

PROGRAMME

MDA 2020

3RD INTERNATIONAL CONFERENCE ON MATERIALS DESIGN AND APPLICATIONS

5-6 NOVEMBER 2020

FACULTY OF ENGINEERING - UNIVERSITY OF PORTO
PORTO - PORTUGAL

SPONSOR



PROGRAMME OF MDA2020

AUTHOR UNDERLINED → PRESENTING AUTHOR

Thursday 5 November 2020			
8:40	MDA2020 Opening (Room A101, also called 'Auditorium')		
	Session 1A – Composites I	Session 1B – Metals I	Session 1C – Ceramics
	(Chair: LFM da Silva, A Barroso)	(Chair: A Rodríguez-Prieto, EAS Marques)	(Chair: SB Leen, RJC Carbas)
	Room A101 (Auditorium)	Room B032	Room 'Sala de atos'
9:00	<p>Comparison of the shear behaviour in graphite-epoxy composites evaluated by means of biaxial tension-compression tests and off-axis tension tests (MDA20_11)</p> <p><u>A Barroso</u> (University of Seville, Spain), JC Marín</p>	<p>Magnesium intensive light weight design for next generation car's structure (MDA20_8)</p> <p><u>HE Friedrich</u> (DLR, Germany)</p>	<p>Thermals shock resistance of cement-based materials (MDA20_142)</p> <p><u>K Krzywiński</u> (University of Science and Technology, Poland), M Moj, Ł Sadowski</p>
9:20	<p>Slate-cork sandwich bonded with silicone for applications in the habitat (MDA20_15)</p> <p><u>J Abenojar</u> (Universidad Carlos III de Madrid, Spain), MA Martínez, F Velasco</p>	<p>Comparison of responses of different types of steel alloys under the same loading and environmental conditions (MDA20_19)</p> <p><u>J Brnic</u> (University of Rijeka, Croatia), S Krscanski, M Brcic</p>	<p>The influence of the recycled fine aggregate from construction and demolition wastes on the pull-off strength of the epoxy resin coating (MDA20_143)</p> <p><u>K Krzywiński</u> (University of Science and Technology, Poland), Ł Sadowski</p>
9:40	<p>Is G_{IC} an adhesive material property? (An artificial neural network analysis) (MDA20_195)</p> <p><u>A Akhavan-Safar</u>, <u>R Beygi</u> (INEGI, Portugal), F Delzendehrooy, LFM da Silva</p>	<p>Effect of the topology on the mechanical properties of porous iron immersed in body fluids (MDA20_21)</p> <p><u>MC Salama</u>, <u>D Reचना</u>, <u>L Reis</u>, <u>AM Deus</u>, <u>C Santos</u>, <u>MJ Carmezim</u>, <u>MF Vaz</u> (University of Lisbon, Portugal)</p>	<p>Concrete 3D printing for the construction industry: design and printing with alternative materials and experimental analysis (MDA20_110)</p> <p><u>J Teixeira</u> (University of Porto, Portugal), <u>CO Schaefer</u>, <u>B Rangel</u>, <u>FJ Lino</u>, <u>L Maia</u>, <u>S Nunes</u>, <u>R Neto</u>, <u>L Costa</u></p>
10:00	<p>Flexible photosynthetic textile biocomposites: Using laboratory testing and digital fabrication for the development of flexible living building materials (MDA20_43)</p> <p><u>A Stefanova</u> (Newcastle University, UK), B Bridgens, R Armstrong, P In-na, GS Caldwell</p>	<p>Prediction of creep degradation for materials intended to manufacture components in the petrochemical industry (MDA20_29)</p> <p><u>A Rodríguez-Prieto</u> (UNED, Spain), M Callejas, AM Camacho</p>	<p>Joining alumina to Ti6Al4V alloy using rolled brazing fillers (MDA20_51)</p> <p><u>O Emadinia</u> (University of Porto, Portugal), <u>F Viana</u>, <u>MF Vieira</u>, <u>A Guedes</u>, <u>S Simões</u></p>
10:20	<p>The effect of nano- and micron-scale modified epoxy matrix on GFRP-insulator component behavior (MDA20_49)</p> <p><u>I Burda</u>, <u>M Barbezat</u>, <u>AJ Brunner</u> (Empa, Switzerland)</p>		
10:40-11:00	COFFEE BREAK (Room under the Auditorium)		
	Session 2A – Joining I	Session 2B – Design I	Session 2C – Metals II
	(Chair: RD Adams, XF Sánchez-Romate)	(Chair: EAS Marques, FJ Lino)	(Chair: RJC Carbas, J Seabro)
	Room A101 (Auditorium)	Room B032	Room 'Sala de atos'
11:00	<p>Residual stress and deformation of joints bonded adhesively (MDA20_150)</p> <p><u>S Shibutani</u>, <u>C Sato</u> (Tokyo Institute of Technology, Japan), <u>S Sekiguchi</u>, <u>JJM Machado</u></p>	<p>Study and analysis of a seating rail system of an automobile load lifter device – Learning outcomes (MDA20_1)</p> <p><u>R Echempati</u> (Kettering University, USA), <u>SS Kathiresan</u></p>	<p>Study of the CNTs influence on the strengthening and deformation of aluminium and nickel nanocomposites (MDA20_138)</p> <p><u>Í Carneiro</u> (University of Porto, Portugal), <u>F Viana</u>, <u>MF Vieira</u>, <u>JV Fernandes</u>, <u>S Simões</u></p>

11:20	Effects of particulate reinforcements on the hardness, impact and tensile strengths of AA 6061-T6 friction stir weldments (MDA20_10) <u>TE Abioye</u> (Federal University of Technology Akure, Nigeria), H Zuhailawati, AS Anasyida, SP Ayodeji, PK Oke	The use of modern material technologies in bionic architecture (MDA20_173) <u>A Nowak</u> (Warsaw University of Technology, Poland)	Machinability study of polymeric parts fabricated by additive manufacturing under a dry milling process (MDA20_83) <u>P Arnés-Urgellés</u> (ESPOL Polytechnic University, Ecuador), J Bayas, E Ramírez, F Maldonado, CG Helguero, JL Amaya
11:40	Adhesively bonded, layer based bipolar plates for fuel cells (MDA20_170) <u>D Weiser</u> (Technical University Braunschweig, Germany), F Bergenthun, E Stammen, K Dilger	Innovative concepts for the usage of veneer based hybrid materials in vehicle structures (MDA20_73) <u>DB Käse</u> (German Aerospace Center, Germany), E Beeh, G Piazza, HE Friedrich, D Kohl, H Nguyen, C Burgold, D Berthold	Investigations on sliding wear performance of aluminium 6061-Red mud composite under various operating parameters (MDA20_41) N Panwar, S Bala, <u>A Chauhan</u> (Panjab University, India)
12:00	The use of carbon nanotube doped adhesive films as flexible strain sensors (MDA20_156) <u>XF Sánchez-Romate</u> (University of Rey Juan Carlos, Spain), E Gómez, M Sánchez, A Ureña	Methodology to simulate veneer based structural components for static and crash load cases (MDA20_72) <u>G Piazza</u> (German Aerospace Center, Germany), DB Käse, E Beeh, HE Friedrich	Icephobic coating for overhead power lines: from in-lab analysis to out-door testing (MDA20_92) M Balordi, G Santucci deMagistris, C Chemelli, P Marcacci, <u>F Pini</u> (Ricerca Sul Sistema Energetico, Italy)
12:20	Cyclic fatigue testing: Assessment of polyurethane adhesive joints' durability for bus structures' aluminium assembly (MDA20_147) <u>Y Boutar</u> (Monastir University, Tunisia), S Naïmi, S Mezlini, RJC Carbas, LFM da Silva, M Ben Sik Ali	Mechanical performance of 3D printed sandwich composite with a high-flexible core (MDA20_174) <u>W Ahmed</u> (UAE University, United Arab Emirates), F Alnajjar, E Zaneldin	Wear behaviour of austenitic stainless steel parts locally reinforced with WC-Fe composites (MDA20_139) <u>AB Moreira</u> (University of Porto, Portugal), P Lacerda, LMM Ribeiro, MF Vieira
12:40		Modelling of fretting-fatigue for submarine power cables in renewable energy: finite element simulation and EASY-FRET analytical fretting wear-fatigue design tool (MDA20_197) <u>CT Poon</u> (NUI Galway, Ireland), A Mory, SM O'Halloran, AM Harte, RA Barrett, SB Leen	
13:00-14:00 LUNCH BREAK (Room under the Auditorium)			
Session 3A – Metals III (Chair: SB Leen, PT de Castro)		Session 3B – Polymers (Chair: AJ Brunner, A Akhavan-Safar)	Session 3C – Additive Manufacturing I (Chair: R Neto, MF Vaz)
Room A101 (Auditorium)		Room B032	Room 'Sala de atos'
14:00	Virtual crack closure as a method for calculating stress intensity factor of cracks in metallic specimens (MDA20_48) <u>S Krscanski</u> (University of Rijeka, Croatia), J Brnic	Experimental and numerical study of the water ingress of polybutylene terephthalate reinforced with glass fiber (MDA20_33) <u>CSP Borges</u> (INEGI, Portugal), A Akhavan-Safar, EAS Marques, RJC Carbas, C Ueffing, P Weissgraeber, LFM da Silva	Effects of the raster angle on the static friction coefficient between extrusion-based 3D printed parts (MDA20_7) L Santana, <u>FJ Lino</u> (University of Porto, Portugal), ACS Netto
14:20	Shape memory behavior of rapidly quenched TiNiCu alloys with high copper content (MDA20_55) <u>AV Shelyakov</u> (National Research Nuclear University MEPhI, Russia), NN Sitnikov, KA Borodako, ON Sevryukov, AA Diadechko	Comparison of the bending fatigue performance of selective laser sintered and injection molded polyamide spur gears (MDA20_141) <u>AK Pandian</u> (Indian Institute of Technology, India), SS Gautam, S Senthilvelan	From waste to resource: Proposal for sustainable footwear (MDA20_9) B Abreu, <u>FJ Lino</u> (University of Porto, Portugal)
14:40	Numerical simulation of localized-cooling rate and mechanical properties for direct energy deposition processed of austenitic steel 316 L (MDA20_157) <u>R Darabi</u> (University of Porto, Portugal), E Azinpour, FK Fiorentin, M Jimenez, J Cesar de Sá	Testing procedure to load DCB specimens at constant strain rates (MDA20_120) <u>PDP Nunes</u> (INEGI, Portugal), EAS Marques, A Akhavan, RJC Carbas, LFM da Silva	Studying the influence of infill density on the mechanical properties of PLA optimized structures by additive manufacturing (MDA20_23) C Silva, <u>AIL Pais</u> (INEGI, Portugal), MC Marques, FJ Lino, J Belinha
15:00	Mechanical testing of extruded magnesium for the development of automobile seat frame structures (MDA20_70) <u>SP Sikora</u> (German Aerospace Center, Germany), L Bergmann, E Beeh, H Sulaiman	Water resistance of acrylic adhesive tapes for rooftop solar panel rail mounts fastening (MDA20_18) KV Machalická, <u>P Sejkot</u> (Czech Technical University in Prague, Czech Republic), M Vokáč, P Pokorný	Combining structural optimization solutions using FFF manufacturing (MDA20_24) <u>AIL Pais</u> (INEGI, Portugal), B Athayde Malafaya, EFC Bastos, MC Marques, FJ Lino, J Belinha

15:20	<p>Parametric study of fatigue crack growth in cracked finite plates (MDA20_87)</p> <p><u>LDC Ramalho</u> (INEGI, Portugal), PMST de Castro, RDSG Campilho, J Belinha</p>	<p>Fracture envelope of automotive adhesives at high loading rates (MDA20_198)</p> <p><u>CSP Borges</u> (INEGI, Portugal), PDP Nunes, A Akhavan-Safar, EAS Marques, RJC Carbas, L Alfonso, LFM da Silva</p>	<p>Mechanical characterization of multi-material 3D printed specimens (MDA20_127)</p> <p><u>J Galante</u> (University of Porto, Portugal), GMF Ramalho, M Frascio, MQ dos Reis, RJC Carbas, EAS Marques, LFM da Silva</p>
15:40	<p>Material properties scatter and its influence on formability behavior in sheet metal forming process (MDA20_119)</p> <p><u>SS Miranda</u> (INEGI, Portugal), DJ Cruz, RL Amaral, AD Santos, J César de Sá, JV Fernandes</p>		<p>Titanium near net shape engine components from Selective Laser Melting: a comparison with the conventional forged parts (MDA20_56)</p> <p><u>S Cecchel</u> (Streparava SpA, Italy), D Ferrario, F Mega, G Cornacchia</p>
16:00-16:20 COFFEE BREAK (Room under the Auditorium)			
	Session 4A – Joining II	Session 4B – Composites II	Session 4C – Metals IV
	(Chair: A Pironi, S de Barros)	(Chair: AQ Barbosa, AT Marques)	(Chair: M Vieira, RL Amaral)
	Room A101 (Auditorium)	Room B032	Room ‘Sala de atos’
16:20	<p>Study of the influence of microparticles of cork on the fracture type in single lap joints (MDA20_35)</p> <p><u>M Cunha</u> (INEGI, Portugal), CI da Silva, AQ Barbosa, RJC Carbas, EAS Marques, LFM da Silva</p>	<p>Evaluation of the influence of design in the mechanical properties of honeycombs cores used in composite panels (MDA20_20)</p> <p>A Miranda, M Leite, L Reis, E Copin, <u>MF Vaz</u> (University of Lisbon, Portugal), AM Deus</p>	<p>Analysis and evaluation of mechanical descriptors from micro compression tests on spherical samples (MDA20_105)</p> <p><u>H Sonnenberg</u> (University of Bremen, Germany), B Clausen</p>
16:40	<p>Adherence of epoxy and polyurethane adhesive in pultruded composite material (MDA20_185)</p> <p>AC Passos, RAA de Aguiar, HRM Costa, <u>S de Barros</u> (CEFET/RJ, Brazil), EM Sampaio</p>	<p>Biological evaluation of commercially available decellularized matrices (MDA20_69)</p> <p><u>LA Quintero</u> (University of Verona, Italy), G Conti, A Sbarbati</p>	<p>Phase-field ductile fracture diffusive approach using residual control staggered solution method (MDA20_160)</p> <p><u>E Azinpour</u> (University of Porto, Portugal), AD Santos, JMA Cesar de Sá</p>
17:00	<p>Functionally graded adhesive joints under impact loads (MDA20_126)</p> <p><u>P Nunes</u> (INEGI, Portugal), MQ dos Reis, RJC Carbas, EAS Marques, LFM da Silva</p>	<p>Use of wood in the mobility sector – Opportunities, benefits and challenges (MDA20_144)</p> <p><u>D Berthold</u> (Fraunhofer Institute for Wood Research, Germany), C Burgold, N Ritter</p>	<p>Influence of strain rate effects on temperature field distribution and mechanical behavior of dual-phase steel sheets (MDA20_123)</p> <p><u>RL Amaral</u> (INEGI, Portugal), AD Santos, SS Miranda, J César de Sá</p>
17:20	<p>Fatigue life evaluation of adhesive materials at different mode mixities (MDA20_25)</p> <p><u>F Castro Sousa</u> (University of Porto, Portugal), A Akhavan-Safar, R Goyal, LFM da Silva</p>	<p>Adhesive strength of gypsum composites with lightweight fillers (MDA20_179)</p> <p><u>M Doleželová</u> (Czech Technical University in Prague, Czech Republic), J Krejsová, A Vimmrová</p>	<p>Microstructure and mechanical performance of cast and heat treated Al-12%Si-piston alloy with rare earth metals (Sm, Tb and Ce) (MDA20_134)</p> <p><u>MM Tash</u> (Cairo University, Egypt), WM Khalifa, IS El-Mahallawi</p>
17:40	<p>Characterization of different adhesive materials in terms of fatigue loadings and environmental effects (MDA20_12)</p> <p><u>A Akhavan-Safar</u> (INEGI, Portugal), EAS Marques, RJC Carbas, LFM da Silva, R Goyal, N Cuvillier, I Maus, Y Takahashi, J Sherwood</p>	<p>Fracture mechanism of adhesive single-lap joints with composite adherends under quasi-static tension (MDA20_61)</p> <p>X Shang, <u>EAS Marques</u> (INEGI, Portugal), JJM Machado, RJC Carbas, AQ Barbosa, D Jiang, LFM da Silva</p>	
19:00 Poster session and RECEPTION (Room under the Auditorium)			
Metals			
Poster 1	<p>Prediction of the yield stress of aluminium alloys using Big Data and Artificial Neural Networks (MDA20_59)</p>	<u>D Merayo</u> (UNED, Spain), A Rodriguez-Prieto, AM Camacho	
Poster 2	<p>Seedless copper electroplating on CoW thin films in low pH electrolyte - early stages of formation (MDA20_162)</p>	<u>BMC Oliveira</u> (INEGI, Portugal), RF Santos, F Viana, S Simões, P Alpuim, PJ Ferreira, M Vieira	

Poster 3	Finite element implementation of the Cazacu ductile damage law for porous orthotropic hcp crystalline structure materials exhibiting strength differential effect (MDA20_169)	C Rojas-Ulloa (Universidad de La Frontera, Chile), V Tuninetti, AM Habraken
Poster 4	Effect of solution heat treatment conditions on the microstructure of a Ni-Si-B alloy (MDA20_176)	GM Gorito (University of Porto, Portugal), P Lacerda, M Vieira, LMM Ribeiro
Poster 5	Minisample tensile-compression testing for sheet metal mechanical characterization (MDA20_117)	DJ Cruz (INEGI, Portugal), AD Santos, RL Amaral, JC Xavier, JG Mendes, SS Miranda
Poster 6	Theoretical and experimental studies of bainite formation in lean medium-Mn steel (MDA20_183)	M Morawiec (Silesian University of Technology, Poland), A Grajcar, C Garcia-Mateo, V Ruiz-Jimenez
Additive manufacturing		
Poster 7	Rotating fatigue analysis of 3D printed specimens from assorted materials (MDA20_88)	M Brcic (University of Rijeka, Croatia), S Krscanski, J Brnic
Forming		
Poster 8	Numerical analysis of anisotropic sheet metals based on non-associated flow (MDA20_124)	DG Wagne (INEGI, Portugal), RL Amaral, AD Santos, J César de Sá
Tribology		
Poster 9	The effect of surface preparation on the tribological performance of anodized automotive aluminum alloy (MDA20_114)	N Laszlo, N Takacs (Bay Zoltán Nonprofit Ltd. for Applied Research, Hungary)
Machining		
Poster 10	Titanium Ti-6Al-4V alloy milling by applying industrial robots (MDA20_50)	E Grisol de Melo (Aeronautics Institute of Technology ITA, Brazil), JO Gomes, E Uhlmann
Poster 11	Evaluation of CFRP machining by applying industrial robots (MDA20_190)	E Grisol de Melo (Aeronautics Institute of Technology ITA, Brazil), JC dos Santos Silva, TB Kleinb, J Polte, J de Oliveira Gomesa, E Uhlmann
Poster 12	Optimization of parameters in the drilling of hybrid sheet Al/GFRP/Al using carbide drill and box-behnken design (BBD) (MDA20_54)	C Devitte (Federal University of Rio Grande do Sul Brazil), AJ Souza
Poster 13	Determining the scopes of applicability of cutting blades made of conventional and sintered high-speed steels (MDA20_62)	MJ Kupczyk (Poznan University of Technology, Poland), J Komolka
Poster 14	The use of laser heating to improve the adhesion of different wear-resistant coatings on the base of titanium nitride to cutting tools (MDA20_63)	MJ Kupczyk (Poznan University of Technology, Poland), P Twardowski
Poster 15	Investigation of adhesion behaviour of different underlayer DLC coated cold forming tool steel (MDA20_113)	N Laszlo (Bay Zoltán Nonprofit Ltd. for Applied Research, Hungary)
Poster 16	Adapted versus projected machining centers energy consumption for MQL technique (MDA20_193)	A Dttmann (Aeronautics Institute of Technology (ITA), Brazil), JO Gomes
Poster 17	Evaluation of additive manufacturing parts machinability using automated GMAW ER70S-6 with Nodular Cast Iron (MDA20_194)	A Dttmann (Aeronautics Institute of Technology (ITA), Brazil), JO Gomes

Ceramics

Poster 18	Microstructure and high temperature oxidation behavior of ZrB ₂ -ZrO ₂ -MoSi ₂ -Al coatings for the protection of carbon/carbon composites (MDA20_99)	<u>VY Novikov</u> (Belgorod State National Research University, Russia), MG Kovaleva, IY Goncharov, MN Yapryntsev, YN Tyurin, VV Sirota, ON Vagina, IN Pavlenko, OV Kolisnichenko
Poster 19	Novel lightweight concrete made from footwear industry waste (MDA20_130)	MC Baptista, ML Garcia, SC Pinho, MA Lopes, MF Almeida, C Coelho, <u>C Fonseca</u> (University of Porto, Portugal)

Composites

Poster 20	Evaluation of mechanical properties of 3D lattice structures for sandwich panels cores (MDA20_22)	JG Monteiro, M Sardinha, F Alves, M Leite, AMR Ribeiro, AM Deus, L Reis, <u>MF Vaz</u> (University of Lisbon, Portugal)
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Joining

Poster 21	Attempts to increase the adhesion of boron nitride coatings to sintered carbides blades (MDA20_64)	<u>MJ Kupczyk</u> (Poznan University of Technology, Poland)
Poster 22	Hygrothermal aging of adhesives subjected to cyclic humidity conditions (MDA20_26)	JA da Costa, <u>A Akhavan-Safar</u> (INEGI, Portugal), EAS Marques, RJC Carbas, LFM da Silva
Poster 23	Effect of adhesive thickness on butt adhesive joints under torsional loads (MDA20_32)	<u>RJC Carbas</u> (INEGI, Portugal), LFM da Silva
Poster 24	Evaluation of the mechanical properties of a functional graded joint using magnetic microparticles (MDA20_36)	<u>M Cunha</u> (INEGI, Portugal), P-L Corre, CI da Silva, AQ Barbosa, RJC Carbas, EAS Marques, LFM da Silva
Poster 25	Evaluation of the mechanical properties of an adhesive single lap joint using rubber microparticles (MDA20_37)	<u>M Cunha</u> (INEGI, Portugal), P-L Corre, CI da Silva, AQ Barbosa, RJC Carbas, EAS Marques, LFM da Silva
Poster 26	Polymer joining techniques state of the art review (MDA20_82)	<u>LRR Silva</u> (Instituto Federal do Espírito Santo, Brazil), EAS Marques, LFM da Silva
Poster 27	Quasi-static validation of SHPB specimens for the determination of mode I, mode II and mixed-mode fracture toughness of structural adhesives (MDA20_121)	<u>PDP Nunes</u> (INEGI, Portugal), EAS Marques, A Akhavan-Safar, RJC Carbas, LFM da Silva
Poster 28	Functionally graded adherends by additive manufacturing (MDA20_125)	<u>J Galante</u> (University of Porto, Portugal), MQ dos Reis, GMF Ramalho, M Frascio, RJC Carbas, EAS Marques, LFM da Silva
Poster 29	Effect of thermal cycling on stress - strain behaviour of bonded, riveted and hybrid joints in façade applications (MDA20_128)	<u>B Nečasova</u> (Brno University of Technology, Czech Republic), P Liška, P Sedlák
Poster 30	Prediction of tensile shear strength of resistance spot welded AA 5052 using regression analysis model (MDA20_171)	<u>TE Abioye</u> (Federal University of Technology Akure, Nigeria), FZ Bin Redzuan, H Zuhailawati, AS Anasyida, BD Bankong, TC Akintayo
Poster 31	Is G_{ic} an adhesive material property? (An artificial neural network analysis) (MDA20_196)	F Delzendehrooy, <u>R Beygi</u> (INEGI, Portugal), A Akhavan-Safar, LFM da Silva
Poster 32	Effect of moisture ageing on the interfacial strength of adhesive joints: An overview (MDA20_34)	<u>CSP Borges</u> (INEGI, Portugal), A Akhavan-Safar, EAS Marques, RJC Carbas, C Ueffing, P Weissgraeber, LFM da Silva

Design

Poster 33	Stiffness and damping properties of a composite beam design (MDA20_67)	M Ferreira, N Peixinho (University of Minho, Portugal), V Carneiro, P Ribeiro, J Meireles, D Soares
Poster 34	Numerical simulation of impact behaviour of multi-cell thin-walled structures with configurable thermal trigger design (MDA20_153)	N Peixinho (University of Minho, Portugal), P Resende
Poster 35	Design of a new concept machine for suspension/wheel/tire study (MDA20_84)	M Cima (Università degli studi di Brescia, Italy), L Solazzi

Friday 6 November 2020

	Session 5A – Composites III (Chair: LFM da Silva, AJ Brunner)	Session 5B – Additive Manufacturing II (Chair: PAF Martins, MF Vaz)	Session 5C – Metals V (Chair: FJ Lino, AD Santos)
	Room A101 (Auditorium)	Room B032	Room ‘Sala de atos’
9:00	Hygroscopic behavior of cellulose acetate: A preliminary study for the production of an environmentally responsive laminate (MDA20_52) S Khoshtinat (Politecnico di Milano, Italy), V Carvelli, C Marano	Additive manufacturing: Material extrusion of metallic parts (MDA20_140) JM Costa (University of Porto, Portugal), EW Sequeiros, MT Vieira, MF Vieira	A dislocation-based yield strength determination model in nano-indentation test (MDA20_178) P Tao (Nanjing Tech University, China), F Ye, J Gong, RA Barrett, SB Leen
9:20	Study of impacts on kevlar/epoxy foam composites applied to shields (MDA20_98) L Boutros (Université de Toulouse, France), I Tawk, P Navarro, S Marquet, JF Ferrero	Design of an auxetic cellular structure with different elastic properties in its three orthogonal directions (MDA20_85) R Valle (University of Talca, Chile), G Pincheira	Microstructure, hardness, wear and corrosion resistance of heat treated 7075 aluminum alloy casting (MDA20_135) M Tash (Cairo University, Egypt)
9:40	Method and apparatus to distribute nonuniformly particles for obtaining a functionally graded adhesive joint (MDA20_27) JB Marques, AQ Barbosa (INEGI, Portugal), CI da Silva, LFM da Silva	Hybrid additive manufacturing with forming stages (MDA20_151) JPM Pragana, RJS Baptista, IMF Bragança, CMA Silva, PAF Martins (University of Lisbon, Portugal)	Using the radial point interpolation method to study the viscoplastic extrusion process (MDA20_97) R Costa, J Belinha, DES Rodrigues (INEGI, Portugal), R Natal Jorge
10:00	Synthesis and tribo-mechanical characterization of particulate TiB ₂ reinforced aluminum metal matrix composite (MDA20_149) A Sheelwant (BITS Pilani, India), NSK Reddy, P Shailesh		Zoning lubricant technique applied for improving formability of square deep drawing process (MDA20_107) S Thipprakmas (King Mongkut’s University of Technology Thonburi, Thailand), J Sriborwormongkol, W Phanitwong
10:40-11:00	COFFEE BREAK (Room under the Auditorium)		
	Session 6A – Forming (Chair: PAF Martins, AD Santos)	Session 6B – Composites IV (Chair: AT Marques, A Akhavan-Safar)	Session 6C – Design II (Chair: AM Ferreira, A Rodríguez-Prieto)
	Room A101 (Auditorium)	Room B032	Room ‘Sala de atos’
11:00	Development of a testing method for real-time diameter measurement in hole expansion test (MDA20_118) DJ Cruz (INEGI, Portugal), AD Santos, RL Amaral, JG Mendes, SS Miranda, JV Fernandes	Study of gypsum composites with fine solid aggregates at elevated temperatures (MDA20_181) M Doleželová, L Scheinherrová, A Vimmrová (CTU in Prague, Czech Republic)	3D Printed and Carbon Fiber Assembly Technology for Integrated Hydraulic Mechanisms (MDA20_76) M Sleiman (University of Versailles, France), S AlFayad, K Khalil
11:20	Sheet-tube form-fit joints made from dissimilar materials (MDA20_46) LM Alves, RM Afonso, PAF Martins (University of Lisbon, Portugal)	Composites for life (MDA20_112) PD Menezes, T Carneiro, AT Marques (University of Porto, Portugal)	Stress-strain evaluation of structural parts using artificial neural networks (MDA20_175) JPA Ribeiro (University of Porto, Portugal), M Parente, SMO Tavares
11:40	Spring-back characteristics on bent parts with hole in V-die bending process (MDA20_108) S Thipprakmas (King Mongkut’s University of Technology Thonburi, Thailand), A Sontamino	Effect of cyclic aging on mechanical properties of CFRP composite laminates (MDA20_13) A Akhavan-Safar (INEGI, Portugal), M Moazzami, MR Ayatollahi, LFM da Silva	Development of material set for blunt impact body protector (MDA20_129) D Pacek (Military Institute of Armament Technology, Poland), R Gieleta

12:00	A new draw-bead shape application to improve the quality of deep drawn parts (MDA20_109) <u>W Phanitwong</u> (Rajamangala University of Technology Rattanakosin, Thailand), S Thipprakmas	Challenges and prospects on manufacturing functionally graded adhesives (MDA20_16) <u>JB Marques</u> , <u>AQ Barbosa</u> (INEGI, Portugal), <u>Cl da Silva</u> , <u>RJC Carbas</u> , <u>LFM da Silva</u>	Analysis, design and prototype construction of a load lifter device – Learning outcomes (MDA20_2) <u>R Echempati</u> (Kettering University, USA)
12:20		Parametric study of composite curved adhesive joints (MDA20_86) <u>JMC Correia</u> , <u>RDSG Campilho</u> , <u>RJB Rocha</u> , <u>Y Liu</u> , <u>LDC Ramalho</u> (INEGI, Portugal)	
13:00-14:00 LUNCH BREAK (Room under the Auditorium)			
	Session 7A – Additive Manufacturing III (Chair: A de Jesus, M Vieira)	Session 7B – Joining III (Chair: R Grangeat, EAS Marques)	Session 7C – Composites V (Chair: AT Marques, A Barroso)
	Room A101 (Auditorium)	Room B032	Room ‘Sala de atos’
14:00	Compressive behaviour of additively manufactured high strength steels under dynamic loading and high temperature conditions (MDA20_168) <u>TEF Silva</u> (University of Porto, Portugal), <u>AVL Gregório</u> , <u>PAR Rosa</u> , <u>AMP Jesus</u> , <u>ARL Reis</u>	Exploitation of rubbery electrospun nanofibrous mat for fracture toughness improvement of structural epoxy adhesive bonded joints (MDA20_79) <u>S Minosi</u> (University of Parma, Italy), <u>D Cocchi</u> , <u>E Maccaferri</u> , <u>A Pirondi</u> , <u>A Zucchelli</u> , <u>L Mazzocchetti</u> , <u>F Campanini</u>	Effect of acid-thermal aging on mode II interlaminar fracture toughness of unidirectional laminated composites (MDA20_17) <u>M Salamat-talab</u> , <u>M Safari</u> , <u>H Bahrami-Manesh</u> , <u>A Akhavan-Safar</u> (INEGI, Portugal), <u>LFM da Silva</u>
14:20	The elasto-plastic analysis of 3D-printed thermoplastics using the a meshless method and a modified Hill Yield criterion (MDA20_96) <u>DES Rodrigues</u> (INEGI, Portugal), <u>J Belinha</u> , <u>R Natal Jorge</u>	Design of and effect of surface morphology in adhesive bonding of Fused Filament Fabrication (FFF) additively manufactured polymeric components (MDA20_80) <u>L Bergonzi</u> , <u>A Pirondi</u> (Università di Parma, Italy), <u>F Moroni</u> , <u>M Frascio</u> , <u>M Avasse</u>	Experimental study of bio-based epoxy composite materials in the strengthening of reinforced concrete structures (MDA20_184) <u>I Ivanova</u> , <u>J Assih</u> (University of Reims Champagne-Ardenne, France)
14:40	Residual stress prediction of an additive manufactured maraging steel component: A numerical and experimental analysis (MDA20_104) <u>FK Fiorentin</u> (INEGI, Portugal), <u>R Darabi</u> , <u>MJ Marques</u> , <u>AC Batista</u> , <u>AMP Jesus</u>	Low-cycle fatigue of X100 welded connections for steel catenary risers: Physically-based yield strength modelling and DIC testing (MDA20_81) <u>DJ Long</u> (National University of Ireland, Ireland), <u>RJ Devaney</u> , <u>H Song</u> , <u>PE O'Donoghue</u> , <u>SB Leen</u> , <u>RA Barrett</u>	Phono absorbent behavior of new fiberglass plates from mixed plastic material wastes (MDA20_186) <u>MA Platon</u> (Technical University of Cluj-Napoca, Romania), <u>O Nemes</u> , <u>AE Tiuc</u>
15:00	Rapid prototyping in a novel pipe-coupling device (MDA20_115) <u>RJ Neto</u> (INEGI, Portugal.), <u>R Paiva</u> , <u>B Santos</u> , <u>P Sousa</u> , <u>AJ Baptista</u>	Frictional damping in vibrating bolted structures (MDA20_146) <u>RD Adams</u> (University of Oxford, UK)	Preparation of Amazonian palm tree fiber (<i>Manicaria saccifera</i> Gaertn.) for composite materials (MDA20_187) <u>AS Monteiro</u> (University of Sao Paulo, Brazil), <u>D Dantas</u> , <u>T Yojo</u>
15:20	4D Structures for short-time building of emergency shelters (MDA20_111) <u>LA Costa</u> , <u>B Rangel Carvalho</u> , <u>FJ Lino</u> , <u>AT Marques</u> (University of Porto, Portugal), <u>AFBM da Silva</u> , <u>P Esfandiari</u> , <u>JFMG da Silva</u>	Water diffusion in the interface of an epoxy/metal bonded assembly (MDA20_94) <u>R Grangeat</u> (University of Nantes GeM, France), <u>M Girard</u> , <u>F Jacquemin</u> , <u>C Lupi</u>	Innovative application of composite materials in urban farms and eco-production buildings - Evaluation of Smart City solutions (MDA20_188) <u>M Grochulska-Salak</u> (Warsaw University of Technology, Poland)
15:40	Feasibility study of hybrid joints using additive manufacturing with conductive thermoplastic filament (MDA20_167) <u>M Frascio</u> (University of Genova, Italy), <u>F Moroni</u> , <u>M Avasse</u> , <u>E Marques</u> , <u>RJC Carbas</u> , <u>LFM da Silva</u>	An overview of techniques for characterization and modelling of the strain rate dependency of structural adhesives (MDA20_60) <u>EAS Marques</u> (INEGI, Portugal), <u>CSP Borges</u> , <u>PDP Nunes</u> , <u>RJC Carbas</u> , <u>LFM da Silva</u>	Joint strength of toughened transverse composites under different loading rates (MDA20_31) <u>RJC Carbas</u> (INEGI, Portugal), <u>EAS Marques</u> , <u>LFM da Silva</u>
16:00-16:20 COFFEE BREAK (Room under the Auditorium)			

Session 8A – Joining IV		Session 8B – Metals V	
(Chair: S de Barros, A Pirondi)		(Chair: AD Santos, M Vieira)	
Room A101 (Auditorium)		Room B032	
16:20	<p>Laser transmission joining of thermoplastics and thermoset carbon fibre reinforced plastics: Analyzing the occurrence of ablation and pores (MDA20_95)</p> <p><u>J Brodhun</u> (TU Braunschweig, Germany), K Dilger, S Hartwig</p>	<p>Machining of Ti6Al4V alloy: A numerical and experimental approach (MDA20_57)</p> <p><u>S Carvalho</u> (University of Aveiro, Portugal), A Horovistiz, JP Davim</p>	
16:40	<p>Influence of aging on the mechanical behavior of bonded assemblies (MDA20_100)</p> <p><u>H Obeid</u> (Université de Toulouse, France), S Marguet, B Hassoune-Rhabbour, T Merian, A Leonardi, J-F Ferrero, H Weleman</p>	<p>Topology optimization of continua using conventional element technology and the Newton-Raphson method (MDA20_191)</p> <p><u>P Areias</u> (University of Lisbon, Portugal), HC Rodrigues, T Rabczuk</p>	
17:00	<p>Mixed-mode fracture of composite-to-metal bonded joints (MDA20_106)</p> <p><u>MM Arouche</u> (Federal Center for Technological Education in Rio de Janeiro, Brazil), S Teixeira de Freitas, S de Barros</p>	<p>Generation of reproducible metallic micro-samples for high-throughput method using drop-on demand droplet generator (MDA20_152)</p> <p><u>SI Mogadam</u> (University of Bremen, Germany), H Sonnenberg, A Thomann, N.Ellendt, L Mädler</p>	
17:20	<p>In pursuit of toughness and damage tolerance in adhesive joints by using architected substrates (MDA20_172)</p> <p>C Morano, G Zhou, <u>M Alfano</u> (University of Waterloo, Canada)</p>	<p>A comparison of safety factor values for Soderberg and DIN 743 fatigue analyses (MDA20_192)</p> <p><u>BS Henriques</u> (University of Porto, Portugal), MR Carvalho, SMO Tavares, PMST de Castro</p>	
17:40	<p>A physically based fatigue crack initiation for P91 welded steel: application to simple and complex connections (MDA20_177)</p> <p><u>J Zhou</u> (NUI Galway, Ireland), RA Barrett, SB Leen</p>	<p>Multi-scale modeling for residual stresses analysis of a super duplex stainless steel (MDA20_154)</p> <p><u>RO Sousa</u> (University of Porto, Portugal), AP Costa, LMM Ribeiro, AD Santos, JC de Sá</p>	
20:00	MDA2020 BANQUET (Porto caves)		