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

## THE CONFERENCE PROGRAM

**(PHYSICAL PART-29 APRIL 2023)**

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

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| **08:00-09:00** | **REGISTRATION** | | |
| **08:30-09:00** | **WELCOME COFFEE** | | |
| **09:00-09:50** | **OPENING SPEECH:** **Prof. Dr. Samir Emam** - ICMAME Chair, American University of Sharjah, UAE | | |
| | **KEYNOTE SPEECH-I:** **Prof. Dr. Rached Dhaouadi**, American University of Sharjah, UAE Title: Online Monitoring and Efficiency Optimization of Solar Energy Systems | | |
| | **KEYNOTE SPEECH-II:** **Dr. Athar Waseem**, International Islamic University Islamabad, Pakistan Title: Security Threats and Mitigation Approaches for D2D Communication in 5G & B5G Wireless Networks | | |
| **SESSION-I: VEHICLES** **Session Chair: Fouzia Boukour Elbahhar** | | | |
| **09:50-11:10** | **26** | Fuzzy Fractional-Order PID Based on A COVID-19 Optimization Tracking Control for Electric Vehicle | **Mohamed A. Shamseldin**, A. M. Abdel Ghany, Almoataz Y. Abdelaziz, M.A. Abdel Ghany |
| | **112** | Scenario-based Parameter Boundary Reduction Approach for Highly Automated Driving Vehicles | **Marzana Khatun**, Heinrich Litagin, Rolf Jung, Michael Glaß |
| | **243** | Semantic Image Inpainting with Generative Adversarial Models and Skip Connections | Nikita Sharma, **Anuraj Singh** |
| | **341** | Comparing the Economic and Environmental Compatibility of Battery Electric and Conventional Vehicles in India | Amrut P. Bhosale, **Sachin A. Mastud**, Viraj I. Pasare, Ketaki A. Bhosale |
| | **356** | V2X communication Technology Identification Using Residual Neural Networks | Amal Elabbaoui, **Fouzia Boukour Elbahhar**, Rajaa El Assali |
| | **407** | Electric Vehicle Battery's State of Charge Estimation Using Extended Kalman filter and Heuristic Search Algorithms | **Abhay Chhetri**, Mayank Saklani, Devender Kumar Saini, Monika Yadav, Yogesh Chandra Gupta |
| | **415** | Electrical vehicles: aren't we avoiding considerations in the will to rush the switch to electrical cars? | **Rash Avishai** |
| **11:10-11:30** | **COFFEE BREAK-I** | | |
| **SESSION-II: ENERGY SYSTEMS** **Session Chair: Mohammed O. Hamdan** | | | |
| **11:30-13:00** | **276** | Structural Design of a Heliostat as a Senior Design Project | Albatool Ashkanani, Fatima Alhaddad, Rahaf Almarri, Shaikha Alsalem, **Zeenab Qutafah**, Mehmet Guler |
| | **125** | Effect of Vapor Quality and Pressure Drop on the Performance of CO2 Trans-Critical Air Conditioning Cycle with Porous Evaporator | **Mohammad Tarawneh** |

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| 11:30-13:00 | 242 | Numerical Study on the Influence of Engine Regenerator Length on the Performance of Thermoacoustic Cooler driven by Thermoacoustic Engine | **Irna Farikhah**, Akbar Muslim, Aan Burhanuddin, Agus Mukhtar, Maroua Ben Nasr, Ahmad Nadhif Masruri |
| | 258 | Theoretical Investigation into the Effects of Geometrical and Operating Parameters on the Performance of Solar Chimney Power Plants | Essam Ashraf, Mohamed Atef, Abdelrahman Mohamed, Ahmed Osama, Omar Mohsen, Amr Ismaiel, **Anas A. Rahman** |
| | 267 | Experimental Study on Cool Roof Methods for Two Identical Portable Cabins in the State of Kuwait | **Ahmad Sedaghat**, Hayder Salem, Wisam K. Hussam, Arash Mahdizadeh, Mohamad Iyad Al-Khiami, Mahdi Ashtian Malayer |
| | 268 | Thermal Management for Zero-Gravity Applications using PCM-based Plate-Fin Heatsink | Mohammed Azzam, **Mohammed O. Hamdan**, Maen Alkhader, Frank Gerner |
| | 380 | Performance of Alkaline Water Electrolysis Cell in Generating Hydrogen-Oxygen Mixture Gas under Atmospheric Pressure | Assem Ahmed, Majed Wardeh, Yahya Sheikh, **Abdelrahman Emam**, Mohammad O. Hamdan |
| | 408 | Reduction of Antimicrobial Formation on HVAC Water Cooling Towers using Chromium Oxide (Cr2O3) Coating | **F.R. Almushref**, Turky M. Aldossary |
| **13:00-14:00** | **LUNCH** | | |
| **14:00-14:30** | **POSTER PRESENTATION SESSION** | | |
| **SESSION-III: MODELLING & SIMULATION<br>Session Chair: Angela Slavova** | | | |
| 14:30-16:00 | 293 | Hydraulic Design, Numerical and Experimental Analysis of an API Overhung Pump Used in the Oil Industry | **Niloufar Sarabchi**, Behzad Karimzad Sharifi, Amir Soroureddin |
| | 185 | Application of Segmented and Prestressed Supporting Structures in Bridge Crane Systems: Potentials and Challenges | Jan Oellerich, Steffen Bolender, **Keno Jann Büscher** |
| | 250 | Defining Artificial Neural Network Hyperparameters for Forecasting Nonstationary Demand of Spare Parts | Awadh Al-Sheheimi, **Nasr Al-Hinai**, Mahmoud M.M. Alsafy, Hakan Gültekin |
| | 254 | Jounce Bumper Modelling Using Finite Element Analysis | **Mohammed Elmahdi Elgack**, Haret Hossoon, Omar Ghannam, Hussien Hussien |
| | 290 | Dynamic stability response in micro-beams assuming porosity based on numerical solution | Ahmad Farrokhian, **Reza Kolahchi** |
| | 292 | Computing of Nano Holes in Piezoelectric Materials | **Angela Slavova**, Ventsislav Ignatov |
| | 393 | Unrelated Parallel Machine Scheduling with Sequence and Machine Dependent Setup Times and Resource Constraints | Hakan Gültekin, **Nasr Al-Hinai** |
| | 411 | Static Configurations of Clamped Hybrid Bistable Symmetric Laminates | **Sara Hijazi**, Samir Emam |
| **16:00-16:20** | **COFFEE BREAK-II** | | |
| **SESSION-IV: CONTROL & FLUID DYNAMICS<br>Session Chair: Primoz Podrzaj** | | | |
| 16:20-17:45 | 209 | Intelligent systems for modern combine harvesters | Antanas Juostas, Eglė Jotautienė, **Gražvydas Juodišius** |
| | 305 | Matlab based synthesis of a PID controlled magnetic levitation system | **Primoz Podrzaj**, Igor Reznichenko, Tomaz Pozrl, Marjan Jenko, Drago Bracun, Dominik Kozjek |
| | 342 | Control Oriented Model of the Throttle Valve for Pumping Applications | **Levon Gevorkov**, José Luis Domínguez-García |
| | 403 | Soft Actor Critic Swing Up of a Real Inverted Pendulum on a Cart | **Raniero Humberto Calderon** |
| | 148 | Modeling Footprint Profiles for Different Drop-Substrate Pairs by the Lagrangian Particle Finite Element Method | **Elaf N. Mahrous** |
| | 191 | CFD Effect of Propellers Interference on the Thrust Variation in the Proximity of Fixed and Horizontal Moving Obstacle | **Charbel Hage**, Tonino Sophy, El-Hassane Aglzim |
| | 253 | UAV's enhanced data collection for heterogeneous wireless sensor networks | Kamel Barka, **Lyamine Guezouli**, Assem Rezki |

| POSTER PRESENTATIONS | | |
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| **120** | AI-Based Self-Sufficient System for Optimizing Gardening Conditions | **Dina Alshaibi**, Hind Alrashed, Marwah Bakoor, Dr.Thangam Palaniswamy |
| **146** | Development of Mechanical Engineers Skills for an Emerging Electric Vehicles Industry | Mohamed Rady, Mohamed Darwish, Maysam Abbod, **Eydhah Almatrafi**, Chun Sing Lai |
| **163** | Study on Mechanical Properties of Polyethylene/CNT Nanocomposites: Experimental, FEM and MD | **R.T. Tebeta**, D.M. Madyira, A.M. Fattahi, H.M. Ngwangwa |
| **176** | Experimental investigation of the elastic properties of PE/CNT nanocomposites | **R.T. Tebeta**, A.M. Fattahi, D.M. Madyira, H.M. Ngwangwa |
| **186** | Experimental And Theoretical Study on The Impact Strength and Hardness Properties Of HDPE/SWCNTs Nanocomposites | **R.T. Tebeta**, D.M. Madyira, A.M. Fattahi, H.M. Ngwangwa |
| **192** | Plastic Deformation Analysis of a Heat Treated Vibrating Screen Bracket | **Mathapelo Sekwai**, Daniel M. Madyira, Gert A. Oosthuizen |
| **194** | Plasticity Deformation Displacement Models for Metal Plates-A Review | **Mathapelo Sekwai**, Daniel M. Madyira, Gert A. Oosthuizen |
| **230** | Adaptive Attitude Control of Quadrotors with Saturated Inputs and Deferred State Constraints | **Jeng-Tze Huang**, Yu-Wei Jiang |
| **261** | Optimization of Cylindric Blades for Wind Turbine Based on Magnus Effect | Aleksandr Lukin, Galina Demidova, Dmitry Lukichev, Nikolai Poliakov, **Alecksey Anuchin** |
| **357** | A comparative assessment of R404A and R448 Refrigerant in a Commercial Set-up | **Dreepaul Raj Kumar**, Sreekissoon Bhamini |
| **396** | Stabilization of Inverter Losses in a Traction Drive of Electric Vehicle | Yousef Ali, Maxim Lashkevich, Dmitry Aliamkin, Evgeniy Stolyarov, Egor Kulik, **Alecksey Anuchin** |
| **414** | Advanced Modelling of ATF Chromium-Coated Zr-Based Cladding High Temperature Oxidation | **Alexander Vasiliev** |