

29 - 30 April 2023

DUBAI, UAE

ICMAME

International Conference on  
Mechanical, Automotive and  
Mechatronics Engineering



**International Conference on  
Mechanical, Automotive and Mechatronics Engineering (ICMAME 2023)**

**THE CONFERENCE PROGRAM**

**(ONLINE PART-30 APRIL 2023)**

**Time Zone: GMT+4 (Dubai Time)**

09:00-09:10	<b>OPENING SPEECH:</b> Prof. Dr. Samir Emam - ICMAME Chair, American University of Sharjah, UAE
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**SESSION-I: ENERGY, BATTERIES AND CONTROL**

**Session Chair: Sailaja Kumari M**

09:10-11:20	32	Optimal Tuning of PID Controller for Boost Converter using Meta-Heuristic Algorithm for Renewable Energy Applications	Muhammad Hamza Zafar, Majad Mansoor, Noman Mujeeb Khan, Filippo Sanfilippo
	50	Harnessing new clean energy induced by electromagnetic resonance	Osamu Ide
	102	Mathematical model for energy efficiency of a lighting network using modified Dijkstra graph	Ekaterina Gospodinova
	193	Modeling of a lithium-ion battery used in a photovoltaic system in sub-Saharan Africa	Pape Alioune Dia, Ababacar Ndiaye, Cheikh Mouhamed Fadel Kebe
	216	PID parameter tables after ITAE to control overshooting systems found with AI algorithm	Roland Büchi
	226	State of Charge Estimation of Li-ion battery for BMS Application: A comparative study	Prashant, Rupesh Kumar Nirala, Sailaja Kumari M
	295	Optimized Fuzzy MRAS-based Sensorless Control of an Electric Vehicle Powertrain	Zakaria Sebboua, Kenza Bouhoune, Krim Yazid
	328	Numerical Investigation of Transition Turbulence Model for Tubine Airfoil at Low Reynolds Number	Mohamed Atef, Ahmed El Baz
	369	Comparing Supercapacitors to Lithium-ion batteries through measurements and simulations	Alain Abou Nakad, Mervat Madi, Olav Aaker, Efstratios L. Ntantis, Karim Y. Kaban
390	Effect of mechanical properties of permafrost soil on the stress state of a pipeline during settlements	Timur Sultanmagomedov, Ramil Bakhtizin, S. Sultanmagomedov, Rustyam Khasanov, Mina a. Pascal	

11:20-11:30	<b>BREAK-I</b>
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**SESSION-II: SIMULATION & MACHINE LEARNING**

**Session Chair: P.J. van Duijsen**

11:30-13:10	110	Stress and buckling analysis of multilayered composite plates with different cut-outs using finite element method	Farid Mahboubi Nasrekani, Aniket Raj, Manav Kumar
	183	Design and modelling of shaker table for harmonic response analysis of PV module	Chaitanya V. Bhore, Atul B. Andhare, Pramod M. Padole
	189	Personalization of AI-based Distance To Empty prediction model	Kihyung Joo, Lina Kim
	208	A Numerical Study of Stent Expansion	Joompon Bamrungwong, Nakarin Siangphor, Weerasak Ussawawongaraya
	251	A Novel Approach to Generate Dataset for Object Detection in Assembly Lines	Ramesh Kaki, Samarth Soni, Sandip Deshmukh, Tathagata Ray, Chandu Parimi
263	Teaching and development project for an eMobility bachelor course	S.J.C. Koning, T.D. Soons, T.H.J. Ypma, E.D. Zaty, D.C. Zuidervliet, P.J. van Duijsen	

11:30-13:10	287	Design, Development, and Validation of a Portable and Low-Cost Visible and Near-Infrared Hyperspectral Imaging Module	<b>Arvind Mukundan</b> , Yu-Ming Tsao, Hsiang-Chen Wang
	137	Bearing Fault Detection Scheme Using Machine Learning for Condition Monitoring Applications	Ali Saad, <b>Ali Usman</b> , Saad Arif, Marcus Liwicki, Andreas Almqvist
13:10-13:30	<b>BREAK-II</b>		
<b>SESSION-III: MIXED TOPICS</b> <b>Session Chair: S M Sohel Murshed</b>			
13:30-15:50	17	Solving Material Transportation Problems In Cracked-Porous Environments	<b>Marks Matyakubov</b> , Oybek Aliyev, Guzal Khujaniyazova
	196	Simplified equations for natural frequencies of pipes on elastic foundation conveying gases	<b>Saher Attia</b> , Magdi Mohareb, Michael Martens, Samer Adeen
	303	Impact of vortex generator on gas turbine blade cooling application	<b>Nirmal Halder</b>
	354	3D Printing of High Performance Electrodes for Electrochemical Cell	<b>Hosseinali Aghasharif</b> , Mohammad Abu Hasan Khondoker
	368	Parametric Optimization of Friction Stir Welding of Dissimilar Aluminum Alloys with Newly Developed Tool	<b>Arsalan Hussain</b> , Ali Usman, Farhan Ausaf, Samad Ali Taj, Abdel-Hamid Ismail Mourad
	372	Crash Simulation Utilizing Ansys Explicit Dynamics for the Analysis of a Traditional Jeepney's Crash Performance	Jaime Honra, Aldrin Calderon, Gawayne Escalona, <b>Ma. Janice J. Gumasing</b>
	373	Development and Testing of Image Recognition and Indoor Air Quality Monitoring Wireless Sensor Network	Engr. Ricky Umali, Aldrin Calderon, Gawayne Escalona, <b>Ma. Janice J. Gumasing</b>
	384	Design and research of steady-state flow force test bed for slide valve	<b>Lei Chen</b> , Ce Zhang, Bo Jin, Tang Bo Yuan
	416	Performance of a Grid-Connected Hybrid Power Generation System Combining Wind and SOFCs, with an Ultracapacitor Storage Unit	Santhosha Kumar A, Ramakrishna S S Nuvvula, <b>Hasan Koten</b> , Raghavendra P, Polamarasetty P Kumar
418	Computer Cooling Performance of MWCNTNanofluids	Miguel C. Sousa, <b>S M Sohel Murshed</b>	
419	Thermophysical Properties of Carbide and Nitride Nanofluids	Wagd Ajeeb, <b>S M Sohel Murshed</b>	
15:50-16:00	<b>BREAK-III</b>		
<b>SESSION-IV: VEHICLES &amp; AUTOMATION</b> <b>Session Chair: Ameena Al Sumaiti</b>			
16:00-18:00	51	Swarm of Nanobots in Medical Applications: a Future Horizon	<b>Ali Moltajaei Farid</b> , Malek Mouhoub
	113	An Intrusion Anomaly Detection Approach to Mitigate Sensor Attacks on Mechatronics Systems	Wasswa Shafik, S. Majtaba Matinkhah, <b>Kassim Kalinaki</b>
	195	Implementation of Battery Electric Multiple Unit on railways: Pavia case study	Alessandro Talarico, Alessandro Borselli, Matteo Bubici, <b>Andrea Di Martino</b> , Michela Longo, Federica Foadelli
	199	Design and Implementation of a Robotic Joint in Antagonistic Configuration with Impedance Control	<b>Oscar H. Reichow</b> , Rodrigo Trentini, Joel Stryhalski
	217	Honeycomb Type Tubeless Pneumatic Wheel Design	Erick David Daleman Amaya, Tito Alberto Nuncira Gacharna, Joaquin Jose Avila Pallares, <b>Alejandro Moreno Ardila</b> , ...
	264	A Novel Genetic Algorithm for Optimizing Microalgae Residence time in Flat Panel Photobioreactors	<b>Adham M. Elmalky</b> , Mohamad T. Araji
	315	EV Power Train Sizing for a Realistic slip rate	<b>Abbas Fardoun</b> , Sanjay Singh
	324	Electro-Mechanical Sensor System Proposal to Address Automobile Tire Blowouts	<b>Gabriel Gurulé</b> , LeJuan Richardson, Jacquelynne Hernández
	343	An Emulated Platform for Detecting and Size Measuring of Oil Spills Using An Unmanned Aerial Vehicle System	<b>Omer Eldirdiry</b> , Ahmed Al Maashari, Ashraf Saleem, Jawhar Ghommam, Hadj Bourdoucen, Navid Nasiri, Ghazi Al Rawas, Amran Al-Kamzari, Ahmed Ammari
397	A Matlab model for the electrical driving indicator in an electric vehicle	<b>Yasmeen Saleh</b> , Waseem Saeed, Ghaith Warkozek, Ameena Al Sumaiti	