Programme of EM2022

Author underlined → presenting author

Thursday 5 May 2022		
8:40	**EM 2022 Opening (Room B001)**	
	Session 1A – Additive manufacturing I (Chair: MF Vaz and JL Alves)	**Session 1B – Manufacturing equipment and maintenance (Chair: RDSG Campilho and FJG Silva)**
	Room B001	**Room B002**
9:00	Parametric calibration study of FFF printing with large diameter nozzle **(EM22_1)** DV Silva (ISEP, Portugal), L Santana, JL Alves, A Magalhães	Design of a spiral double-cutting machine for an automotive bowden cable assembly line **(EM22_31)** AFG Barbosa, RDSG Campilho (ISEP, Portugal), FJG Silva, IJ Sánchez-Arce
9:20	Effects of printing parameters on the quality of FFF printed parts with red PLA filaments from different suppliers **(EM22_2)** JP Ramalho (University of Porto, Portugal), L Santana, HT Idogava, JL Alves	Improving the efficiency of the bowden cable terminal injection process for the automotive industry **(EM22_32)** JLTA Pereira, RDSG Campilho (ISEP, Portugal), FJG Silva, IJ Sánchez-Arce
9:40	Feasibility analysis of robot-assisted processes for automated tolerance compensation by using additive manufacturing **(EM22_7)** M Fiedler (Volkswagen Aktiengesellschaft, Germany), H Meyer, F Fischer, K Droeder	Optimum design of life-capability qualified sampling plans based on accelerated Weibull-life testing data with failure censoring in modern manufacturing industry **(EM22_34)** TC Wang (Republic of China Air Force Academy, Taiwan), MH Shu
10:00	Evaluation of cellular structures with triply periodic minimal surfaces fabricated by additive manufacturing **(EM22_18)** A Oliveira, LG Reis, M Leite, F Alves, AM de Deus, M Sardinha, MF Vaz (University of Lisbon, Portugal)	Manufacturing and engineering of epoxy composites containing waste materials sourced from modernization of buildings: current state of knowledge and future perspectives **(EM22_49)** S Czarnecki (Wroclaw University of Science and Technology, Poland), J Nowak, L Sadowski
10:20	Additive manufacturing of a novel multi-material WC-Co/316 steel cutting tool **(EM22_30)** B Guimarães (University of Minho, Portugal), CM Fernandes, D Figueiredo, FS Silva, G Miranda	SMED applied to tire calibration procedures **(EM22_26)** V Santos, VFC Sousa, FJG Silva (ISEP, Portugal), JCO Matias, RDFS Costa, AG Pinto, RDSG Campilho
10:40-11:00	**COFFEE BREAK**	
	Session 2A – Forming I (Chair: PAF Martins and D Ravi Kumar)	**Session 2B – Additive manufacturing II (Chair: F Walther and G Nicoletto)**
	Room B001	**Room B002**
11:00	Analysis of the evolution of the Lankford coefficient in uniaxial	Role of residual stresses in the fatigue assessment of additively manufactured

	tensile tests and validation with grain structure analysis **(EM22_3)** M Lenzen (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), M Merklein	aluminum components **(EM22_39)** G Nicoletto (University of Parma, Italy), F Uriati, E Riva
11:20	Effect of elevated tool temperatures on the properties of high-strength aluminum alloys during tailored quench forming (TQF) **(EM22_5)** N Rigas (Friedrich- Alexander-Universität Erlangen-Nürnberg, Germany), M Merklein	Enhanced assessment of the fatigue behavior and damage tolerance of additively manufactured metals and components **(EM22_40)** M Awd, D Kotzem, F Stern, J Tenkamp, F Walther (TU Dortmund University, Germany)
11:40	Residual effects of ultrasonic assistance in metal forming **(EM22_6)** M Jäckisch (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), M Merklein	Influence of fabrication equipment on surface quality, mechanical properties, and fatigue performance of L-PBF Inconel 718 **(EM22_41)** F Uriati (University of Parma, Italy), G Nicoletto, L Trombi
12:00	Improvement of material flow in tube hydroforming by advanced sealing methods **(EM22_10)** MM Kasaei (INEGI, Portugal), H Moslemi Naeini, B Abbaszadeh, SJ Hashemi, LFM da Silva	Design management and advanced technologies in the development and production of modern recreational crafts **(EM22_42)** V Carneiro (University of Porto, Portugal), F Cálão, JL Alves, A Barata da Rocha
12:20	Groove stiffening of sheets by single point incremental forming: Experimental and numerical investigation **(EM22_14)** VAM Cristino, JPM Pragana, IMF Bragança, CMA Silva, PAF Martins (University of Lisbon, Portugal)	Residual stress and distortion control in wire-arc additive manufacturing process through novel modular substrate **(EM22_43)** N Vishwanath (Indian Institute of Technology Hyderabad, India), S Suryakumar
12:40	Numerical simulation of sheet metal forming of an Al-Mg alloy incorporating plane strain properties in the yield criterion **(EM22_28)** V Prakash, D Ravi Kumar (Indian Institute of Technology Delhi, India), M Lenzen, H Hagenah, M Merklein	Effect of substrate cooling on bead geometry and metallurgical properties of WAAM deposited Ni-super alloy component **(EM22_50)** P Kumar (Thapar Institute of Engineering and Technology, India), RKR Singh, SK Sharma
13:00-14:00	**LUNCH BREAK**	
	Session 3A – Joining I (Chair: RJC Carbas and R Beygi)	**Session 4A – Machining I (Chair: AMP de Jesus and JF Chatelain)**
	Room B001	**Room B002**
14:00	Shear-clinching of the high-strength aluminum alloy AA7075 with a laser-assisted short-term heat treatment **(EM22_4)** S Wiesenmayer (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), M Merklein	Multi objective optimization of burnishing process to eliminate heat treatment in reamer shank manufacturing with the help of Taguchi coupled principal component analysis (PCA) **(EM22_17)** NJ Varpe (University of Engineering and Management, Jaipur, India), R Tajane, U Gurnani, A Hamilton

14:20	Welding of high-strength steels in the automotive industry **(EM22_76)** T Węgrzyn (Silesian University of Technology, Poland), B Szczucka – Lasota, T Szymczak, B Łazarz, P Cybulko, A Jurek	Improving the cut surface quality by optimizing parameters in the fibre laser cutting process **(EM22_27)** I Amaral, VFC Sousa, RDFS Costa, FJG Silva (ISEP, Portugal), RDSG Campilho, AG Pinto
14:40	Techniques to reduce the delamination of composite adhesive joints **(EM22_8)** RJC Carbas (INEGI, Portugal), F Malbijar, EAS Marques, LFM da Silva	Surface finishing of metal additively-manufactured parts using rotational abrasive finishing process **(EM22_44)** A Azamigilan (Technical University of Catalonia-BarcelonaTech, Spain), R Jeres-Mesa, J Lluma, JA Travieso-Rodriguez
15:00	Development of joining processes for the assembly of short fibre reinforced polymeric components **(EM22_11)** EAS Marques (INEGI, Portugal), CSP Borges, LRR Silva, RJC Carbas, LFM da Silva	Experimental study on drilling of fibre metal laminates and delamination modelling through fracture mechanics **(EM22_58)** FC Marques, FGA Silva (INEGI, Portugal), TEF Silva, PAR Rosa, AT Marques, AMP Jesus
15:20	Strength and fatigue life assessment of different joining techniques in a real structure: A comparative study of welding and adhesive bonding **(EM22_13)** A Akhavan-Safar (INEGI, Portugal), J Antelo, RJC Carbas, EAS Marques, LFM da Silva, R Goyal, N Cuvillier, I Maus, Y Takahashi, J Sherwood	A comparison of specific cutting pressures estimation of various metallic alloys through experimental orthogonal cutting tests and turning **(EM22_59)** TEF Silva (INEGI, Portugal), FGA Silva, AMP Jesus
15:40	Evaluation of different routes for manufacturing of micro process devices **(EM22_20)** T Gietzelt (Karlsruher Institut für Technologie, Germany), T Wunsch	Effect of milling parameters on the surface quality of a flax fiber reinforced polymer composite **(EM22_64)** H Chafai, JF Chatelain (Ecole de Technologie Superieure, Canada)
16:00-16:20	**COFFEE BREAK**	
	Session 3B – Forming II (Chair: MM Kasaei and MB Silva)	**Session 4B – Additive manufacturing III and Machining II (Chair: EAS Marques and J Outeiro)**
	Room B001	**Room B002**
16:20	Investigation of deformation length in flexible roll forming **(EM22_15)** H Badparva, H Moslemi Naeini, MM Kasaei (INEGI, Portugal), Y Dadgar Asl, B Abbaszadeh, LFM da Silva	Mechanical assessment of PBF-EB manufactured IN718 lattice structures **(EM22_78)** D Kotzem (TU Dortmund University, Germany), F Walther
16:40	Process and parameters for laser assisted localized heat treatment in metal forming applications **(EM22_77)** R Pereira (Universidade do Minho, Portugal), N Peixinho, V Carneiro, S Costa, S Cortez, V Blanco	Functionally graded cellular cores of sandwich panels fabricated by additive manufacturing **(EM22_19)** BG Silva, F Alves, M Sardinha, LG Reis, M Leite, AM de Deus, MF Vaz (University of Lisbon, Portugal)

17:00	A novel robotic manipulator concept for managing the winding and extraction of wire coils **(EM22_23)** RDFS Costa, VFC Sousa, FJG Silva (ISEP, Portugal), RDSG Campilho, AG Pinto, RPC Soares	3D multi-material-selective-laser-melting: Technology, fabrication and prototypes **(EM22_71)** F Bartolomeu (University of Minho, Portugal), J Pires, A Marques, A Cunha, O Carvalho, M Gasik, FS Silva
17:20	Thin-walled tube material properties customization by local heat treatment **(EM22_63)** JPG Magrinho (University of Lisbon, Portugal), A Piccininni, MB Silva, G Palumbo	Machinability assessment of grade 300 AMed maraging steel through instrumented milling tests **(EM22_60)** TEF Silva, M Duro (INEGI, Portugal), A Gregório, FGA Silva, PAR Rosa, AMP Jesus
17:40	Modelling the work hardening behavior of metallic sheets submitted to tension–compression or simple shear reverse loadings **(EM22_66)** DJ Cruz (INEGI, Portugal), AFG Pereira, VM Simões, RL Amaral, AD Santos, MC Oliveira	Modelling and optimisation of machining of Ti6Al4V titanium alloy using Machine Learning and DoE methods **(EM22_72)** J Outeiro (University Burgundy Franche-Comté, France), W Cheng, F Chinesta, A Ammar
18:00	Deep-drawing of multilayer steel/polymer laminate for automotive lightweight design **(EM22_70)** J Domitner (Graz University of Technology, Austria), E Hodžić, P Auer, Z Silvayeh, C Sommitsch, M Kičin	Grinding wheel with on-line grinding force collecting **(EM22_73)** L Hu (Xi'an Jiaotong University, PR China), J Zha, Y Chen
19:00	**Poster session and RECEPTION**	
Machining		
Poster 1	Influence of machining cutting edge under the surface quality **(EM22_21)**	RP Zeilmann (University of Caxias do Sul, Brazil), JD Schenkel
Poster 2	Comparative study of the surface finish produced during the milling of XC55 and 42CD4 materials **(EM22_22)**	S Benchiheub (Badji Mokhtar Annaba University, Algeria)
Joining		
Poster 3	Analysis of joints between thin dissimilar sheets produced by FSW and subsequent rolling **(EM22_68)**	R Beygi (INEGI, Portugal), A Sonboli, A Nouri, LFM da Silva
Poster 4	Numerical and experimental study of laser welding procedure for joining fibre reinforced polymers **(EM22_69)**	LRR Silva (University of Porto, Portugal), EAS Marques, RJC Carbas, LFM da Silva
Poster 5	Joining of polymer and metal sheets by hole clinching **(EM22_9)**	MM Kasaei (INEGI, Portugal), EAS Marques, RJC Carbas, LFM da Silva
Poster 6	Solid state friction welding of tungsten and mild steel **(EM22_79)**	B Skowrońska, M Bober, P Kołodziejczak, M Baranowski, T Chmielewski (Warsaw University of Technology, Poland)
Additive manufacturing		
Poster 7	Data driven algorithms on the optimization of additive manufacturing processes **(EM22_75)**	A Baraati (INEGI, Portugal), DJ Cruz, MR Barbosa, AD Santos

Poster 8	Integration of self-joining capabilities on additively manufactured components **(EM22_12)**	EAS Marques (INEGI, Portugal), M Frascio, RJC Carbas, LFM da Silva
Forming		
Poster 9	Ductile fracture prediction of SS304 foil in micro-roll forming **(EM22_16)**	M Karimi Firouzjaei, H Moslemi Naeini, MM Kasaei (INEGI, Portugal), MJ Mirnia, LFM da Silva

Friday 6 May 2022	
	Session 5 – Molding and Casting (Chair: H Puga and D Ravi Kumar)
	Room B001
9:00	Increasing the sustainability of manufacturing processes in plastic injection: recovering out-of-service robots to eliminate manual assembly operations **(EM22_24)** RDFS Costa, VFC Sousa, FJG Silva (ISEP, Portugal), RDSG Campilho, AG Pinto, JPF Pereira
9:20	An innovative moulding method for anti-slipping shoe-soles **(EM22_46)** V Richhariya (University of Minho, Portugal), O Carvalho, A Tripathy, FS Silva
9:40	Optimisation of process parameters in ultrasonic assisted stir casting of AA6082/B4CP nanocomposite **(EM22_38)** S Prabhakar (Indian Institute of Technology Delhi, India), D Ravi Kumar, S Aravindan
10:00	Effect of different amounts of secondary phases on the duplex stainless steel in the fatigue life of casting components **(EM22_54)** AP Costa (University of Porto, Portugal), E Azinpour, AD Santos, AP Jesus, MRR Seabra, J Cesar Sá, LMM Ribeiro
10:20	Ultrassonic tool development for aluminium alloy treatment in die-casting process **(EM22_65)** H Puga (University of Minho, Portugal), D Soares, JC Teixeira, P Pião, F Santos
10:40-11:00	**COFFEE BREAK**
	Session 6 – Joining II (Chair: J Min and LFM da Silva)
	Room B001
11:00	Water absorption in adhesive joints: effect of the interface in joints with metallic and composite substrates **(EM22_25)** CSP Borges (INEGI, Portugal), A Akhavan-Safar, EAS Marques, RJC Carbas, C Ueffing, P Weissgraeber, LFM da Silva
11:20	Optimisation of an induction cure process for the manufacturing of adhesively bonded milling tools **(EM22_29)** PN Gomes (INEGI, Portugal), DS Correia, EAS Marques, RJC Carbas, PJC das Neves, LFM da Silva
11:40	Buttering of steel before friction stir welding for improving the joint strength of aluminium-steel joints: Fracture behaviour and interface characterization **(EM22_33)** R Beygi (INEGI, Portugal), RJC Carbas, A Queiros, EAS Marques, LFM da Silva
12:00	Numerical analysis of manufacturing and material-related influences in clinching processes **(EM22_48)** C Steinfelder (Technische Universität Dresden, Germany), A Brosius
12:20	Laser welding process of polymeric materials: State of the art **(EM22_67)** F Delzendehrooy (INEGI, Portugal), EAS Marques, RJC Carbas, LRR da Silva, LFM da Silva
12:40	Microstructures and mechanical properties of laser welded tailored blanks of Al-Si coated 22MnB5 press hardening steel **(EM22_53)** Q He (Tongji University, China), Z Hou, J Kong, L Deng, X Ma, J Min
13:00-14:00	**LUNCH BREAK**

	Session 7 – Additive manufacturing IV (Chair: MF Vaz and JL Alves)
	Room B001
14:00	Influence of build direction on surface quality, microstructure and fatigue of additively manufactured AlSi10Mg **(EM22_51)** R Konecna (University of Zilina, Slovak Republic), T Varmus, G Nicoletto, F Uriati
14:20	Coupled optical and thermal monitoring of thick-walled cylindrical components fabricated by Laser Metal Deposition **(EM22_52)** M Mazzarisi (Politecnico di Bari, Italy), F Palano, V Errico, A Angelastro, M Dassisti, SL Campanelli
14:40	A new methodology to manufacture biodegradable magnesium stents **(EM22_55)** V Lopes (University of Minho, Portugal), VH Carneiro, H Puga
15:00	Powder reusability in metal binder jetting process **(EM22_56)** P Bidare (University of Birmingham, UK), R Abdullah, A Jiménez, K Essa
15:20	Numerical analysis of the influence of solid-state phase transformations on the mechanical behavior of the Ti-6Al-4V alloy **(EM22_57)** CM Andrade (University of Coimbra, Portugal), DM Neto, MC Oliveira, JC Sá
15:40	High-cycle and ultra-high cycle behaviour of directed energy deposition Inconel 625 super alloy **(EM22_61)** FK Fiorentin, FG Silva, AMP de Jesus (University of Porto, Portugal)
16:00-16:20	**COFFEE BREAK**
	Session 8 – Forming III (Chair: AD Santos and PAF Martins)
	Room B001
16:20	Quantification of electro-plastic effect in electric pulse aided uniaxial tensile of Ti-6Al-4V **(EM22_35)** S Adabala, P Konka (Indian Institute of Technology Hyderabad, India), N Venkata Reddy
16:40	Component specific elastic cushion design to enhance accuracy with use of reconfigurable tools in stretch forming **(EM22_36)** S Cherukupally, P Konka (Indian Institute of Technology Hyderabad, India), N Venkata Reddy
17:00	Effect of laser surface texturing on friction in strip drawing of dual phase steel sheets **(EM22_37)** A Shrivastava (Indian Institute of Technology Delhi, India), D Ravi Kumar, G Manikandan, R K Verma
17:20	Mechanical characterization and fracture assessment of advanced steels processed with sheet metal forming through experimental and numerical protocols **(EM22_45)** E Azinpour (University of Porto, Portugal), M Jimenez Abarca, A Costa, A Santos, JC de Sá
17:40	Fracture forming limit determination of third generation advanced high strength steels applied in sheet metal forming **(EM22_47)** M Jimenez Abarca (INEGI, Portugal), R Amaral, AD Santos, D Cruz, JC de Sá
18:00	Formability limits by local buckling in thin-walled metal tubes **(EM22_62)** JPG Magrinho (University of Lisbon, Portugal), MB Silva, G Centeno, PAF Martins
20:00	**EM2022 BANQUET (Porto Caves)**