of credits for both courses and research), and courses only. It offers eight master programmes in the following areas: Automotive Engineering, Biotechnology Engineering, Communication Engineering, Computer and Information Engineering, Electronic Engineering, Manufacturing Engineering, Material Engineering, Mechatronics Engineering. There are also the Executive Master degree programmes by taught courses run by Advanced Engineering and Innovation Centre (AEIC).



"World class centre of engineering education
and research with values and ethics"

Website: <http://eng.iium.edu.my>

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