

Programme of MDA2024

Author underlined → presenting author

* Plenary lecture

Thursday 4 July 2024			
8:40	MDA 2024 Opening (Room A101, also called ‘Auditorium’)		
9:00*	No risk no progress - a quick tour focusing on materials and structures (MDA24_76) <u>PT de Castro</u> (University of Porto, Portugal)		
	Session 1A – Composites I (Chair: LFM da Silva, AJM Ferreira)	Session 1B – Metals I (Chair: A Rodríguez-Prieto, EAS Marques)	Session 1C – Design I (Chair: S Leen, PT de Castro)
	Room A101 (Auditorium)	Room B032	Room B035
9:40	Characterisation of composite laminates produced via material extrusion additive manufacturing (MDA24_135) <u>F Haile</u> (Northumbria University, UK), <u>AC Igwe</u> , <u>J Wambua</u> , <u>F Mwema</u> , <u>ET Akinlabi</u>	Machine learning assisted design of metal material extrusion for 2D mechanical metamaterials (MDA24_125) <u>D Gatões</u> (University of Coimbra, Portugal), <u>PF Rodrigues</u> , <u>D Neto</u> , <u>MT Vieira</u>	Global to local representative modelling for fretting wear-fatigue in submarine power cables for floating offshore wind (MDA24_113) <u>C Poon</u> , <u>RB Barrett</u> , <u>SB Leen</u> (University of Galway, UK)
10:00	Accumulative roll bonding of aluminum sheets reinforced with nano particles (MDA24_5) <u>S Mousa</u> (Jazan University, Saudi Arabia)	Development and optimization of high temperature creep and oxidation resistant Fe-Al-Cr-based ODS nanocomposite (MDA24_33) <u>P Dymáček</u> (Institute of Physics of Materials CAS, Czech Republic), <u>M Jarý</u> , <u>N Luptáková</u> , <u>D Bártková</u> , <u>Š Gamanov</u> , <u>L Kunčická</u> , <u>R Kocich</u> , <u>B Mašek</u> , <u>J Svoboda</u>	Experimental and numerical determination of strain and displacement fields on Brazilian disc (MDA24_109) <u>JE Ribeiro</u> (Instituto Politécnico de Bragança, Portugal), <u>J Rocha</u>
10:20	Optimizing the influence of axial load: Enhancing dynamic response of wrapped CFRP reinforced concrete columns under asymmetrical lateral impact loads (MDA24_22)	Development of reverse-bend testing for identification of sheet metal material hardening parameters using recurrent neural networks (MDA24_103) <u>DJ Cruz</u> (INEGI, Portugal), <u>MR Barbosa</u> , <u>AD Santos</u> , <u>RL Amaral</u> , <u>J Cesar de Sa</u>	Sustainable design of vehicle structures through tailored material and design (MDA24_87) <u>EAS Marques</u> (University of Porto, Portugal), <u>S Jalali</u> , <u>RJC Carbas</u> , <u>LFM da Silva</u>

	<u>KH Al-Bukhaiti</u> (Southwest Jiaotong University, China), L Yanhui, ZH Shichun		
10:40-11:00	COFFEE BREAK		
	Session 2A – Joining I (Chair: A Barroso, A Akhavan-Safar)	Session 2B – Design II (Chair: D Castagnetti, JL Alves)	Session 2C – Additive Manufacturing I (Chair: FM Mwema, ZC Silveira)
	Room A101 (Auditorium)	Room B032	Room B035
11:00	Hybrid composite with natural and synthetic fibers in the rehabilitation of reinforced concrete structures (MDA24_4) <u>I Ivanova</u> (University of Reims Champagne Ardennes, France), J Assih, C Diagana, I Titeux-Peth	Identification of Johnsons-Cook model parameters for human iliac-crest using inverse finite element analysis (MDA24_131) S Naveed Ul Meiraj, NA Jaseem Sajidh, <u>P Pandithevan</u> (Indian Institute of Information Technology Design and Manufacturing Kancheepuram, India)	Conceptual and preliminary design of a print head based on single micro-screw unit for polymeric powder feedstock (MDA24_47) DML Silva, GK Gushiken, A Grando, <u>ZC Silveira</u> (University of São Paulo, Brazil)
11:20	Microstructural characterisation of friction stirred Al/Ni-Fe hybrid in-situ composites (MDA24_10) L Magondo, MB Shongwe, ET Akinlabi, OT Johnson, SA Akinlabi, H Dong, KF Carter, T-C Jen, <u>RM Mahamood</u> (Northumbria University, UK)	Soft robotics based on thermal actuation (MDA24_45) S Wu, SJ Lee, <u>Y Zhu</u> (North Carolina State University, USA)	Thermal fluctuations on the corrosion behaviour of 17-4PH stainless steel alloys fabricated via material extrusion additive manufacturing technique (MDA24_114) <u>FM Mwema</u> (Northumbria University, UK), JM Wambua, MO Bodunrin, SA Akinlabi, ET Akinlabi, TC Jen
11:40	Ensuring reliability: The crucial role of adhesive characterization in bonded assemblies (MDA24_13) <u>A Akhavan-Safar</u> (INEGI, Portugal), EAS Marques, RJC Carbas, LFM da Silva	Design and conceptual solutions for industrial storage systems (MDA24_63) <u>A Bernardino</u> (University of Minho, Portugal), N Peixinho	Influence of design parameters on the compression characteristics of four-star metamaterial fabricated via fused filament fabrication (MDA24_115) <u>FM Mwema</u> (Northumbria University, UK), JM Wambua, SA Akinlabi, ET Akinlabi, TC Jen
12:00	Experimental study of joints using various reinforcement systems (MDA24_15)	Material challenges in ND inspection of nuclear spent fuel sealed containers (MDA24_91)	Nickel-titanium shape memory alloys parts produced by laser powder bed fusion – Applications, advantages and challenges (MDA24_96)

	MC Soler, CJ Parra Costa, <u>IM Belmonte</u> (Universidad Politécnica de Cartagena, Cartagena, Spain), FJ Benito Saorin	<u>D Agudo</u> (University of Vigo, Spain), E Casarejos, P García-Gil, S Suarez, JG Baldonado	J Vieira (University of Porto, Portugal), A Nogueira, JL Alves
12:20	Influence of strain rate on performance of curved CFRP joints with non-uniform adhesive thickness (MDA24_23) <u>RCJ Carbas</u> (INEGI, Portugal), VDC Pires, EAS Marques, LFM da Silva	Some aspects of formability analysis of sintered Al and Al-2WC preforms based on densification under hot upsetting (MDA24_57) <u>RK Ananthanarayanan</u> (The University of the South Pacific, Fiji), C Motufaga, J Vakabua, D Lingam	Development of an in-line monitoring system for measuring melt pressure and temperature in a 3D printer hot-end (MDA24_118) <u>DML Silva</u> (University of Sao Paulo, Brazil), ZC Silveira, JL Alves
12:40	Improving performance of riveted joints using non-circular hole geometries (MDA24_27) <u>A Barroso</u> (University of Seville, Spain), S Sánchez-Carmona	Experimental investigation of the use of nanoparticles as an additive in distilled water for improvement in tribological performance (MDA24_124) <u>M Anand</u> (Bournemouth University, UK), A Saeed, Z Khan	An innovative approach to optimize the 4th generation of stents (MDA24_119) <u>AM Sousa</u> (University of Coimbra, Portugal), AM Amaro, AP Piedade
13:00-14:00	LUNCH BREAK		
	Room A101 (Auditorium)		
14:00*	Additive manufacturing of cellular materials (MDA24_69) <u>MF Vaz</u> (University of Lisbon, Portugal)		
	Session 3A – Metals II (Chair: SB Leen, PT de Castro)	Session 3B – Polymers (Chair: AJ Brunner, RJC Carbas)	Session 3C – Composites II (Chair: AM Ferreira, EAS Marques)
	Room A101 (Auditorium)	Room B032	Room B035
14:40	Mechanical properties and joinability of the near-eutectic aluminium casting alloy AlSi12 (MDA24_73) <u>M Neuser</u> (Paderborn University, Germany), P-K Holtkamp, K-P Hoyer, F Kappe, M Bobbert, G Meschut, M Schaper	An experimental and statistical analysis of the creep failure mechanisms in an acrylic pressure-sensitive adhesive (MDA24_16) <u>BD Simões</u> (INEGI, Portugal), EAS Marques, RJC Carbas, S Maul, P Stihler, P Weißgraeber, LFM da Silva	Fracture investigation in the anisotropic structure of natural bamboo by considering the experimental analysis of the interlaminar shrinkage behaviour and the numerical method (MDA24_122) <u>R Ramful</u> (University of Mauritius, Réduit, Mauritius)

15:00	Advancements in mechanical properties of AL-Li alloys – a systematic literature review on secondary forming and heat treatment processes (MDA24_56) D Lingam, <u>RK Ananthanarayanan</u> (The University of the South Pacific, Fiji), AK Jeevanantham	Characterization of mechanical properties of commercial adhesives applied in the equestrian sector (MDA24_18) <u>CMC Ferreira</u> (INEGI, Portugal), VCMB Rodrigues, BD Simões, EAS Marques, RJC Carbas, LFM da Silva	Fabrication, mechanical and microstructure properties of Al-4Mg alloy reinforced granulated blast furnace slag particulate composites (MDA24_116) <u>K Sreedevi</u> (Andhra University, Visakhapatnam, India), K Ramji, MG Krishna
15:20	Insights into project InDrutec-E: Lightweight die casting for e-mobility (MDA24_80) <u>G Piazza</u> (German Aerospace Center, Germany), M Rohrer, E Beeh	Exploring the influence of strain rate, loading mode, and temperature on the fracture energy of polyurethane adhesives (MDA24_129) <u>M Ribas</u> (INEGI, Portugal), A Akhavan-Safar, RJC Carbas, EAS Marques, S Wenig, LFM da Silva	In-Vitro studies of magnesium composites for biomedical implants (MDA24_117) MG Krishna, BV Kumar, <u>M Vinitha</u> (Acharya Nagarjuna University, Guntur, India)
15:40	High pressure tube torsion back-extrusion for producing UFG thin-walled tubes (MDA24_85) <u>A Babaei</u> (Technical and Vocational University, Iran), H. Mazloubashiri	Mechanical characterization of innovative recyclable monomaterial films and laminates for food packaging (MDA24_48) <u>F Leccese</u> (University of Parma, Italy), A Pironi, F Moroni, R Guadagno, F Rimediotti, L Sullo	Hybrid functional materials by atomic and molecular layer deposition - Chemistry and selected applications (MDA24_123) <u>R Yerushalmi</u> (The Hebrew University of Jerusalem, Israel)
16:00-16:20	COFFEE BREAK		
	Session 4A – Joining II (Chair: A Spaggiari, S de Barros)	Session 4B – Composites III (Chair: F Musiari, F Moroni)	Session 4C – Surfaces and Coatings (Chair: A Piedade, A Rodríguez-Prieto)
	Room A101 (Auditorium)	Room B032	Room B035
16:20	Investigation of local heat treatment strategies for a multi-range capable rivet and the influence on joint formation and load-bearing capacity (MDA24_39)	Bio-based materials in the automotive industry: A pillar for sustainability (MDA24_21) LGL Fernandes, T Mosaner, I Cesarino, <u>AL Leao</u> (São Paulo State University, Brazil)	Investigation of tribological behavior of 3D printed PLA surfaces (MDA24_54) <u>F Elwasli</u> (University of Monastir, Tunisia), S Mzali, S Mezlini

	<u>P Holtkamp</u> (Paderborn University, Germany), <u>F Kappe</u> , <u>M Bobbert</u> , <u>G Meschut</u>		
16:40	Towards the development of a unified fatigue life prediction methodology (MDA24_42) <u>FC Sousa</u> (University of Porto, Portugal), <u>A Akhavan-Safar</u> , <u>LFM da Silva</u>	Study of hybrid composite joints with thin-ply-reinforced adherends under different loading condition (MDA24_121) <u>F Ramezani</u> (INEGI, Portugal), <u>RJC Carbas</u> , <u>EAS Marques</u> , <u>LFM da Silva</u>	Study of the surface roughness of microhybrid composite resins as a function of the immersion conditions (MDA24_51) <u>K Belhaj Salah</u> (University of Monastir, Tunisia), <u>S Jaafoura</u> , <u>F Elwasli</u> , <u>S Belhaj Salah</u> , <u>S Mezlini</u> , <u>S Boudegga</u>
17:00	Adhesive bonding technology in automotive battery pack manufacturing and dismantling: An overview (MDA24_49) <u>VC Rodrigues</u> (INEGI, Portugal), <u>M Kasaei</u> , <u>R Beygi</u> , <u>EAS Marques</u> , <u>RJC Carbas</u> , <u>LFM da Silva</u>	Definition, fabrication and testing of sandwich structures with novel TPMS-based cores (MDA24_59) <u>A Vasile</u> , <u>DM Constantinescu</u> , <u>IC Coropetchi</u> , <u>Şt Soroşan</u> , <u>DA Apostol</u> (National University for Science and Technology POLITEHNICA Bucharest, Romania)	A piezo elastomeric coating for a sensorized wheel (MDA24_35) <u>LN Nicolini</u> (University of Modena and Reggio Emilia, Italy), <u>DC Castagnetti</u>
17:20	Mechanical strength of adhesively bonded joint between additive manufactured and standard polymeric parts (MDA24_50) <u>A Spaggiari</u> (University of Modena and Reggio Emilia, Italy), <u>S Orlandini</u>	Altering the optical appearance of carbon reinforced polymers on an intrinsic level (MDA24_64) <u>L Haiden</u> (Montanuniversitaet Leoben, Austria), <u>M Feuchter</u> , <u>AJ Brunner</u> , <u>M Barbezat</u> , <u>G Pinter</u>	Structure and selected properties of coatings deposited by arc spraying under inert atmosphere containing in-situ fabricated Fe-Al intermetallic phases (MDA24_127) <u>P Kolodziejczak</u> (Warsaw University of Technology, Poland), <u>M Mober</u> , <u>T Chmielewski</u>
17:40	Characterization of bio-based polyurethane adhesives in zero-thickness bonds (MDA24_25) <u>Sh Jalali</u> (INEGI, Portugal), <u>EAS Marques</u> , <u>RJC Carbas</u> , <u>LFM da Silva</u>	The failure response of bio-inspired composites laminates subjected to compression after impact (MDA24_61) <u>NP Patel</u> (Pandit Deendayal Energy University, India)	Evolution of TiAlSi thin film coatings under varying target power in DC magnetron sputtering (MDA24_128) <u>JM Wambua</u> (Northumbria University, UK), <u>FM Mwema</u> , <u>G Zoppi</u> , <u>WL Woo</u> , <u>ET Akinlabi</u>

19:00	Poster session and RECEPTION	
Metals		
Poster 1	The theoretical and experimental analysis of nanobainite formation in a medium-Mn steel by the use of double-step heat treatment (MDA24_106)	<u>M Morawiec</u> (Silesian University of Technology, Poland), A Grajcar
Poster 2	Integrating artificial neural networks for analysis and predictive modeling of chip geometry in dry machining of aeronautical light alloys (MDA24_60)	<u>FJ Trujillo</u> (Universidad de Málaga, Spain), F Bañón, S Martín-Béjar, M Herrera, L Sevilla
Poster 3	Enhancing final hole quality through optimisation of orbital drilling parameters on UNS A92024 alloy (MDA24_79)	<u>F Bañón</u> (Universidad de Málaga, Spain), S Martín-Béjar, FJ Trujillo, C Bermudo, M Herrera, L Sevilla
Ceramics		
Poster 4	Preparation and characterization of natural dye-doped TiO ₂ nanoparticles: Applications for green photonics devices (MDA24_8)	<u>M Al-Hamadani</u> (University of Basrah, Iraq), H Al-Tameemi
Poster 5	Experimental investigation of the mechanical properties and performance enhancement of polyvinyl alcohol fiber-reinforced cementitious mortar: A Comprehensive investigation (MDA24_12)	<u>J Udebunu</u> (Wroclaw University of Science and Technology, Poland), H Abdolpour, Ł Sadowski
Polymers		
Poster 6	Raman spectroscopy and optoelectronic properties of green dye doped nanoparticles embedded polymer for sensing applications (MDA24_7)	<u>H Al-Tameemi</u> (University of Basrah, Iraq), M Al-Hamadani
Poster 7	Self-repairing polyurethanes: evolution and industrial applications (MDA24_66)	<u>C Solek</u> (UAM, Spain), A Rodríguez-Prieto
Poster 8	Cyclo-olefin polymer multi-material adhesive - Mechanical characterization, joint testing and numerical modelling (MDA24_77)	<u>VC Rodrigues</u> (INEGI, Portugal), RJC Carbas, EAS Marques, K Ejiri, A Klein, B Nelson, LFM da Silva
Poster 9	Static and cyclic creep response of PSAs: from characterization to prediction using an analytical approach (MDA24_17)	<u>BD Simões</u> (INEGI, Portugal), EMD Fernades, EAS Marques, RJC Carbas, S Maul, P Stihler, P Weißgraeber, LFM da Silva
Composites		
Poster 10	Improving the properties of cutting blades through apply of WC+5Co+TaC-NbC nanocrystalline composite material (MDA24_37)	<u>MJ Kupczyk</u> (Poznan University of Technology, Poland)

Poster 11	The use of the addition of Cr ₃ C ₂ in nanocrystalline sintered carbides to create a composite tool material with better operational properties (MDA24_38)	<u>MJ Kupczyk</u> (Poznan University of Technology, Poland)
Poster 12	Microstructure characterization of Ag–Cu and Ag–W metastable metal matrix composites prepared by bottom-up way (MDA24_40)	<u>A Strakosova</u> (Czech Academy of Sciences, Czech Republic), <u>F Průša</u> , <u>P Lejček</u>
Poster 13	Quercetin-loaded gelatin and chitosan electrospun fibers for skin reinnervation in chronic wounds (MDA24_71)	<u>C Correia</u> , <u>AF Afonso</u> , <u>C Henriques</u> , <u>JC Silva</u> , <u>T Vieira</u> (Nova University of Lisbon, Portugal)
Poster 14	Studying the high performance and sustainability of vitrimers and their composites intended to advanced engineering applications (MDA24_78)	<u>C Solek</u> (UAM, Spain), <u>A Rodríguez-Prieto</u> , <u>J Rodríguez-Hernández</u> , <u>AM Camacho</u>
Poster 15	Impact compressive properties of polyurethane foams with 3D continuous fibre reinforcement (MDA24_89)	<u>K Schäfer</u> (Chemnitz University of Technology, Germany), <u>D Nestler</u> , <u>L Kroll</u>
Poster 16	Vibration and buckling of composite structures using oscillatory radial basis functions (MDA24_3)	<u>AMA Neves</u> , <u>AJM Ferreira</u> (University of Porto, Portugal)
Additive manufacturing		
Poster 17	Kevlar/glass fiber reinforced nylon structures printed in 3D with various fiber introductions exhibit mechanical properties under different temperatures (MDA24_2)	<u>MA Albadrani</u> (Qassim University, Saudi Arabia)
Poster 18	Sustainable design of a component for the aerospace industry combining Additive Manufacturing and Topology Optimization (MDA24_36)	<u>J Crespo-Sánchez</u> (UNED, Spain), <u>S Fuentes</u> , <u>A Rodríguez-Prieto</u> , <u>AM Camacho</u>
Poster 19	Cementitious mortar formulation for extrusion-based additive manufacturing using mussel shells and pozzolanic materials to develop artificial reefs and enhance marine ecosystem (MDA24_98)	<u>IV Matus</u> (University of Porto, Portugal), <u>J Góis</u> , <u>P Vaz-Pires</u> , <u>JL Alves</u>
Poster 20	Investigating the energy absorption properties of TPU auxetic structures produced by additive manufacturing (MDA24_100)	<u>S Fuentes del Toro</u> (UC3M, Spain), <u>J Crespo-Sánchez</u> , <u>A Rodríguez-Prieto</u> , <u>AM Camacho</u>
Poster 21	Material extrusion: From powder to innovation (MDA24_126)	<u>C Batista</u> , <u>PF Rodrigues</u> , <u>D Gatões</u> , <u>G Oliveira</u> (University of Coimbra, Portugal), <u>B Alves</u> , <u>MT Vieira</u>
Poster 22	3D printed bigel: A novel delivery system for cannabidiol-rich hemp extract (MDA24_134)	<u>A Gościński</u> (Poznan University of Medical Sciences, Poland.), <u>F Kocaj</u> , <u>M Szymański</u> , <u>J Cielecka-Piontek</u>

Poster 23	Integrated lattice structures in additive manufacturing: Design, optimization, and experimental validation of compliant robotic grippers (MDA24_136)	<u>O Ulerich</u> (National University of Science and Technology Politehnica Bucharest, Romania), DA Prisecaru, S Cananau, M Stoica
Surfaces and Coatings		
Poster 24	Effect of structure ordering on the abrasive wear of Fe-Al (B2) type intermetallic coatings after D-gun spraying and high-temperature annealing (MDA24_132)	<u>C Senderowski</u> (Warsaw University of Technology, Poland), N Vigilianska, O Burlachenko, D Zasada
Joining		
Poster 25	Adhesives in veterinary medicine: a review (MDA24_19)	<u>CMC Ferreira</u> (INEGI, Portugal), BD Simões, EAS Marques, RJC Carbas, LFM da Silva
Poster 26	Effect of temperature on the strength hybrid composite joints (MDA24_24)	F Ramezani, <u>RCJ Carbas</u> (INEGI, Portugal), EAS Marques, LFM da Silva
Poster 27	A novel approach to reinforce wooden substrates with bio-adhesive for single lap joints (MDA24_26)	<u>Sh Jalali</u> (INEGI, Portugal), EAS Marques, RJC Carbas, LFM da Silva
Poster 28	Investigation on the geometric and material properties effects on the fatigue behaviour of single lap joints (MDA24_43)	<u>FC Sousa</u> (University of Porto, Portugal), A Akhavan-Safar, RJC Carbas, EAS Marques, R Goyal, J Jennings, LFM da Silva
Poster 29	Analyzing adhesive squeezing flow in manufacturing hybrid bolted/bonded joints (MDA24_14)	F Ricca, <u>A Akhavan-Safar</u> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
Poster 30	Comprehensive review of fatigue behaviour on highly deformable adhesives (MDA24_130)	<u>M Ribas</u> (INEGI, Portugal), A Akhavan-Safar, RJC Carbas, EAS Marques, LFM da Silva
Poster 31	Design of solid-state joints for high voltage battery application (MDA24_86)	<u>EAS Marques</u> (University of Porto, Portugal), F Moreira, L Peixoto, R Beygi, RJC Carbas, LFM da Silva
Poster 32	From nature to engineering: enhancing adhesive joint toughness with bio-inspired adherends under static four-point loading (MDA24_29)	<u>H Malekinejad</u> (INEGI, Portugal), RCJ Carbas, EAS Marques, LFM da Silva
Design		
Poster 33	Gold nanoparticles enhanced color stability in sweat glucose wearable colorimetric sensor based on automated microfluidic chip (MDA24_55)	<u>HG Dau</u> (Vietnam-Korea Institute of Science and Technology, Vietnam), MA Dang, Y Yukita, LTN Truong
Poster 34	Analysis of the displacement field along a surface crack with Moiré interferometry (MDA24_110)	<u>JE Ribeiro</u> (Instituto Politécnico de Bragança, Portugal), J Rocha

Poster 35	Development of a new testing system for mechanical characterization of weak snow layers (MDA24_120)	<u>EAS Marques</u> (University of Porto, Portugal), RJC Carbas, CM da Silva, AM Lopes, LFM da Silva
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Friday 5 July 2024		
	Room B032	
8:40*	Mechanical metamaterials for biomedical engineering (MDA24_75) <u>D Castagnetti</u> (University of Modena and Reggio Emilia, Italy)	
	Session 5A – Composites IV (Chair: LFM da Silva, D Castagnetti)	Session 5B – Additive Manufacturing II (Chair: PAF Martins, MF Vaz)
	Room B032	Room B035
9:20	A tetrahedral mechanical metamaterial with negative Poisson's ratio behavior (MDA24_30) <u>A Sorrentino</u> (University of Modena and Reggio Emilia, Italy), <u>D Castagnetti</u>	Study of the influence of the printing platform position on dimensional and geometrical quality of parts manufactured in alumina by Ceramic Vat Photopolymerization through Ultra Violet Laser (VPP-UVL/C) (MDA24_108) <u>S Peláez-Peláez</u> (University of León, Spain), <u>S Giganto</u> , <u>AI Fernández-Abia</u> , <u>J Barreiro</u> , <u>S Martínez-Pellitero</u>
9:40	A compact quasi-zero stiffness metamaterial (MDA24_52) <u>D Castagnetti</u> (University of Modena and Reggio Emilia, Italy), <u>N Bellini</u> , <u>A Sorrentino</u> , <u>L Nicolini</u>	Macro-scale finite element simulation of wire-arc additive manufacturing (MDA24_65) <u>JPM Pragana</u> , <u>RFV Sampaio</u> , <u>IMF Bragança</u> , <u>CMA Silva</u> , <u>CV Nielsen</u> , <u>PAF Martins</u> (University of Porto, Portugal)
10:00	Organic integration of 3D shell structures and TPMS lattices for lightweighting (MDA24_82) <u>M Giacalone</u> (University of Modena and Reggio-Emilia, Italy), <u>F Puglisi</u> , <u>S Mantovani</u>	Additive manufacturing in spine surgery for an innovative lumbar vertebral prosthesis with lattice structures topology (MDA24_67) <u>H Bennaceur</u> , <u>H Ameddah</u> (University of Batna 2, Algeria)
10:20	Buckling and post-buckling analysis of auxetic cellular structures (MDA24_107) <u>M BelhadjAmor</u> (University of Monastir, Tunisia), <u>M Ben Bettaieb</u> , <u>S Mezlini</u> , <u>F Abed-Meraim</u>	Challenges in additive manufacturing of tensegrity-inspired metamaterials – From theory to practice (MDA24_101) <u>A Al Sabouni-Zawadzka</u> (Warsaw University of Technology, Poland), <u>W Gilewski</u> , <u>A Zawadzki</u>
10:40-11:00	COFFEE BREAK	
	Session 6A – Composites V (Chair: E Casarejos, L Sadowski)	Session 6B – Joining III (Chair: RD Adams, C Sato)
	Room B032	Room B035
11:00	Some aspects of plastic deformation of metastable Cu-Ag metal-matrix composites (MDA24_41) <u>P Lejček</u> (Czech Academy of Sciences, Czech Republic), <u>A Strakosova</u> , <u>F Průša</u> , <u>V Paidar</u> , <u>J Svoboda</u>	Finite element modelling of cyclic plasticity and fatigue for welded offshore wind turbine support structures (MDA24_84) <u>H Badakhshian</u> (University of Galway, Ireland), <u>RA Barrett</u> , <u>SB Leen</u>
11:20	Fabrication and hydrogen separation performance of Pd-MXene composite membranes (MDA24_58)	Influence of filler material on microstructure, mechanical and ballistic properties of hybrid plasma-MAG

	<u>Z Wang</u> (Tomsk Polytechnic University, Tomsk, Russia), DG Krotkevich, EB Kashkarov	welded joints of Ramor 500 steel (MDA24_133) B Skowrońska, B Szulc, A Senator, K Makowski, <u>TM Chmielewski</u> (Warsaw University of Technology, Poland)
11:40	Acoustic flat lens based on chiral microstructures for elastic wave focusing and collimating (MDA24_62) <u>JY Sun</u> (KU Leuven, Belgium), D Chronopoulos	A new approach for solid-state welding of UFG copper by means of friction heat impulse (MDA24_93) <u>Ł Morawiński</u> (Warsaw University of Technology, Poland), C Jasiński, J Goliński, TM Chmielewski
12:00	Stab resistance of single and double phase STF-impregnated Kevlar® fabrics under unconfined test configuration (MDA24_31) <u>S Laifa</u> (Polytechnic Military School BP17, Algeria), DE Tria	Finite element modeling of joints with laser ablated serrated patterns of interlocking features (MDA24_99) <u>F Musiari</u> (University of Parma, Italy), F Moroni, M Gulino
12:20	The role of crosslinked freeze-dried natural scaffolds in macrophage polarization towards an anti-inflammatory phenotype (MDA24_72) AF Afonso, C Correia, C Henriques, JC Silva, <u>T Vieira</u> (Nova University of Lisbon, Portugal)	Properties of wedge wire bonded connection between a composite copper core aluminum shell wire and an 18650 cylindrical lithium-ion battery cell (MDA24_102) <u>K Bieliszczuk</u> (Warsaw University of Technology, Poland), T Chmielewski
12:40	Comparative analysis of direct search methods for composite material design optimization (MDA24_68) IC Coropetchi, DM Constantinescu, A Vasile, Șt Soroșan, <u>DA Apostol</u> (National University for Science and Technology POLITEHNICA Bucharest, Romania)	Cavitation in a soft adhesive generated by thermal stress (MDA24_112) <u>C Sato</u> (Tokyo Institute of Technology, Japan)
13:00-14:00	LUNCH BREAK	
	Room B032	
14:00*	Quantification of delamination resistance data of FRP composites and its limits (MDA24_70) <u>AJ Brunner</u> (Retired scientist, Switzerland)	
	Session 7A – Additive Manufacturing III (Chair: S Mezlini, A Rodríguez-Prieto)	Session 7B – Composites VI (Chair: D Chronopoulos, AJ Brunner)
	Room B032	Room B035
14:40	Development and implementation of continuous trajectories for 3D printing by variation of width filling of the extruded beads (MDA24_46) RH Dias, DMS Couto, HT Idogava, <u>ZC Silveira</u> (University of São Paulo, Brazil)	Mechanical performance of Portland cement mortars added with rigid polyurethane foam waste (MDA24_43) IL Rodríguez, JED Rosero, <u>JT Agredo</u> (Universidad Nacional de Colombia, Colombia)
15:00	Teaching design for AM to science materials engineering graduate students: Hands-on approach (MDA24_34)	Formulation and characterization of a natural bifiber-reinforced mortar in construction materials (MDA24_74)

	<u>JM Costa</u> (University of Porto, Portugal), <u>MF Vieira</u>	<u>S Pons Ribera</u> (CESI Ecole d'Ingénieurs, France), <u>S de Barros</u> , <u>R Hamzaoui</u> , <u>J Colin</u>
15:20	A novel approach for modifying aluminium powder EN AW-7075 with nanoparticles for additive manufacturing (MDA24_92) <u>M Dreyer</u> (Paderborn University, Germany), <u>F Hengsbach</u> , <u>K-P Hoyer</u> , <u>M Schaper</u>	Development and testing of timber-metal-hybrid materials for the side sill reinforcement of a battery electric vehicle (MDA24_83) <u>F Feser</u> , <u>D Heyner</u> (German Aerospace Center, Germany), <u>M Schulze</u>
15:40	Effects of process parameters on the interlayer bond quality of multimaterial-TPU parts built by extrusion-based 3D printing (MDA24_95) <u>LMA Lopes</u> , <u>L Santana</u> , <u>GMO Barra</u> , <u>JL Alves</u> (University of Porto, Portugal)	Composites from Tururi (<i>Manicaria saccifera</i> Gaertn.) fibrous material: Effect of structural parameters on the tensile properties, and applications (MDA24_104) <u>AS Monteiro</u> (University of Sao Paulo, Brazil), <u>D Dantas</u> , <u>T Yojo</u>
16:00-16:20	COFFEE BREAK	
	Session 8A – Additive Manufacturing IV (Chair: JL Alves, PAF Martins)	Session 8B – Composites VII (Chair: E Casarejos, A Barroso)
	Room B032	Room B035
16:20	Analysis of the limitations of organic powder for high temperature reprocessing of printed PLA parts (MDA24_1) <u>J Machado</u> , <u>L Santana</u> , <u>JL Alves</u> (University of Porto, Portugal)	Numerical and experimental stiffness evaluation of CFRP transverse leaf and coil springs (MDA24_81) <u>M Giacalone</u> (University of Modena and Reggio-Emilia, Italy), <u>A Messina</u> , <u>F Puglisi</u> , <u>M Carello</u> , <u>S Mantovani</u>
16:40	A comparison of weldability and mechanical properties of additive manufactured and bulk Ti6Al4V alloy (MDA24_6) <u>ET Akinlabi</u> (Northumbria University, Newcastle, UK), <u>PO Omoniyi</u> , <u>RM Mahamood</u> , <u>N Arthur</u> , <u>S Pityana</u> , <u>S Skhosane</u> , <u>Y Okamoto</u> , <u>T Shinonaga</u> , <u>MR Maina</u> , <u>SA Akinlabi</u> , <u>TC Jen</u>	Impact penetration response of fibre metal laminates padded with 3D continuous fibre-reinforced polyurethane foam (MDA24_88) <u>J Winhard</u> (Chemnitz University of Technology, Germany), <u>K Schäfer</u> , <u>D Nestler</u> , <u>L Kroll</u>
17:00	Investigation of the effect of alkaline environment on mechanical properties of additively manufactured 17-4 PH stainless steel parts produced using recycled metal powder (MDA24_11) <u>HAl Hadidi</u> (Military Technological College, Oman), <u>M Anand</u> , <u>S Simandjuntak</u>	So you think carbon fibre composites is the answer to lightweighting? (MDA24_111) <u>RD Adams</u> (University of Bristol, UK)
17:20	Characterisation of additive manufactured Ti6Al4V-W-Ni composite (MDA24_32) <u>RM Mahamood</u> (Northumbria University, UK), <u>S Akinlabi</u> , <u>T-C Jen</u> , <u>S Pityana</u> , <u>PO Omoniyi</u> , <u>ET Akinlabi</u>	CFRP structures for fiber tracking detectors in the R3B-FAIR experiment (MDA24_90) <u>P García-Gil</u> (Universidad de Vigo, Spain), <u>E Casarejos</u> , <u>D Agudo</u> , <u>JA López-Campos</u> , <u>S Suarez</u>

17:40	Bending properties of additively manufactured lattice structures for bone implants (MDA24_94) <u>P Nogueira</u> (University of Lisbon, Portugal), B Rodrigues, P Lopes, L Oliveira, JL Alves, J Magrinho, MB Silva, MF Vaz, AM Deus	Effect of the distribution of fibers on the transverse elastic properties of unidirectional glass-fiber composites (MDA24_90) <u>S Tarasovs</u> (University of Latvia, Latvia), J Modniks, J Andersons
18:00	Material characterization by homogenization of 3D printed polymers with infill structures (MDA24_97) <u>M Abolfathi</u> (University of Parma, Italy), F Moroni, A Pirondi, E Bedogni	Bending behaviour evaluation in tough bio-inspired helicoidal composites (MDA24_28) <u>H Malekinejad</u> (INEGI, Portugal), RCJ Carbas, EAS Marques, LFM da Silva
20:00	MDA2024 BANQUET (Casa da Música)	