

## Programme of EM2024

Author underlined → presenting author

\* Plenary lecture

<b>Thursday 9 May 2024</b>		
8:40	<b>EM 2024 Opening (Room B032)</b>	
9:00*	Effects of microstructure with defects and surface on the fatigue behavior of additively manufactured metallic materials ( <b>EM24_60</b> ) M Teschke, S Stammkötter, M Zimpel, <u>F Walther</u> (TU Dortmund University, Germany)	
	<b>Session 1A – Additive manufacturing I (Chair: MF Vaz and J Lino Alves)</b>	<b>Session 1B – Composites manufacturing (Chair: RJC Carbas and LFM da Silva)</b>
	<b>Room B032</b>	<b>Room B035</b>
9:40	A systematic study of large format additive manufacturing ( <b>EM24_2</b> ) <u>H Brito</u> , <u>J Lino Alves</u> (University of Porto, Portugal)	Comparison of steam-free processing technologies for particle foam parts ( <b>EM24_65</b> ) <u>S Handtke</u> (Volkswagen AG, Germany), J Hain, F Fischer, T Ossowski, K Dröder
10:00	Characterization of additively manufactured low alloyed steel using an upsetting test with miniaturized cylindrical specimen ( <b>EM24_11</b> ) <u>R März</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), P Hetz, D Bartels, M Schmidt, M Merklein	Induction heating simulation for aircraft RTM toolings ( <b>EM24_21</b> ) <u>L Brieskorn</u> (Fraunhofer IFAM, Germany), M Rahman
10:20	Tailoring surface properties of LPBF-produced SS316L via laser texturing for targeted applications ( <b>EM24_46</b> ) MM Krishna Sai, U Mahata, <u>A Mandal</u> (Indian Institute of Technology (Indian School of Mines) Dhanbad, India)	Investigating the mechanical properties of spark plasma-sintered refractory nitride-reinforced titanium alloy matrix composites for high-temperature aerospace application ( <b>EM24_57</b> ) <u>JO Abe</u> (Tshwane University of Technology, South Africa), OM Popoola, API Popoola
<b>10:40-11:00</b>	<b>COFFEE BREAK</b>	
	<b>Session 2A – Forming I (Chair: PAF Martins and M Merklein)</b>	<b>Session 2B – Additive manufacturing II (Chair: F Walther and DM Neto)</b>
	<b>Room B032</b>	<b>Room B035</b>
11:00	Numerical and experimental investigation of extrusion processes from coil ( <b>EM24_8</b> ) <u>M Leicht</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), M Merklein	Investigation on anterior cruciate ligament with SLA 3D printing ( <b>EM24_28</b> ) <u>L Paul</u> (St. Josephs college of Engineering and Technology, India), P V Pradeep
11:20	Development of a finite element model of the stamping process to analyze the deformation behavior of dimpled beams ( <b>EM24_16</b> ) V Pendse, <u>MH Ghazwani</u> (Jazan University, Saudi Arabia), A Alnujaie, R Saminathan, PV Vinh	Biocompatible titanium-niobium scaffolds produced by direct ink writing ( <b>EM24_34</b> ) <u>T Vilella</u> (Universitat Politècnica de Catalunya, Spain), G Fargas, D Rodríguez

11:40	Modelling of sheet metal forming processes based on the sheet metal upsetting test ( <b>EM24_25</b> ) M Merklein, P Hetz (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany)	Critical effect of volumetric defects on the fatigue behavior of additively manufactured Ti-6Al-4V ( <b>EM24_87</b> ) N Shamsaei, S Shao (Auburn University, USA)
12:00	Improvement of the failure analysis under plane strain condition through an optimized die geometry for the hydraulic bulge test ( <b>EM24_51</b> ) A Sawodny (Friedrich-Alexander-Universität, Germany), M Merklein	Characterization of additively manufactured titanium grade 23 structures for application in medical implants ( <b>EM24_58</b> ) S Stammkoetter (TU Dortmund University, Germany), M Teschke, I Koek, P Junker, F Walther
12:20	Load path modification by adaption of clinched joint position ( <b>EM24_71</b> ) A Brosius (Technische Universität Dresden, Germany), C Steinfelder	Defect- and microstructure-based characterization of the fatigue behavior of additively manufactured titanium aluminides ( <b>EM24_59</b> ) M Teschke (TU Dortmund University, Germany), J Moritz, A Marquardt, C Leyens, C Körner, F Walther
12:40	On the effect of the third invariant on the strain distribution of isotropic materials subjected to the hole expansion test ( <b>EM24_72</b> ) MC Oliveira, DM Neto, JL Alves, LF Menezes (University of Coimbra, Portugal)	Enabling solidification processes of complex shapes using common additive manufacturing technologies: Initial experiences ( <b>EM24_68</b> ) L Robles-Lorite, R Dorado-Vicente (University of Jaén, Spain), E Torres-Jiménez, G. Khanh Pham, G Medina-Sánchez
<b>13:00-14:00</b>	<b>LUNCH BREAK</b>	
14:00*	Function-oriented manufacturing by means of process signatures ( <b>EM24_80</b> ) B Karpuschewski (University of Bremen, Germany), C Heinzl, L Langenhorst, D Meyer, J Sölter	
	<b>Session 3A – Roll forming (Chair: MC Oliveira and MM Kasaei)</b>	<b>Session 3B – Machining I (Chair: B Karpuschewski and FJG Silva)</b>
	<b>Room B032</b>	<b>Room B035</b>
14:40	Determining initial strip width in roll forming of steel pipes with high thickness-to-diameter ratios ( <b>EM24_31</b> ) MRK Arjmandi, HM Naeini, MM Kasaei, B Abbaszadeh (Tarbiat Modares University, Iran), MK Firouzjaei, LFM da Silva	A comparative wear evaluation of chromium-coated tools in the drilling of 7075-T6 aluminum alloy, AISI 1045 steel and stainless steel AISI 304 ( <b>EM24_26</b> ) MC Santos, GF Barbosa (Federal University of São Carlos, Brazil), SB Shiki
15:00	Development of micro roll forming process to fabricate microchannels with high aspect ratio ( <b>EM24_33</b> ) MK Firouzjaei (Tarbiat Modares University, Iran), HM Naeini, MM Kasaei, LFM da Silva	Correlation between vibration signal and roughness during milling of prehardened tool steel with Varacon-coated tools ( <b>EM24_98</b> ) RCM Sales-Contini (Technological College of São José dos Campos, São Paulo, Brazil), A. F. S. Mesquita, MA Arruda, NPV Sebbe, AFV Pedroso, FJG Silva, HM Lopes
15:20	On the prediction of ductile fracture in flexible roll forming ( <b>EM24_55</b> ) MM Firouzjaei, HM Naeini, MM Kasaei	Performances of innovative ceramic tools when turning Inconel 718 ( <b>EM24_52</b> ) N Pozzato (University of Padova, Italy), R

	(INEGI, Portugal), B Abbaszadeh, MK Firouzjaei, LFM da Silva	Bertolini, S Bruschi
15:40	Research and application on structural design of a novel electromagnetic sheet thickness adaptive roll forming auxiliary device ( <b>EM24_66</b> ) <u>F Han</u> (North China University of Technology, China), B Gu, X Chen	Vibrational and wear behavior analysis of taC-coated tools on Al/CFRP/Al stacks in the milling process ( <b>EM24_67</b> ) <u>RCM Sales-Contini</u> (Technological College of São José dos Campos, São Paulo, Brazil), MA Arruda, NPV Sebbe, AFV Pedroso, VFC Sousa, FJG Silva, HM Lopes, GF Pinto
<b>16:00-16:20</b>	<b>COFFEE BREAK</b>	
	<b>Session 4A – Joining I (Chair: LFM da Silva and A Akhavan-Safar)</b>	<b>Session 4B – Additive manufacturing III (Chair: O Barro and R Dorado-Vicente)</b>
	<b>Room B032</b>	<b>Room B035</b>
16:20	Experimental characterisation of a self-healing adhesive through pure and mixed-mode fracture tests ( <b>EM24_4</b> ) <u>AFV Pedroso</u> (Polytechnic of Porto, Portugal), RDSG Campilho, FJG Silva, RJB Rocha, RDFS Costa	Fabrication and characterization of Alvarez freeform lens produced by additive manufacturing ( <b>EM24_86</b> ) DS Reis, AC Branco, MA Leite, LF Reis, RJ Oliveira, <u>CM Vicente</u> (University of Lisbon, Portugal)
16:40	The performance of CFRP joints with bended adherends ( <b>EM24_14</b> ) <u>RCJ Carbas</u> (INEGI, Portugal), VDC Pires, EAS Marques, LFM da Silva	Evaluation of the roughness of AISI 316 stainless steel produced by laser powder bed fusion ( <b>EM24_50</b> ) P Nogueira, DC Silva, AP Serro, P Lopes, L Oliveira, JL Alves, L Reis, J Magrinho, C Santos, MJ Carmezim, R Cláudio, AM Deus, MB Silva, <u>MF Vaz</u> (University of Lisbon, Portugal)
17:00	Adhesive bonding technology in automotive battery pack manufacturing and dismantling: A comprehensive review ( <b>EM24_18</b> ) <u>VC Rodrigues</u> (INEGI, Portugal), M Kasaei, R Beygi, EAS Marques, RJC Carbas, LFM da Silva	Tailoring elastic modulus of biocompatible beta type Ti alloys by means of laser directed energy deposition ( <b>EM24_61</b> ) F Arias-González, A Rodríguez-Contreras, M Punset, JM Manero, <u>O Barro</u> (Universidad de Vigo, Spain), M Fernández-Arias, F Lusquiños, J Gil, J Pou
17:20	Cyclic creep testing of pressure-sensitive adhesives: Design and validation of a tailored apparatus ( <b>EM24_6</b> ) <u>BD Simões</u> (INEGI, Portugal), EMD Fernandes, EAS Marques, RJC Carbas, S Maul, P Stihler, P Weißgraeber, LFM da Silva	Characterization of the interdiffusion zones at the interfaces of extruded multi-material composites ( <b>EM24_77</b> ) <u>H Schneider</u> (Technische Universität Braunschweig, Germany), K Dilger, S Hartwig
17:40	A novel method to evaluate a bio-based, zero-thickness adhesive and its application to densified pine wood ( <b>EM24_9</b> ) <u>Sh Jalali</u> (INEGI, Portugal), CSP Borges, RJC Carbas, EAS Marques, LFM da Silva	Densification and microstructural evolution of multiple track aluminium-based samples produced by selective laser melting ( <b>EM24_82</b> ) <u>N Kekana</u> (Tshwane University of Technology, South Africa), MB Shongwe, K Mpofo, R Muvunzi
18:00	Bridging reliability and performance in semiconductor manufacturing: Insights	Production of wire frame structures by WAAM ( <b>EM24_83</b> )

	into bi-material interfaces ( <b>EM24_12</b> ) <u>A Akhavan-Safar</u> (INEGI, Portugal), R Ferreira, RJC Carbas, EAS Marques, B Karunamurthy, LFM da Silva	DG Andrade, C Zhu, H Miranda, <u>DM Rodrigues</u> (University of Coimbra, Portugal)
19:00	<b>Poster session and RECEPTION</b>	
<b>Composites manufacturing</b>		
Poster 1	Bio-inspired helicoidal composite structure featuring graded variable ply pitch under transverse tensile loading ( <b>EM24_19</b> )	<u>H Malekinejad</u> (INEGI, Portugal), RCJ Carbas, EAS Marques, LFM da Silva
Poster 2	A review of design, evaluation, and optimization of brake pad system by utilization of palm kernel composite materials ( <b>EM24_88</b> )	<u>CE Chuka</u> (Nnamdi Azikiwe University, Nigeria), CD Ezeliora
<b>Machining</b>		
Poster 3	A review of injection-mold materials and their conventional and non-conventional machining processes ( <b>EM24_5</b> )	FR Nogueira, <u>AFV Pedroso</u> (Polytechnic of Porto, Portugal), VFC Sousa, NPV Sebbe, RDSG Campilho, FJG Silva, RCM Sales-Contini, MLS Barbosa
Poster 4	Comparative study of coupled cryogenic fluid projection techniques in the drilling of Ti6Al4V alloy ( <b>EM24_38</b> )	<u>J Salguero</u> (University of Cadiz, Spain), I del Sol, M Batista, A Sambruno, JM Vazquez-Martinez
Poster 5	On the application of cryogenic cooling in the drilling of aerospace carbon-fiber ( <b>EM24_39</b> )	<u>M Batista</u> (University of Cadiz, Spain), JM Vazquez-Martinez, J Salguero, F Bañon, A Gomez, I del Sol
Poster 6	Study of surface finishing in the longitudinal turning process by vibration analysis in AISI 4340 annealed ( <b>EM24_90</b> )	<u>LP Silva</u> (Pontifical Catholic University of Minas Gerais, Brazil), GC Silva, Y Pacheco
Poster 7	A novel cheap and flexible tool to minimize the waste of raw materials in the manufacturing of abrasive products ( <b>EM24_36</b> )	<u>J Pereira</u> (Polytechnic of Porto, Portugal), FJG Silva, RDSG Campilho, RP Martinho, RCM Sales-Contini, AFV Pedroso, NPV Sebbe
<b>Forming</b>		
Poster 8	The influence of cross-wedge rolling on the microstructure of railway axles made of EA1N steel ( <b>EM24_92</b> )	<u>T Bulzak</u> (Lublin University of Technology, Poland), T Kusiak, K Lis, Ł Wójcik
Poster 9	Comparative analysis of two methods of rolling rail axle forgings ( <b>EM24_93</b> )	<u>G Winiarski</u> (Lublin University of Technology, Poland), T Bulzak, Ł Wójcik, K Lis
Poster 10	Analysis of the effect of tapered roll geometry on the parameters of the skew rolling process of a railway axle forging ( <b>EM24_94</b> )	<u>K Lis</u> (Lublin University of Technology, Poland), T Bulzak, T Kusiak, Ł Wójcik, G Winiarski
Poster 11	Fatigue analysis of a cross wedge rolled rail axle ( <b>EM24_95</b> )	<u>Ł Wójcik</u> (Lublin University of Technology, Poland), G Winiarski, T Bulzak, K Lis
Poster 12	Modelling material fracture using a new damage criterion in metal forming processes ( <b>EM24_96</b> )	<u>J Tomczak</u> (Lublin University of Technology, Poland), T Bulzak, Z Pater
Poster 13	Fatigue analysis of the material of a railway axle manufactured in a CNC rolling mill ( <b>EM24_97</b> )	<u>T Kusiak</u> (Lublin University of Technology, Poland), T Bulzak, K Lis, Ł Wójcik, G Winiarski

<b>Additive manufacturing</b>		
Poster 14	Application of additive manufacturing to microbiobial fuel cells <b>(EM24_69)</b>	<u>R Dorado-Vicente</u> (University of Jaén, Spain), E Torres-Jiménez, G Medina-Sánchez, T Kegl
Poster 15	Numerical and experimental study of out-of-plane compression behaviour of honeycomb structures with mass gradient produced by additive manufacturing <b>(EM24_81)</b>	T Rua, E Copin, AM Deus, <u>MF Vaz</u> (University of Lisbon, Portugal)
Poster 16	Challenges on extrusion-based additive manufacturing of thermoplastic polyurethane <b>(EM24_49)</b>	M Sardinha, L Ferreira, T Ramos, L Reis, <u>MF Vaz</u> (University of Lisbon, Portugal)
Poster 17	Development of bio-based designs for the manufacture of vehicle structures <b>(EM24_24)</b>	<u>EAS Marques</u> (University of Porto, Portugal), LPF Garrido, S Jalali, RJC Carbas, LFM da Silva
<b>Joining</b>		
Poster 18	Establishment of the fracture behaviour of a film adhesive using the direct method <b>(EM24_7)</b>	<u>BD Simões</u> (INEGI, Portugal), DS Correia, EAS Marques, RJC Carbas, LFM da Silva
Poster 19	A novel approach to reinforce wooden substrates with bio-adhesive for single lap joints <b>(EM24_10)</b>	<u>Sh Jalali</u> (INEGI, Portugal), CSP Borges, RJC Carbas, EAS Marques, LFM da Silva
Poster 20	Adhesive flow analysis in manufacturing hybrid bolted/bonded joints <b>(EM24_13)</b>	F Ricca, <u>A Akhavan-Safar</u> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
Poster 21	The performance of adhesive joints with hybrid adherends <b>(EM24_15)</b>	RJC Carbas (INEGI, Portugal), EAS Marques, LFM da Silva
Poster 22	Development and study of a new silane based polyurethane hybrid flexible adhesive - Mechanical characterization, joint testing and numerical modelling <b>(EM24_17)</b>	<u>VC Rodrigues</u> (INEGI, Portugal), EAS Marques, RJC Carbas, M Youngberg, A Dussaud, R Beygi, LFM da Silva
Poster 23	A comprehensive review exploring the improvement of fatigue life and strength in adhesively bonded composite joints <b>(EM24_20)</b>	<u>H Malekinejad</u> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
Poster 24	Joining of aluminium/steel sheets with dissimilar thicknesses by FSW: Joint design and mechanism of welding <b>(EM24_27)</b>	<u>TOG Teixeira</u> (University of Porto, Portugal), R Beygi, RJC Carbas, EAS Marques, LFM da Silva
Poster 25	Electrically assisted solid-state spot joining of cast aluminum alloy A365-T6 <b>(EM24_40)</b>	VC Phan, H-S Choi, <u>S-H Choo</u> (University of Ulsan, Republic of Korea), TT Do, T-AB Thi, S Basak, S-T Hong
Poster 26	Fatigue performance of adhesive joints in engineering structures: the impact of temperature and loading mode <b>(EM24_48)</b>	<u>M Ribas</u> (INEGI, Portugal), A Akhavan-Safar, RJC Carbas, EAS Marques, S Wenig, LFM da Silva
Poster 27	Adhesive joining technology in manufacturing engineering structures: Effects of loading mode and service temperature on fracture behaviour <b>(EM24_47)</b>	<u>M Ribas</u> (INEGI, Portugal), A Akhavan-Safar, RJC Carbas, EAS Marques, S Wenig, LFM da Silva
Poster 28	Fatigue analysis of hybrid busbars produced by a novel joining process <b>(EM24_54)</b>	<u>BFA Silva</u> (University of Porto, Portugal), MM Kasaei, A Akhavan-Safar, RJC Carbas, EAS Marques, LFM

		da Silva
Poster 29	The influence of UV curing in the properties of an acrylic PSA ( <b>EM24_74</b> )	<u>CMC Ferreira</u> (INEGI, Portugal), <u>VCMB Rodrigues</u> , <u>BD Simões</u> , <u>EAS Marques</u> , <u>RJC Carbas</u> , <u>LFM da Silva</u>
Poster 30	Adhesives in veterinary medicine: a review ( <b>EM24_75</b> )	<u>CMC Ferreira</u> (INEGI, Portugal), <u>BD Simões</u> , <u>EAS Marques</u> , <u>RJC Carbas</u> , <u>LFM da Silva</u>
<b>Optimization of manufacturing processes</b>		
Poster 31	A genetic algorithm approach to solve a textile job scheduling problem, aiming tardiness minimization ( <b>EM24_1</b> )	<u>TB Cepeda</u> (Citeve, Portugal), <u>I Gomes</u> , <u>JN Oliveira</u> , <u>J Silva</u> , <u>C Silva</u>
Poster 32	Design of a connector assembly equipment for the automotive industry ( <b>EM24_42</b> )	<u>PMP Curralo</u> , <u>RDSG Campilho</u> (Polytechnic of Porto, Portugal), <u>JAP Pereira</u> , <u>FJG Silva</u>
Poster 33	Metal equipment for producing high-purity materials for OLED technology ( <b>EM24_53</b> )	<u>AD Barkanov</u> (Russian Academy of Sciences, Russia), <u>VA Solomatina</u> , <u>SA Paveliev</u> , <u>ICH Avetissov</u>
Poster 34	Numerical simulation of CdTe crystal growth by VGF technique assisted by axial low-frequency oscillations of the melt ( <b>EM24_56</b> )	<u>O Nefedov</u> , <u>A Dovnarivich</u> , <u>V Kostikov</u> , <u>E Mozhevitina</u> , <u>D Bocharnikov</u> , <u>I Avetissov</u> (D Mendeleev University of Chemical Technology of Russia, Russia)
Poster 35	Application of stochastic processes in forecasting the plastic manufacturing industry ( <b>EM24_91</b> )	<u>NN Mbeledogu</u> (Nnamdi Azikiwe University, Nigeria), <u>CD Ezeliara</u>



<b>Friday 10 May 2024</b>	
8:40*	Comprehensive analysis of the dual role of the yield criterion in the numerical simulation of aluminium sheet metal forming processes <b>(EM24_73)</b> <u>MC Oliveira</u> (University of Coimbra, Portugal)
	<b>Session 5 – Forming II (Chair: LF Menezes and A Brosius)</b>
	<b>Room B032</b>
9:20	Formability limits by local buckling in thin-walled tubes with square cross-sections <b>(EM24_76)</b> <u>IM Almeida</u> (University of Lisbon, Portugal), <u>JPG Magrinho</u> , <u>MB Silva</u> , <u>PAF Martins</u>
9:40	Assessment of the fatigue performance of forging die steels in corrosive and lubricant media <b>(EM24_45)</b> <u>E Calvo-García</u> , <u>S Valverde</u> , <u>A Riveiro</u> , <u>D Álvarez</u> , <u>M Román</u> , <u>C Magdalena</u> , <u>P Pou-Álvarez</u> , <u>A Badaoui</u> , <u>P Moreira</u> , <u>R Comesaña</u> (University of Vigo, Spain)
10:00	Hole hemming of hybrid busbars in electric vehicle batteries <b>(EM24_32)</b> <u>DPM da Costa</u> , <u>MM Kasaei</u> (INEGI, Portugal), <u>RJC Carbas</u> , <u>EAS Marques</u> , <u>LFM da Silva</u>
10:20	Numerical and experimental investigation on the material flow in an orbital forming process to join functional components from dissimilar materials <b>(EM24_84)</b> <u>A Harms</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), <u>A Hetzel</u> , <u>M Lechner</u> , <u>M Merklein</u>
10:40-11:00	<b>COFFEE BREAK</b>
	<b>Session 6 – Various manufacturing processes (Chair: MF Vaz and R Comesaña)</b>
	<b>Room B032</b>
11:00	Environmentally friendly additive manufacturing of glass and glass-ceramics by laser assisted technology <b>(EM24_44)</b> <u>R Comesaña</u> (University of Vigo, Spain), <u>J del Val</u> , <u>O Barro</u> , <u>M Fernández-Arias</u> , <u>A Riveiro</u> , <u>E Calvo-García</u> , <u>F Quintero</u> , <u>M Boutinguiza</u> , <u>F Lusquiños</u> , <u>J Pou</u>
11:20	The use of zirconia masks produced by FFF technologies in plasma spray projection applications <b>(EM24_85)</b> <u>S Barbeiro</u> (University of Lisbon, Portugal), <u>M Leite</u>
11:40	Comparative analysis of mechanical properties in dental prosthetics: Laser directed energy deposition vs. Traditional fabrication techniques <b>(EM24_62)</b> <u>O Barro</u> (University of Vigo, Spain), <u>F Arias-González</u> , <u>F Lusquiños</u> , <u>R Comesaña</u> , <u>D Wallerstein</u> , <u>F Gómez-Baño</u> , <u>J Pou</u>
12:00	Predicting residual distortion and stress in parts produced by laser-powder bed fusion using the inherent strain method <b>(EM24_70)</b> <u>BM Marques</u> , <u>DM Neto</u> (University of Coimbra, Portugal), <u>MC Oliveira</u> , <u>JL Alves</u> , <u>LF Menezes</u>
12:20	Rapid precipitation and strength restoration of AA6061-T6 under artificial aging assisted by electropulsing treatment <b>(EM24_37)</b> <u>ML Geng</u> (University of Ulsan, Republic of Korea), <u>LH Cai</u> , <u>YX Zhao</u> , <u>TA Bui-Tui</u> , <u>YJ Kim</u> , <u>HN Han</u> , <u>S-T Hong</u>
12:40	Study of the influence of different quenching oils on the hardness and microstructure of carburizing steels <b>(EM24_3)</b> <u>M Tavares</u> , <u>P Duarte</u> , <u>P Canhola</u> , <u>J Lino Alves</u> (University of Porto, Portugal)
13:00-14:00	<b>LUNCH BREAK</b>

14:00*	Joining dissimilar materials with very different properties using a novel process based on plastic deformation ( <b>EM24_64</b> ) <u>M Kasaei</u> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
	<b>Session 7 – Joining II (Chair: EAS Marques and IMF Bragança)</b>
	<b>Room B032</b>
14:40	Approach for reproducible and low deformation diffusion bonding of parts with arbitrary geometries ( <b>EM24_22</b> ) <u>T Gietzelt</u> (Karlsruhe Institute of Technology, Germany), V Toth, M Kraut
15:00	Development of novel welding processes for high performance multi-material applications ( <b>EM24_23</b> ) <u>EAS Marques</u> (University of Porto, Portugal), R Beygi, RJC Carbas LFM da Silva
15:20	Numerical analysis of FSW of Aluminum to steel with dissimilar thicknesses ( <b>EM24_30</b> ) <u>A Omid</u> , <u>R Beygi</u> (Arak University, Iran), G Eisaabadi, EAS Marques, RJC Carbas, LFM da Silva
15:40	A new deformable self-clinching fastener ( <b>EM24_29</b> ) <u>JPM Pragana</u> , <u>RFV Sampaio</u> , <u>RG Clara</u> , <u>IMF Bragança</u> (Instituto Politécnico de Lisboa, Portugal), <u>CMA Silva</u> , <u>PAF Martins</u>
16:00-16:20	<b>COFFEE BREAK</b>
	<b>Session 8 – Optimization of manufacturing processes (Chair: RV Rao and RDSG Campilho)</b>
	<b>Room B032</b>
16:20	A new design of metal injection system overcoming sprue backflow problems ( <b>EM24_35</b> ) <u>P Leitão</u> (Polytechnic of Porto, Portugal), <u>FJG Silva</u> , <u>RDSG Campilho</u> , <u>AFV Pedroso</u> , <u>NPV Sebbe</u> , <u>RCM Sales-Contini</u> , <u>AG Pinto</u>
16:40	Automating the manufacturing process of control cables for the automotive components industry ( <b>EM24_41</b> ) <u>JPM Pinto</u> , <u>RDSG Campilho</u> (Polytechnic of Porto, Portugal), <u>FJG Silva</u>
17:00	Evaluation of Pareto optimal solutions in manufacturing using BHARAT method ( <b>EM24_63</b> ) <u>RV Rao</u> (Sardar Vallabhbhai National Institute of Technology, India)
17:20	Assessing complexity in industrial 3D scanning: A methodological approach to geometrical feature classification in product inspection ( <b>EM24_78</b> ) <u>C Lin</u> (Queen's University Belfast, UK), <u>MAA Rahman</u> , <u>PG Maropoulos</u>
17:40	The Integrated Design Management (IDM) tool ( <b>EM24_79</b> ) <u>V Carneiro</u> (University of Porto, Porto, Portugal), <u>A Barata da Rocha</u> , <u>B Rangel</u> , <u>JL Alves</u>
18:00	Exploratory analysis and development of sustainable Lean Six Sigma methodologies integration for effective operation and risk mitigation in manufacturing sectors ( <b>EM24_89</b> ) <u>CD Ezeliora</u> (Nnamdi Azikiwe University, Nigeria), <u>CE Chuka</u> , <u>CC Okpala</u>
20:00	<b>EM2024 BANQUET (Porto caves Calém)</b>