Program TEchMA 2022, 27th May 2022

OPENING SESSION	**TEMA Director António Bastos and DEM Director Robertt Valente**		**9:15**
Sustainable Manufacturing Solutions – José Grácio Auditorium			
Manufacturing processes & Simulation	**Session I (Victor Costa and Fábio Fernandes)**		**09:30**
	Machinability of functional femoral component obtained by EBM in Ti-6Al-4V alloy	António Festas	
	Generalized Fault Trees: A data-driven methodology for reliability analysis	Pedro Nunes	
	A nonlinear topology-based optimization approach for the design of a heterogeneous mechanical test	Mafalda Gonçalves	
	Influence of fused filament fabrication parameters on the morphing ability of polylactic acid (PLA)-based materials	Mylene Cadete	
	On the selection of constitutive models for realistic numerical simulations	Mariana Conde	
	Prediction of mechanical properties of parts produced from reprocessed thermoplastics within an additive manufacturing framework	Tiago E. P. Gomes	
	Generative design to model metamaterial devices using reprocessed plastics	Laura Prior	
	Numerical study on the texture evolution of asymmetrically rolled aluminum alloy sheets	Ana Graça	
	Laser texturing and numerical simulation of the heat transfer fluids for Cr2AlC MAX phase	J. Mesquita-Guimarães	
	Characterization and functional properties of carbon nanotube reinforced thermoplastic via fused filament fabrication	Yiyun Wu	
	Coffee Break		**10:50**
Manufacturing processes & Simulation	**Session II (Ricardo Sousa and Pedro Prates)**		**11:20**
	Automatic image processing routine for extracting geometric features of Ti-6Al-7Nb alloy chips	Silvia Carvalho	
	Multiscale Modelling of the Thermoelastic Behaviour of Additive-Manufactured Alumina-Zirconia Ceramics	J. Pinho-da-Cruz	
	Optimization strategies towards quality improvement of family injection moulded parts	Tatiana V. Zhiltsova	
	Process parametrs optimization of LMD based on numerical simulation and mathematical modeling	Mehran Mouziraji	
	Intelligent Control System applied to laser transmission welding Mechanical Engineering Masters Degree Thesis	Pedro Martins	
	Buildings Operational Performance Analysis Evidence-based calibration with uncertainty and sensitivity analysis	Nelson Martins	
	Constitutive models and statistical analysis of the short-term tensile response of geosynthetics after damage	Giovani Lombardi	
	Experimental study on asymmetrical rolling of aluminum alloys	Jesús Yánez	
	Effects of heat treatment on conventional and asymmetrical rolling of aluminum alloys	Diogo Lopes	
	Lunch Break		**12:40**
Technologies for the Wellbeing – José Grácio Auditorium			
Multiscale technologies and devices for medicine, environment and energy	**Session III (Gil Gonçalves and Joana Guimarães)**		**14:00**
	Self-adaptive instrumented electromagnetic generator	Pedro M. R. Carneiro	
	Capacitive detection of bone-implant aseptic loosening for instrumented implants	Inês Peres	
	Controlled 3D electrospinning of aligned 3D matrices	Ângela Semitela	
	3D anisotropic scaffolds for tissue regeneration	Joana P.M. Sousa	
	NeuroStimSpinal, a step forward the spinal cord injury repair	Daniela M. da Silva	
	Engineering dynamic microenvironments in tumor models Tumor-on-a-Chip (ToC)	João F. Gil	
	Numerical modelling of the female head-neck system	Gustavo P. Carmo	
	Session IV (Francisco Brito and Francisco Loureiro)		**15:00**
	Artificial Neural Network Modelling of Solar Thermal Hybrid Façade- Experimental Results	Luis Martins	
	Automatic code generation for embedded model predictive control: application to a water heater	André Quintã	
	Economic analysis of the contribution of wind energy with storage through batteries in the energy system of Cabo Verde	Jorge Mendes Tavares	
	Integrating solar energy and Phase Change Materials for increased autonomy and reduced operating costs in chest freezers	Fernando Neto	
	Adsorption technologies for heating or/and cooling	João M. S. Dias	
	On the refrigerant compressor suction conditions From the dry to the wet suction	Francisco Bispo Lamas	
	Coffee Break		**15:50**
Multiscale technologies and devices for medicine, environment and energy	**Session V (Rui Moreira and Sérgio Tavares)**		**16:20**
	Electrochemical reactors for sustainable ammonia production: Development of a new category of materials with enhanced electrocatalytic activity	Francisco J. A. Loureiro	
	Modeling the performance of Phase Change Materials for Cold Energy Storage: Two different approaches CFD Numerical Simulation and Thermal-Electrical Analogy supported by Experimental Tests	Daniel Marques	
	Improving the Sustainability of Heavy-Duty Transport through Enhanced Thermoelectric Generators	Francisco P. Brito	
	Reversible electrodialysis for salinity gradient power Harvesting a non-intermittent clean renewable source	Eduardo Durana	
	Optimising anodes for high temperature electrolysis: A misfit-layered structure as a highly promising anode for solid oxide electrolysis cells	Allan J. M. Araújo	
	Predictive control strategies to improve temperature stabilization of tankless water heaters	Cheila Conceição	
	CLOSING SESSION – José Grácio Auditorium		**17:30**
Sustainable Manufacturing Solutions – Room 22.3.21			
Manufacturing for Circular Economy	**Session VI (Vitor Neto and Tatiana Zhiltsova)**		**14:00**
	Sustainable and Eco-friendly Cork Composites in Aerospace Engineering	Selim Gürgen	
	Classifying False-Rejections of Manufacturing Processes: A multiclass classification approach for rejection analysis in unbalanced manufacturing data	Diogo Costa	
	Development of sustainable visual communication boards based on circular economy principles and environmental performance evaluation	Carlos M. Correia	
	Intelligent sustainable plastic product design through machine learning and DfX	Gonçalo Antunes	
	Influence of printing parameters on extrusion-based additive manufacturing of porcelain paste	Nazanin Sabet	
	Life Cycle Analysis of a plastic toilet cistern tradition processing vs. recycled processing	Sofia B. Rocha	
	Improving Energy Efficiency and Corrosion Resistance during Sealing of Anodized Aluminium	Stanley Ofoegbu	
Nanoengineering & Bio-inspired manufacturing	Plastic waste as optimum feedstock for CD-based anticounterfeit tracers	Raúl Simões	
Technologies for the Wellbeing – Room 22.3.21			
Innovative technologies for Smart Cities	**Session VII (Paulo Fernandes and Jorge Bandeira)**		**15:00**
	Head Protection for MicromobilityHow Design can minimize severe head injuries	Miguel Mingote	
	Towards interpretable Machine Learning Hydraulic Simulation Models A Shap Values analysis application	Catarina G. Ferreira	
	Towards energy sustainability and cost reduction of water supply systems through operational optimization methodologies: A comparative study of problem formulations	Marlene Brás	
	Integrating the water-energy nexus in water supply systems optimization	Ana Reis	
	Cork-STF composites for crashworthiness applications	Gabriel F. Serra	
	Combining Agent-Based Modeling and Life Cycle Assessment for Evaluating Shared, Automated, and Electric Mobility Systems: A Methodological Approach	Mariana Vilaça	
	Coffee Break		**15:50**
Innovative technologies for Smart Cities	**Session VIII (Gil Campos and Eloísa Macedo)**		**16:20**
	Study on Noise and Exhaust Emissions Modelling: Kinematic-Variables Impact and Critical Hotspots	Antonio Pascale	
	Reliability Analysis of a Driving Simulator to Reproduce Vehicle Dynamics from a Microscopic Point of View	Beatriz Fernandes	
	Energetic and environmental analysis and efficiency optimisation of a public transport corridor	André Vasconcelos	
	Clustering driver behaviour eco-safe performance based on driving simulator experiments	Eloisa Macedo	
	Urban mobility environmental effects during the COVID-19 pandemic in heterogeneous European cities	Alexandra Lopes	
	Remote Monitoring Platform for evaluating vehiclesparameters and road interactions	Ingrid Lopes	
	Emissions-related external costs in an intercity corridor	Carlos Sampaio	
	CLOSING SESSION – José Grácio Auditorium		**17:30**