

ERWIN SULAEMAN



- KULLIYAH OF ENGINEERING
- IIUM Gombak Campus
- Email address:
esulaeman@iium.edu.my

المؤهل العلمي

- Doctor of Philosophy (Aerospace Engineering)
- Aerospace Engineering
- Science

مسؤوليات التدريس

ADVANCED ENGINEERING MATHEMATICS	2016/2017 2017/2018
AERODYNAMICS II	2013/2014 2014/2015 2015/2016 2016/2017
AEROELASTICITY	2011/2012 2012/2013 2013/2014
AEROSPACE DYNAMICS	2016/2017 2017/2018
AEROSPACE DYNAMICS	2011/2012 2012/2013 2013/2014 2014/2015 2016/2017 2017/2018 2020/2021
AEROSPACE ENGINEERING LAB II	2018/2019 2019/2020
AIRCRAFTS STRUCTURES I	2018/2019 2019/2020
AIRWORTHINESS	2019/2020
APPLIED ELASTICITY	2014/2015 2015/2016
APPLIED FINITE ELEMENT METHOD	2018/2019 2019/2020 2020/2021
AUTOMOTIVE ENGINEERING LAB III	2012/2013 2013/2014 2014/2015 2015/2016
AUTOMOTIVE ENGINEERING LAB V	2016/2017
DYNAMICS	2010/2011 2011/2012 2012/2013 2013/2014 2014/2015 2015/2016 2016/2017 2018/2019
DYNAMICS OF MACHINERY	2017/2018
FINITE ELEMENT ANALYSIS	2017/2018 2018/2019
FLIGHT DYNAMICS AND CONTROL	2019/2020
KINEMATICS AND DYNAMICS OF MACHINERY	2015/2016 2016/2017
MECHANICS OF MATERIALS	2013/2014

PROJECT I	2011/2012
PROJECT II	2011/2012 2012/2013 2013/2014 2018/2019 2019/2020 2020/2021
RIGID BODY DYNAMICS	2010/2011 2011/2012 2012/2013 2013/2014
SPACECRAFT DYNAMICS AND CONTROL	2018/2019 2019/2020 2020/2021
STATICS	2010/2011 2011/2012 2012/2013 2014/2015 2020/2021
STRENGTH OF MATERIALS	2017/2018
STRUCTURAL DYNAMICS	2010/2011 2011/2012 2012/2013 2017/2018
VEHICLE STRUCTURAL DESIGN & MATERIALS SELECTION	2017/2018

المشاريع البحثية

In Progress

- 2017 - Present** Stress Analysis of Piezoelectric Embedded Structures Subjected to Combined Loading
- 2017 - Present** Nonlinear Fluid Structure Interaction and Control of Lifting Surface and Body
- 2017 - Present** The Study of Robust Adaptive Extended Kalman Filter (EKF) for Stability Derivatives Identification of Multirotor based Unmanned Aerial Vehicle (M-UAV)
- 2016 - Present** Investigation of Flight Dynamics, Stability and Control of Beetle-Mimicking Flapping Wings

Completed

- 2017 - 2020** Stress Analysis of Piezoelectric Embedded Structures Subjected to Combined Loading
- 2017 - 2020** Nonlinear Fluid Structure Interaction and Control of Lifting Surface and Body
- 2013 - 2016** Hybrid Singularly Implicit - Explicit Kernel Function Method For Unsteady Aerodynamic Analysis Of Multiple Interfering Aeroelastic Lifting Surfaces
- 2012 - 2015** Mixed Unscented Filter (UKF) and Differential Evolution (DE) Method for Modeling of Beetle-Mimicking Ornithopter
- 2012 - 2015** Study on the Effect of Piezoelectric Actuation on Fracture Toughness of Composite Structures
- 2011 - 2013** RU 2011: Computational Aerodynamics Analysis of Multiple Interfering Lifting Surfaces Oscillating in Subsonic flow

2010 - 2013 Analytical Finite Element Formulation of a Asymmetric, Non-uniform Euler-Bernoulli Beam

المنشورات

Article

- 2020** [Aerodynamics of symmetric permeable airfoils and wings: CFD simulation.](#) Progress in Computational Fluid Dynamics , 20 (6) pp.349-361
- 2020** [Gust load alleviation of flexible composite wing.](#) CFD Letters , 12 (4) pp.79-89
- 2020** [Development of control system for quadrotor unmanned aerial vehicle using LoRa wireless and GPS tracking.](#) Telkomnika (Telecommunication Computing Electronics and Control) , 18 (5) pp.2674-2681
- 2020** [The effect of fuel weight distribution on the aeroelastic instability of swept wings.](#) International Journal of Vehicle Structures & Systems , xx (xx) pp.1
- 2020** [Effect of a directionally porous wing tip on tip vortex.](#) Journal of Applied Fluid Mechanics , 13 (2) pp.651-665
- 2019** [Numerical investigation of flow field of a non-circular cylinder.](#) CFD Letters , 11 (5) pp.37-49
- 2019** [Adopting dynamic transient response analysis for sensors positioning to monitor cable stayed bridge.](#) International Journal of Recent Technology and Engineering , 7 (6S) pp.54-60
- 2019** [Performance evaluation of linear quadratic regulator and linear quadratic Gaussian controllers on quadrotor platform.](#) International Journal of Recent Technology and Engineering (IJRTE) , 7 (6S) pp.191-195
- 2019** [Roll control reversal of variable swept wing in supersonic flow.](#) International Journal of Recent Technology and Engineering (IJRTE) , 7 (6S) pp.288-291
- 2019** [Developing magnetic damper system for microsatellite.](#) International Journal of Recent Technology and Engineering (IJRTE) , 7 (6S) pp.93-99
- 2019** [Experimental correlation for flow-boiling heat transfer in a micro-gap evaporator with internal micro-fins.](#) Journal of Advanced Research in Fluid Mechanics and Thermal Sciences , 54 (1) pp.1-8
- 2019** [Convergence and error analysis of a bi-quadratic triangular galerkin finite element model for heat conduction simulation.](#) Journal of Advanced Research in Fluid Mechanics and Thermal Sciences , 54 (1) pp.78-86
- 2019** [Effects of bio-inspired surface roughness on a swept back tapered NACA 4412 wing.](#) Journal of Aerospace Technology and Management , 11 pp.e1719
- 2019** [A Model Predictive Control \(MPC\) approach on unit quaternion orientation based quadrotor for trajectory tracking.](#) International Journal of Control, Automation and Systems , 17 (11) pp.2819-2832

- 2018** [CFD analysis on the effect of winglet cant angle on aerodynamics of ONERA M6 wing.](#) Journal of Advanced Research in Fluid Mechanics and Thermal Sciences , 45 (1) pp.44-54
- 2018** [Aerodynamics of porous airfoils and wings.](#) Acta Mechanica , online 1st pp.1-19
- 2018** [Experimental investigation of a new spiral wingtip.](#) International Journal of Aviation, Aeronautics, and Aerospace , 5 (2) pp.1-32
- 2018** [Low reynolds number numerical simulation of the aerodynamic coefficients of a 3D wing.](#) International Journal of Aviation, Aeronautics, and Aerospace , 5 (1) pp.1-27
- 2018** [Trilinear finite element solution of three dimensional heat conduction partial differential equations.](#) International Journal of Engineering & Technology (UAE) , 7 (4.36) pp.379-384
- 2018** [Two-phase fin-induced turbulent cooling for electronic devices using heat pump associated micro-gap Heat Sink.](#) International Journal of Engineering & Technology , 7 (3.13) pp.113-122
- 2018** [Low-cost base drag reduction technique.](#) International Journal of Mechanical Engineering and Robotics Research (IJMERR) , 7 (4) pp.428-432
- 2017** [Literature review : Biomimetic and conventional aircraft wing tips.](#) International Journal of Aviation, Aeronautics, and Aerospace , 4 (2) pp.1-25
- 2017** [Yawing force of electric trimmers of a hybrid buoyant aerial vehicle.](#) Pertanika J Sci and tech , 25 (1) pp.293-302
- 2017** [Sensor placement based on static finite element data of cable stayed bridge.](#) International Journal of Emerging Technology and Advanced Engineering , 7 (7) pp.427-432
- 2017** [Sensor placement based on FE modal analysis: Dynamic characteristic of cable stayed Penang \(I\) bridge.](#) International Research Journal of Engineering and Technology , 4 (9) pp.145-151
- 2017** [Effect of diamond shaped strut with cylindrical pitch rod in subsonic wind tunnel testing.](#) Measurement: Journal of the International Measurement Confederation , 99 pp.1-6
- 2017** [Wind tunnel testing of hybrid buoyant aerial vehicle.](#) Aircraft Engineering and Aerospace Technology , 89 (1) pp.99-105
- 2017** [Defining reference area for prediction of aerodynamic coefficients of a biologically inspired hybrid buoyant vehicle.](#) Unmanned Systems , 5 (4) pp.237-246
- 2017** [Hybrid buoyant aircraft: future STOL aircraft for interconnectivity of the Malaysian islands.](#) Journal of Aviation Technology and Engineering , 6 (2) pp.80-88
- 2016** [Estimation of pitching moment of a hybrid lifting fuselage - Disguised as hull of an airship.](#) ARPN Journal of Engineering and Applied Sciences , 11 (4) pp.2217-2221
- 2016** [Framework of conceptual design methodology for hybrid buoyant aircraft.](#) Aerotecnica Missili & Spazio = The Journal of Aerospace Science, Technology and Systems , 95 (2 (April-June)) pp.99-110

- 2016** [A review on aerodynamics of nonflapping bird wings.](#) Journal of Aerospace Technology and Management , 8 (1 (Jan-Mar)) pp.7-17
- 2016** [Wind tunnel testing on a generic model of a hybrid lifting hull.](#) Journal of Aerospace Technology and Management , 8 (4) pp.467-474
- 2016** [A comparative analysis of flow boiling in micro-gaps with internal micro-fins of rectangular and triangular profiles.](#) International Journal of Applied Engineering Research , 11 (4) pp.2364-2372
- 2016** [Effect of wing loading on gross takeoff mass of a hybrid buoyant aircraft.](#) International Journal of Unmanned Systems Engineering , 4 (1) pp.11-22
- 2016** [Assessment of engine's power budget for hydrogen powered hybrid buoyant aircraft.](#) Propulsion and Power Research , 5 (1) pp.34-44
- 2016** [Study on turbulent characteristics of flow boiling in a micro gap under the influence of surface roughness and micro fins.](#) ARPJ Journal of Engineering and Applied Sciences , 11 (1) pp.410-414
- 2016** [A critical assessment on evaporative cooling performance of micro finned micro gap for high heat flux applications.](#) ARPJ Journal of Engineering and Applied Sciences , 11 (1) pp.331-336
- 2016** [Effect of geometrical parameters on boiling heat transfer and pressure drop in micro finned micro gap.](#) ARPJ Journal of Engineering and Applied Sciences , 11 (1) pp.297 -302
- 2016** [Establishing the analytical relationships for mass and volumetric mass fractions for hybrid buoyant aircraft.](#) ARPJ Journal of Engineering and Applied Sciences , 11 (1) pp.286-291
- 2016** [Error analysis of heat conduction partial differential equations using Galerkin's Finite Element method.](#) Indian Journal of Science and Technology , 9 (36) pp.1-6
- 2015** [Design and fabrication of a winged hybrid airship model for IIUM-LSWT.](#) Advanced Materials Research , 1115 pp.513-516
- 2015** [Smartphone based classification system for indoor navigation.](#) Applied Mechanics and Materials , 775 pp.436-440
- 2015** [Cambered profile of a California sea lion's body.](#) The Journal of Experimental Biology , 218 pp.1270-1271
- 2015** [Aerostatic and aerodynamic modules of a hybrid buoyant aircraft: an analytical approach.](#) IIUM Engineering Journal , 16 (1) pp.9-17
- 2015** [Modeling and analysis of flutter-based thin-film cantilever microgenerator.](#) ARPJ Journal of Engineering and Applied Sciences , 10 (21) pp.9688-9697
- 2015** [Mobility determination and estimation based on smartphones-review of sensing and system.](#) ARPJ Journal of Engineering and Applied Sciences , 10 (21) pp.10066-10071
- 2015** [Half model testing for canard of a hybrid buoyant aircraft.](#) International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering , 9 (10) pp.1544-1547

- 2014 [Approximate function for unsteady aerodynamic kernel function of aeroelastic lifting surfaces.](#) IIUM Engineering Journal , 15 (1) pp.71-79
- 2014 [Aeroelastic flutter analysis of supersonic wing with multiple external stores.](#) IIUM Engineering Journal , 15 (2) pp.1-11
- 2014 [Aeroelastic tailoring of oscillating supersonic wing with external stores.](#) Applied Mechanics and Materials , 464 pp.110-115
- 2012 [On the evaluation of negative altitude requirement for flutter speed boundary of transport aircraft and UAV.](#) Applied Mechanics and Materials , 225 pp.397-402
- Conference or Workshop Item**
- 2020 [Position of static cylinder effect on base flows.](#) In: **1st International Conference on Data Science, Machine Learning and Applications, 2019**
- 2019 [Prediction of buckling mode for simply supported stiffened thin plates subject to inplane loading.](#) In: **11th International Conference On Numerical Analysis In Engineering Conference In Numerical Analysis In Engineering (NAE) 2019**
- 2019 [Review on system identification for quadrotor Unmanned Aerial Vehicle \(UAV\).](#) In: **2019 Advances in Science and Engineering Technology International Conferences (ASET)**
- 2018 [Evaluation performance of linear quadratic regulator and linear quadratic gaussian controllers on quadrotor platform.](#) In: **4th International Conference on Mechanical, Automotive, and Aerospace Engineering 2018 (ICMAAE'18)**
- 2018 [Passive control of base pressure with static cylinder at supersonic flow.](#) In: **1st International Conference on Aerospace and Mechanical Engineering (AeroMech 2017)**
- 2018 [Experimental investigation on frequency shifting of imperfect adhesively bonded pipe joints.](#) In: **International Conference on Advances in Manufacturing and Materials Engineering (ICAMME 2017)**
- 2018 [Classical equivalent circuit characterization for a double-layer capacitor.](#) In: **4th IEEE International Conference on Smart Instrumentation, Measurement and Applications (ICSIMA) 2017**
- 2018 [Counter clockwise rotation of cylinder with variable position to control base flows.](#) In: **1st International Conference on Aerospace and Mechanical Engineering, AeroMech 2017**
- 2017 [Structural design of hybrid buoyant aircraft's model for subsonic wind tunnel testing.](#) In: **14th International Bhurban Conference on Applied Sciences & Technology (IBCAST)**
- 2017 [Aeroelastic passive control optimization of supersonic composite wing with external stores.](#) In: **3rd International Conference on Mechanical, Automotive and Aerospace Engineering 2016 (ICMAAE'16)**
- 2017 [Dynamic response for structural health monitoring of the Penang \(I\) cable-stayed bridge.](#) In: **3rd International Conference on Mechanical, Automotive and Aerospace Engineering, ICMAAE 2016**

- 2016 [A novel technique to neutralize the Yawing moment due to asymmetric thrust in a hybrid buoyant aircraft.](#) In: **10th International Conference on Experimental Fluid Mechanics, EFM 2015**
- 2016 [A prospective solution For consistent aerostatic lift for a hybrid buoyant aircraft.](#) In: **6th International Conference on Industrial Engineering and Operations Management in Kuala Lumpur, IEOM 2016**
- 2016 [Comparison of data correction methods for blockage effects in semispan wing model testing.](#) In: **"10th International Conference on Experimental Fluid Mechanics, EFM 2015"**
- 2016 [Effect of side wind on the directional stability and aerodynamics of a hybrid buoyant aircraft.](#) In: **2015 International Conference on Mechanical Engineering and Electrical Systems (ICMES 2015)**
- 2015 [Hydrostatic and hydrodynamic characteristics of swimming animals: an inspiration for hybrid buoyant aircraft.](#) In: **4th International Scientific Conference on Applied Sciences and Engineering (4 thISCASE-2015)**
- 2015 [Power-off static stability analysis of a clean configuration of a hybrid buoyant aircraft.](#) In: **8th Ankara International Aerospace Conference 2015**
- 2015 [A critical assessment on evaporative cooling performance of micro finned micro gap for high heat flux applications.](#) In: **International Postgraduate Conference on Engineering Research (IPCER) 2015**
- 2015 [Aerodynamics and Static Stability Characteristics of a Hybrid Buoyant Aerial Vehicle at Low Speed.](#) In: **62nd Canadian Aerospace Institute Conference (Aero 2015)**
- 2015 [Establishing the analytical relationships for mass and volumetric mass fractions for hybrid boyant aircraft.](#) In: **International Postgraduate Conference on Engineering Research (IPCER) 2015**
- 2015 [Study on turbulent characteristics of flow boiling in a micro gap under the influence of surface roughness and micro fins.](#) In: **International Postgraduate Conference on Engineering Research (IPCER) 2015**
- 2015 [Effect of geometrical parameters on boiling heat transfer and pressure drop in micro finned micro gap.](#) In: **International Postgraduate Conference on Engineering Research (IPCER) 2015**
- 2014 [Conceptual design of a winged hybrid airship.](#) In: **21st Lighter than Air Technology Conference, Aviation 2014**
- 2014 [Stability and takeoff ground roll issues of hybrid buoyant aircraft.](#) In: **5TH INTERNATIONAL CONFERENCE ON MECHANICAL AND MANUFACTURING ENGINEERING 2014 (ICME2014)**
- 2014 [Comparison of digital DATCOM and wind tunnel data of a winged hybrid airship's generic model.](#) In: **AEROTECH V**
- 2014 [Static longitudinal stability of a hybrid airship.](#) In: **11th International Bhurban Conference on Applied Sciences & Technology (IBCAST)**

- 2013 [Flutter analysis of supersonic wing with external stores.](#) In: **International Conference on Mechanical, Automotive and Aerospace Engineering (ICMAAE 2013)**
- 2013 [Alternate approximate function for kernel function of oscillating lifting surfaces.](#) In: **International Conference on Mechanical, Automotive and Aerospace Engineering 2013**
- 2013 [Penang bridge 1 loading analysis using British standard and finite element method for structural health monitoring.](#) In: **2nd International Conference on Mechanical, Automotive and Aerospace Engineering (ICMAAE 2013)**
- 2011 [Analytical Finite Element Formulation of Non-uniform Euler-Bernoulli Beam.](#) In: **International Conference on Mechanical, Automotive and Aerospace Engineering (ICMAAE' 11)**

Book

- 2011 [Selected topics in aerospace engineering.](#) IIUM Press . ISBN 9789674181451
- 2011 [Advances in Aircraft Structures.](#) IIUM Press . ISBN 978-967-418-148-2

Book Section

- 2011 [Axial stiffness matrix of non-uniform Bernoulli-Euler bar element.](#) In: **Advances in Aircraft Structures** IIUM Press . ISBN ISBN 978-967-418-148-2 , pp.233-239
- 2011 [Overview of dynamics of flexible air vehicle.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.76-82
- 2011 [Translation of axis procedure to construct stiffness matrix.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.83-87
- 2011 [Minimum denominator of rational function.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.88-93
- 2011 [Torsional stiffness matrix of non-prismatic beam elements.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.94-98
- 2011 [Bending stiffness matrix of non-prismatic beam elements.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 978-967-418-145-1 , pp.99-104
- 2011 [Formulation of kernel function for aerodynamic loading on air vehicle.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.105-110
- 2011 [Unsteady aerodynamic theory of lifting surface.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.111-116
- 2011 [Numerical evaluations of hypergeometric cylindrical functions.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.117-122
- 2011 [Alternate expansion series for the incomplete cylindrical function.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.135-139
- 2011 [Alternate approximate function for kernel function of planar oscillating lifting surfaces.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.146-151

- 2011 [Approximate function for far-field kernel function of oscillating non-planar lifting surfaces.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.158-161
- 2011 [Approximate function for near-field kernel function of non-planar lifting surfaces.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 978-967-418-145-1 , pp.152-157
- 2011 [Improved vortex lattice method.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.162-167
- 2011 [Improved doublet point method.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.168-175
- 2011 [Improved doublet lattice method.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.176-179
- 2011 [Application of the aerodynamic discrete element methods.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.180-186
- 2011 [Aeroelastic stability problem of air vehicle.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.187-194
- 2011 [Accurate geometric stiffness matrix formulation of beam finite element .](#) In: **Advances in Aircraft Structures** IIUM Press . ISBN ISBN 978-967-418-148-2 , pp.190-197
- 2011 [Application of Virtual Fields Method to Composite Plate Bending Problem.](#) In: **Advances in aircraft structure** IIUM Press . ISBN 978-967-418-148-2 , pp.137-142
- 2011 [Analytical derivation of the incomplete cylindrical functions: real parts.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.123-130
- 2011 [Analytical derivation of the incomplete cylindrical functions: imaginary part.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.130-134
- 2011 [Expansion series of continuous function using analytical integration of least square regression.](#) In: **Selected topics in aerospace engineering** IIUM Press . ISBN 9789674181451 , pp.140-145
- 2011 [Experimental geometric stiffness matrix formulation of beam finite element..](#) In: **Advances in Aircraft Structures** IIUM Press . ISBN 978-967-418-148-2 , pp.190-201