



PROGRAMME BOOK (Physical sessions)

**2. INTERDISCIPLINARY CONFERENCE
ON
MECHANICS, COMPUTERS AND ELECTRICS**

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**06 OCTOBER 2022 Thursday
(PHYSICAL PARTICIPATION)**

Opening Session Hall A

10:00-10:10 Welcome Talk of Chairman, Prof. Dr. Erol Kurt

KEYNOTE SESSION 1 Hall A

Chairman: Prof. Dr. Erol KURT - Gazi University, Turkey

10:10-10:40 **Artificial Intelligence for Wind Turbine Condition Monitoring and Structural Health Monitoring**
Assoc. Prof. Dr. Yolanda Vidal Universitat Politècnica de Catalunya, Spain

10:40-11:10 **Neuroscience Inspiration for Biological and Electrical Space Microgrids**
Prof. Dr. Josep M. Guerrero Aalborg University, Denmark

11:10 – 11:30 COFFEE BREAK

Hall A Paralel Session 1 Computer Science & Informatics

Chairman: Athanasios Kiourtis

11:30-13:15	ID5 A Fully Automated and Foundry-Independent Quality Assurance Platform for Robust Process Design Kits	A. Datsuk , P. Ostrovskyy, F. Vater, C. Wieden
	ID9 A New Sorting Algorithm for Integer Values (Array Sorting Algorithm)	Hesham N. Elmahdy
	ID69 Intrusion Detection System for Cloud using Ensemble Learning Techniques	Maha Al-Sharif, Anas Bushnag
	ID93 Extension of the Linear Discriminant Analysis with Shape Restricted Features	Yaoguo Xie, Geng Deng , Xindong Wang, Ken Fu
	ID130 A System Dynamics Model For Credit Risk Modelling And Simulation: The Case Of Licensed Credit Reference Bureaus In Kenya	Lucy Mburu , Florence Kanyambu
	ID131 Identity Management and its Role in Healthcare Information Systems: A Literature Review	Athanasios Kiourtis , T. Giannetsos, Sofia-Anna Menesidou, Argyro Mavrogiorgou, C. Symvoulidis, Alessio Graziani, Spyridon Kleftakis, Konstantinos Mavrogiorgos, Nikolaos Zafeiropoulos, Christos-Alexandros Gkolias, Dimosthenis Kyriazis
	ID166 Machine learning in service of nephrology patients'mortality rate assessment	Nevena Radović , Vladimir Prelević, Milena Erceg
	ID189 Conceptual Design And Bio-Inspired Control of a New Surgical Soft Robotic Gripper	Narek Zakaryan , Mikayel Harutyunyan, Yuri Sargsyan

Hall B Paralel Session 2 Mechanics & Material Science**Session Chair: Dirk Herbert Hübner**

11:30-13:15	ID26 Combining Fictitious Stress Method and Displacement Discontinuity Method in Solving Crack Problems	Bahattin Kimeñçe
	ID64 Effect of ECR-glass/TiO ₂ on the mechanical, dielectric and electrical properties of polyimide nanocomposites for insulation application using spark plasma sintering	Victor E Ogbonna , Patricia Popoola, Olawale Popoola
	ID133 Modelling and Optimization of Residual Stress Induction on Laser-worked X12Cr Turbine Blades	Festus .O. Fameso , Dawood Desai, Schalk Kok, Dylan Armfield, Mark Newby
	ID184 Thermal modelling of powder-based additive manufacturing processes using the discrete element method	Reda Lakraimi, Hamid Abouchadi, Mourad Taha Janan , Mohamed Bounouib, Hind Benakrach
	ID186 Numerical Investigations Applied to Chemical Reaction-Diffusion Cycles Induced by Temperature Gradients	Mohammed Loukili , Raphael Plasson, Ludovic Jullien
	ID215 Investigation and optimization of a three stage intercooled piston compressor for an energy storage system with pressurized air	Sebastian Grün, Dirk H. Hübner , Harald H. Ortwig, Frank U. Rückert
	ID221 Development of a physical building model for indoor temperature prediction and HVAC system anomaly detection	Darko Palaić , Ivan Štajduhar, Sandi Ljubić, Iva Matetić, Igor Wolf

Hall C Paralel Session 3 Electrical Engineering**Session Chair: Jose Matas**

11:30-13:15	ID27 LTI Modeling of Advanced Three-phase PLLs	Saeed Golestan , Ali Akhavan, Abdullah M. Abusorrah, Sultan Alghamdi, Juan C. Vasquez, Josep M. Guerrero
	ID50 Stability-Based Analysis of Parallel Voltage-Controlled Inverters in Asymmetrical Conditions	Ali Akhavan , Saeed Golestan, Juan C. Vasquez, Josep M. Guerrero, Muhyaddin J. Rawa, Ahmad H. Milyani
	ID87 Hierarchical Power Flow Voltage Assessment of a Microgrid Cluster in Interconnected Operation Mode	Gibran David Agundis Tinajero , Juan C. Vasquez, Josep M. Guerrero
	ID101 Electrical Characterization of Partially Corroded Grounding Resistive-Electrodes under Fault Condition	Gregorio Denche , Eduardo Faleiro, Gabriel Asensio, Jorge Moreno
	ID108 Evolutionary and Swarm Intelligence in Optimal Gain Tuning for Dynamic Speed Control of SPMSM	Muhammad Usama , Umar Afzaal, Jaehong Kim
	ID110 Energy Density and Thermal Stability Evaluation of Polymer Nanocomposites for Dielectric Capacitor	Uwa O. Uyor , Patricia A. Popoola, Olawale M. Popoola, Dada Modupeola

	ID191 Feasibility Analysis and Optimal Planning of Minigrid Clusters in Ethiopia	Ying Wu, Sanjay Chaudhary , Jorge De La Cruz, Juan C. Vasquez, Josep M. Guerrero, Baseem Khan, Endeshaw Solomon Bayu, Yiheyis Eshetu
	ID211 Harmonic-Based Fault detection algorithm for Microgrids	Wael Al Hanaineh, Jose Matas, Jorge. Elmariachet , Josep.M. Guerrero
	ID504 Comparison between different droop based control techniques and a virtual control oscillator	Carlos Gustavo C. Branco , Jordi El Mariachet Carreño, Francisco Kleber Lima, Jose Matas, Josep M. Guerrero, Mingshen Li

13:15- 14:00 BREAK

Hall A Paralel Session 4 Mechanical Engineering & Material Science
Session Chair: Fouzi Harrou

14:00- 16:00	ID224 Computation of Mechanical Properties of Earthen Matrix Reinforced by Straw Fibers using 3D Modeling	Soukaina Regragui, Mohammed Bousfia, Fatima-Ezzahra El Mabchour, Mourad Taha Janan , Mohamed Aboussaleh, El Moukhtar Zemmouri
	ID412 Low-Cost UV-Vis Spectrophotometer for The Detention Cadmium Ions in Cocoa Crops	Rafael A. Núñez R., Carlos I. Nova P., Carlos L. Corzo R. , Daniel A. Velasco C., Jhonny M. Ceron C., Daniel A. Amaya, Marianny Y. Combariza, Cristian Blanco T.
	ID414 Machine Learning Methods For Predicting Mechanical Behavior of Aluminum Alloys	Abdelhakim Dorbane, Fouzi Harrou , Ying Sun
	ID417 A robot That is Always Ready for Safe Physical Interactions	Huthaifa Ahmad , Yutaka Nakamura
	ID422 Unmanned Aerial Vehicles Precision Landing on A Moving Platform Using Image Matrix Segmentation Method	Muhammad Farris , Muhammad Badri MHD Noor, Saaidal Razalli Azzuhri, Norlida Buniyami, Nik Muhammad Izwan Nik Mohd kamel, Ahmad Aliff A S Ahmad Shariffuddin, Fakhrol Azran Nawi
	ID433 performance Analysis of Artificial Intelligence-Based Back Focal Plane Imaging Microscopy for Refractive Index Measurement	Suejit Pechprasarn , Kitsada Thadson
	ID453 A Model-Based Evaluation of Wave Collision Effects on The Multi-Objective Optimization of Hybrid Ships Sizing	Saman Nasiri , Henk Polinder
	ID459 Electromagnetic Wave Transmission Through a Concrete Sandwich Plate with The Addition of Multi-Walled Carbon Nanotubes	Vanja Mandrić, Ivana Miličević, Slavko Rupčić, Ivan Vrdoljak , Ismail Baxhaku, Stanko Čolak
ID471 On-board Micro Wind Turbine for Airborne Wind Energy with Tethered Wings	Leonardo Ferreira Pacheco Malta Martins , Alexandre Trofino Neto, Marcelo De Lellis Costa de Oliveira	

Hall B Paralel Session 5 Electrical Engineering
Session Chair: Daniel Ioan

14:00- 16:00	ID233 Converter for PV Systems with Medium-Frequency AC-Link and Storage Support	Manuel A. Barrios , Hussein Abubakr, Víctor Cárdenas, Homero Miranda, Juan C. Vasquez, Josep M. Guerrero
	ID237 Performance Assessment of Benban Solar Park and Zafarana Wind Farms on The Egyptian Transmission System	Hussein Abubakr , Manuel A. Barrios, Sultan Alghamdi, Ahmad H. Milyani, AbderezakLashab, Juan C. Vasquez, Josep M. Guerrero
	ID308 Adaptive Control as a Hierarchical System	Hussein Abubakr , Abderezak Lashab, Mohamed Yaqoob, Yunus Yalman, Juan C. Vasquez, Josep M. Guerrero
	ID343 A Comparison Of Typical Backup Systems and Ad Hoc Microgrids Powered by Renewable Energy for Improving the Resilience of Local Hospital Loads	Majid Ali , Yajuan Guan, Juan C. Vasquez, Josep M. Guerrero
	ID364 Improved Application of Wavelet Transform in Protection of Multi-Terminal HVDC Transmission Systems	Dehghan Marvasti, A. Mirzaei, M. Savaghebi
	ID379 Machine Learning to Predict Voter Model Opinions through Complex Network Structure	Aruane Mello Pineda , Caroline Lourenço Alves, Colm Connaughton, Francisco Aparecido Rodrigues
	ID387 Optimal Stochastic Day-Ahead Power Management of Hybrid AC-DC Microgrids	Mahshid Javidsharifi , Hamoun Pourroshanfekr Arabani, Tamas Kerekes, Dezso Sera, Josep M. Guerrero
	ID399 Modeling Networks with Multiphysics port-Hamiltonian Distributed Components	Daniel Loan
ID409 Adaptive Multi-Agent-Zonal Protection Scheme for AC Microgrids	Jorge De La Cruz , Eduardo Gomes-Luna, John E. Candelo, Juan C. Vasquez, Josep M. Guerrero	
Hall C Paralel Session 6 Computer Engineering & Informatics Session Chair: Diana Bratić		
14:00- 16:00	ID190 Genetic Programming-Based Automated Machine Learning Approach to Solve Regression Problems	Maialen Murua

	ID193 Business Value of IT Capabilities: Effects on South African Financial Institutions' Digital Transformation	Michael Makgale Modiba , Ray Kekwaletswe
	ID201 Inspection of The Classifying Performance of The Deepfake Voices by The Latest Text-to-Speech Models	Yuta Yanagi , Ryohei Orihara, Yasuyuki Tahara, Yuichi Sei, Tanel Alumäe, Akihiko Ohsuga
	ID244 PostScript Pixel Management in Computer Graphics	Nikolina Stanić Loknar , Diana Bratić, Tajana Koren Ivančević
	ID257 State Space Scalability to Enable Smart Ships with Statistical Physics and Multi-Agent Based Reinforcement Learning	Alexander Manohar , David J. Singer
	ID263 Multimodal Calibration - a Simple Approach for Radar, 2D Camera and ToF Camera Calibration inside a Vehicle Compartment	Lap Yan Chan , Luis Gustavo Tomal Ribas, Alessandro Zimmer, Ulrich Theodor Schwarz
	ID271 Optimized responsive web design with fractal geometry	Diana Bratić , Nikolina Stanić Loknar, Denis Jurečić
	ID272 Characterization and Early Awareness of Interference in GNSS L1/E1 Band using an Outlier Detection Algorithm	Hamid Kavousi Ghafi , Roman Lesjak, Günther Obertaxer, Michael Schönhuber, Alexander Falk, Holger Arthaber
	ID313 Prediction of Healthcare Insurance Costs	Shroog Albalawi, Lama Alshahrani, Nouf albalawi, Rawan Alharbi, A'aeshah Alhakamy
	ID332 The Probabilistic Programming Approach for Procurement and Production Planning in Recovery Time after a Pandemic	Sutrisno , Solikhin, Abdul Aziz, Purnawan Adi Wicaksono

16:00 – 16:20 COFFEE BREAK

Hall A Paralel Session 7 Electrical Engineering
Session Chair: Amir Basati

16:20-18:20	ID430 Implementing Deep Learning Models in Embedded Systems for Diagnosis Induction Machine	Kevin Barrera-Llangua , Ángel Sapena-Bañó, Javier Martínez-Román, Ruben Puche-Panadero
	ID447 Recursive Least Squares Estimation of Battery Charge Capacity and State of Charge	Saeid Bashash
	ID503 Floating Solar Photovoltaic (FSPV) is an Ideal Technology for Distributed Generation in Developing Countries: Pakistan Prospective	Majid Ali , Muhammad Mashhood, Hassan Zeb, Juan C. Vasquez, Josep M. Guerrero
	ID512 Real Time Estimation in Cyber Attacks Detection and Mitigation Framework for DC Microgrids	Amir Basati , Najmeh Bazmohammadi, Josep M. Guerrero, Juan C. Vasquez
	ID520 Potential and Electron Energy Pattern in a Circular Plasma Cell	Bekir Dursun , Erol Kurt
	ID405 Optimization Integrated Rule-Based Operational Algorithms for an Agricultural Microgrid	Mohammad Hossein Mokhtare, Ozan Keysan
	ID331 Generation of Electrical Energy through Human Traction on a Stationary Bicycle	Camilo Sandoval Rodriguez , Carlos Andrés Angulo Julio, Omar Lengerke, Arly Dario Rincon Quintero, Alvaro Javier Rodriguez Nieves, Maarja Alexandra Castellanos Carreño

Hall B Paralel Session 8 Mechanical Engineering & Material Science
Session Chair: Javier Gonzalo Ascanio Villabona

16:20-18:20	ID204 A Comparative Study of Multiple Regression, ANN and Response Surface Method for Machining Force	Chahrazed Hiba Mimoun, Kamel Haddouche, Souâd Makhfi
	ID463 Estimation of The Contact Points of A Three-Layer Material	Guillermo F. Umbricht, Diana Rubio , Domingo A. Tarzia
	ID501 Design and Analysis of a Highly Sensitive GeS-based SPR Biosensor for DNA Detection	Md. Saiful Islam , Abbas Z. Kouzani, Shekhar Mahmud, Nasra Al Sharji, George Chen
	ID509 Automatic Bone Segmentation in CBCT images	Gábor Dorogi, Péter Bodnár , Katalin Nagy
	ID464 Productivity and precision: An overview of technological advancements and their impact on some medical workflows	Amr Mady , Samir El-Seoud
ID334 Vortex Breakdown in Discharge Cone of the Francis Turbine	Tahir Yavuz , Deniz S. Semerci	

Hall C Paralel Session 9 Computer Engineering & Informatics
Session Chair: Othman Smadi

16:20-18:20	ID340 COVID-19 Affected Students' Achievement in Higher Education Using Classification and Feature Selection Techniques	Kanakarn Phanniphong, Wongpanya S. Nuankaew, Patchara Nasa-Ngium, Pratya Nuankaew
	ID386 BLE Mesh using CODED PHY	Javier Silvestre-Blanes , Juan Carlos García Ortiz, Víctor M. Sempere-Payá, David Cuesta Frau
	ID458 Mapping Researcher Activity based on Publication Data by means of Transformers	Zineddine Bettouche , Andreas Fischer
	ID470 In vitro Assessment of Mechanical Heart Valve Performance in Concomitant Presence of Discrete Subaortic Stenosis Using Particle Image Velocimetry System	Othman Smadi , Baha Al-Deen El-khader
	ID 495 Impact of Lexical Complexity and Text Readability on Type of MT Errors in The Context of Inflectional Languages	Ľubomír Benko, Dasa Munkova , Michal Munk

18.20 CLOSING SESSION

GALA DINNER

Date: **6 October 2022, Thursday**

Time: **19.30 (GMT+2)**

Gala dinner will be in **Hotel SB Diagonal Zero Barcelona** (300 m from the conference venue)

Address: Plaça Llevant, s/n 08019 Barcelona, Spain

Map link: <https://g.page/hotel-sb-diagonal-zero>