



Programme

# AJP 2021

2<sup>ND</sup> INTERNATIONAL CONFERENCE  
ON ADVANCED JOINING PROCESSES

21-22 October 2021 - Sintra, Portugal

4<sup>th</sup> In-situ workshop 2021

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**Thursday 21 October 2021**

8:40	<b>AJP 2021 Opening (Room Alexandre Herculano)</b>		
	<b>Session 1A – Joining by forming I</b> (Chair: PAF Martins and R Beygi)	<b>Session 1B – Laser welding I</b> (Chair: K Dilger and A Astarita)	<b>Session 1C – 4th In-situ workshop I</b> (Chair: T Kannengießer and AJ Ramirez)
	<b>Room Alexandre Herculano</b>	<b>Room Lord Byron</b>	<b>Room Castelo Branco</b>
9:00	Investigation of the potential for the fabrication and forming of adaptronic semi-finished parts joined by cold formed pin structures ( <b>AJP21_3</b> ) <u>M Kraus</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), S Suttner, M Merklein	Dissimilar Al-Cu joining by QCW fiber wobble laser welding: Experimental investigations ( <b>AJP21_21</b> ) <u>M Moradi</u> (Coventry University, UK), S Nath, J Lawrence	The quality control of road barrier systems ( <b>AJP21_1</b> ) <u>C Paglia</u> (University of Applied Sciences of Southern Switzerland, Switzerland), C Mosca
9:20	Joinability of the high-strength aluminium alloy AA7075 in shear-clinching processes ( <b>AJP21_11</b> ) <u>S Wiesenmayer</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), M Merklein	Adjustment of chemical composition with dissimilar filler wire in 1.4301 austenitic stainless steel to influence residual stress in laser beam welds ( <b>AJP21_27</b> ) <u>E Akyel</u> (RWTH Aachen University, Germany), M Gamerdinger, S Olschok, U Reisgen, A Schwedt, J Mayer	In situ neutron diffraction strain measurement in the area of the weld pool during welding ( <b>AJP21_148</b> ) <u>R Sharma</u> (RWTH Aachen University, Germany)
9:40	Selective application of different forming temperatures for individual process stages in a rivet manufacturing process with high nitrogen steel ( <b>AJP21_12</b> ) <u>C Kuball</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), B Uhe, G Meschut, M Merklein	Study of the influence of laser welding parameters on the weld quality and microstructure of S355 structural steel ( <b>AJP21_35</b> ) <u>B Costa</u> , <u>FJG Silva</u> (Polytechnic of Porto, Portugal), VFC Sousa, RDSG Campilho, M Tojal, JS Fecheira	Development strategies for advanced light-metal feedstock wires for wire-based additive manufacturing ( <b>AJP21_9</b> ) <u>T Klein</u> (AIT Austrian Institute of Technology, Austria), A Großalber, SE Hoque, M Schnall, W Fragner
10:00	Effect of the tool geometry on microstructure and geometrical features of clinched aluminium ( <b>AJP21_15</b> ) <u>L Ewenz</u> (TU Dresden, Germany), M Zimmermann	Local shielding gas supply in remote laser beam welding ( <b>AJP21_65</b> ) <u>K Schrickler</u> (Technische Universität Ilmenau, Germany), A Baumann, JP Bergmann	The influence of hydrogen on strain-induced martensite formation and cracking in SMSS investigated simultaneously by ED-XRD and by X-ray radiography ( <b>AJP21_23</b> ) <u>A Griesche</u> (Federal Institute for Materials Research and Testing, Germany), B Pfretzschner, Th Kannengiesser
10:20	Investigation of a novel ultrasonic-assisted staking process for mechanical fasteners ( <b>AJP21_25</b> ) <u>M Jäckisch</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), M Merklein	High precision adjustment of welding depth during laser micro welding of copper using superpositioned spatial and temporal power modulation ( <b>AJP21_67</b> ) <u>M Hummel</u> (RWTH Aachen University, Germany), A Häusler, A Gillner	In situ investigation of phase distribution and weld solidification in duplex stainless steels using laser-induced breakdown spectroscopy ( <b>AJP21_24</b> ) <u>L Quackatz</u> (Bundesanstalt für Materialforschung und -prüfung, Germany), A Griesche, T Kannengießer
10:40-11:00	<b>COFFEE BREAK</b>		
	<b>Session 2A – Advanced joining processes I</b> (Chair: U Reisgen and A Brosius)	<b>Session 2B – Adhesive bonding I</b> (Chair: RD Adams and EAS Marques)	<b>Session 2C – 4th In-situ workshop II</b> (Chair: T Kannengießer and A Kromm)
	<b>Room Alexandre Herculano</b>	<b>Room Lord Byron</b>	<b>Room Castelo Branco</b>
11:00	Process of joining continuous fiber reinforced thermoplastic/steel hybrid parts via undercutting pin structures and infrared heating ( <b>AJP21_16</b> ) <u>J Popp</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), D Drummer	Effect of thermally expandable additives on the mechanical and reversibility performance of adhesive hybrid composite-aluminum joints ( <b>AJP21_2</b> ) <u>G Piazza</u> , <u>MG Romagnoli</u> , <u>G Belingardi</u> , <u>SA Nassar</u> (Oakland University, USA)	Phase transformation and strain evolution during welding of low transformation temperature alloys ( <b>AJP21_31</b> ) <u>A Kromm</u> (Bundesanstalt für Materialforschung und -prüfung, Germany), J Gibmeier, J Dixneit, F Vollert, T Kannengiesser

11:20	<p>About the interaction between bonding temperature, contact pressure and deformation on tensile strength and elongation at rupture of diffusion bonded AISI 304 (<b>AJP21_18</b>)</p> <p><u>T Gietzelt</u> (KIT, Karlsruhe, Germany), V Toth, M Walter</p>	<p>Mode II creep fracture energy assessment of adhesive materials (<b>AJP21_7</b>)</p> <p><u>RM Carneiro Neto</u> (Federal University of Rio de Janeiro, Brazil), A Akhavan-Safar, EM Sampaio, JT Assis, LFM da Silva</p>	<p>In-situ identification of steel microstructure by using convolutional neural network (<b>AJP21_157</b>)</p> <p>K Tsustui, K Matsumoto, K Moriguchi, K Hayashi, S Morito, <u>H Terasaki</u> (Kumamoto University, Japan)</p>
11:40	<p>Development and evaluation of the ultrasonic welding process of copper – Aluminium dissimilar materials (<b>AJP21_36</b>)</p> <p><u>RGN Silva</u> (Belgian Welding Institute, Belgium), S De Meester, K Faes, W De Waele</p>	<p>Change in mode I energy release rate of structural acrylic adhesives with temperature and loading rate (<b>AJP21_159</b>)</p> <p>A Hayashi, <u>Y Sekiguchi</u> (Tokyo Institute of Technology, Japan), C Sato</p>	<p>Laser micro welding with fiber lasers for battery and fuel cell based electromobility (<b>AJP21_63</b>)</p> <p><u>E Haddad</u> (Fraunhofer Institute for Laser Technology ILT, Germany), O Katz, J Helm, A Olowinsky, A Gillner</p>
12:00	<p>Numerical investigation of the material structure of fibre-reinforced thermoplastic resulting from a bladder assisted moulding process (<b>AJP21_48</b>)</p> <p><u>B Gröger</u> (Technische Universität Dresden, Germany), V Würfel, A Hornig, M Gude</p>	<p>Characterization of adhesive curing reactions through rapid heat rheology (<b>AJP21_52</b>)</p> <p><u>S Glaser</u> (Technische Universität Braunschweig, Germany), E Stammen, K Dilger</p>	<p>Real time X-ray analysis under laboratory conditions using high-flux MetalJet sources (<b>AJP21_69</b>)</p> <p>D Apel, <u>M Boin</u> (Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany), F Garcia-Moreno, Ch Genzel, P Kamm, M Klaus, R Mainz, M Meixner, RC Wimpory</p>
12:20	<p>Quality prediction of disturbed ultrasonic metal weldings (<b>AJP21_57</b>)</p> <p><u>FW Müller</u> (RWTH Aachen University, Germany), C Mirz, S Weil, A Schiebahn, B Corves, U Reisgen</p>	<p>Mechanical properties of aluminum-silicone adhesive joints under the effect of tenside contamination (<b>AJP21_53</b>)</p> <p><u>CSP Borges</u> (INEGI, Portugal), RR Brandão, A Akhavan-Safar, EAS Marques, RJC Carbas, C Ueffing, P Weissgraeber, LFM da Silva</p>	<p>Identification of joining points for a load-adapted shape in a body in white using steady-state vehicle simulations (<b>AJP21_90</b>)</p> <p><u>S Martin</u> (Paderborn University, Germany), J Schütte, C Bäumlner, W Sextro, T Tröster</p>
12:40	<p>Joining of hybrid semi-finished products from sheet metal by orbital forming (<b>AJP21_152</b>)</p> <p><u>A Hetzel</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), M Lechner, M Merklein</p>	<p>Sustainable laser pre-treatment for optimized bonding and welding results (<b>AJP21_171</b>)</p> <p><u>L Draack</u> (Clean Lasersysteme GmbH, Germany)</p>	<p>Simultaneous solid-state joining and forging of dissimilar steels with local rapid resistance heating (<b>AJP21_93</b>)</p> <p><u>TT Do</u> (University of Ulsan, Republic of Korea), TTA Bui, JS Lee, SH Lee, HN Han, ST Hong</p>
13:00-14:00	<b>LUNCH BREAK</b>		
	<b>Session 3A – Friction stir welding I</b> (Chair: R Beygi and K Dilger)	<b>Session 3B – Additive manufacturing</b> (Chair: U Reisgen and J Alexis)	<b>Session 3C – 4th In-situ workshop III</b> (Chair: T Kannengießer and A Kromm)
	<b>Room Alexandre Herculano</b>	<b>Room Lord Byron</b>	<b>Room Castelo Branco</b>
14:00	<p>Effect of welding parameters on mechanical properties of dissimilar Friction Stir Lap Welds of AA5052 and AISI1010 (<b>AJP21_107</b>)</p> <p>LN Tufaro, <u>HG Svoboda</u> (Universidad de Buenos Aires, Argentina)</p>	<p>Characterization of layer properties for components made of lignin based filaments manufactured by material extrusion (<b>AJP21_5</b>)</p> <p><u>M Fiedler</u> (Volkswagen Group Innovation, Germany), F Fischer, K Droeder</p>	<p>Determination of residual stress evolution during repair welding of high-strength steel components (<b>AJP21_95</b>)</p> <p><u>A Becker</u> (BAM Federal Institute for Materials Research and Testing, Germany), D Schröpfer, A Kromm, T Kannengießer</p>
14:20	<p>Influence of tool wear on weld quality in refill friction stir spot welding of aluminium (<b>AJP21_17</b>)</p> <p><u>D Lauterbach</u> (Volkswagen AG, Germany), D Keil, A Harms, M Schulze, K Dilger</p>	<p>Multidirectional wire-arc additive manufacturing with pure object-manipulation: Process introduction and first prototypes (<b>AJP21_68</b>)</p> <p>B Corves, M Hüsing, <u>M Schmitz</u> (RWTH Aachen University, Germany), J Wiartalla, U Reisgen, R Sharma, K Parmar, S Mann, L Oster</p>	<p>Longitudinal mechanical joining of extruded aluminium profiles with increased tightness requirements (<b>AJP21_100</b>)</p> <p><u>F Kneuper</u> (TU Dortmund University, Germany), S Neumann, O Hering, AE Tekkaya, G Meschut</p>
14:40	<p>Force feedback based quality monitoring of the friction stir welding process, utilizing external measurement data to detect internal weld defects (<b>AJP21_19</b>)</p> <p><u>P Rabe</u> (RWTH Aachen University, Germany), A Schiebahn, U Reisgen</p>	<p>Nickel-iron-alloy modification to enhance additively welded microstructure for subsequent milling (<b>AJP21_76</b>)</p> <p>A Eissel, <u>K Treutler</u> (Institute of Welding and Machining, Germany), V Wesling, L Engelking, D Schröpfer, T Kannengießer</p>	<p>In-situ analysis of stress and microstructure evolution during TIG welding of high-alloy steels using energy-dispersive X-ray diffraction (<b>AJP21_106</b>)</p> <p><u>N Hempel</u> (Technical University of Munich, Germany), T Nitschke-Pagel, M Klaus, C Genzel, K Dilger</p>
15:00	<p>Electric performance of fastened hybrid busbars: an experimental and numerical study (<b>AJP21_20</b>)</p> <p>RFV Sampaio, JPM Pragana, IMF Bragança, CMA Silva, CV Nielsen, <u>PAF Martins</u> (University of Lisbon, Portugal)</p>	<p>Towards manufacturing of 3D parts made of highly dissimilar metals (<b>AJP21_116</b>)</p> <p><u>L Deillon</u> (ETH Zürich, Switzerland), X Li, P Zehnder, B Neirinck, M Bambach</p>	<p>Simultaneous joining and forging of a copper/aluminum bimetallic ring component via friction stirring (<b>AJP21_115</b>)</p> <p><u>M Mondal</u> (University of Ulsan, South Korea), S Basak, K Gao, S-T Hong, H Choi, S Lee, HN Han</p>

15:20	Utilizing a ductile damage criterion for fracture analysis of a dissimilar aluminum/steel joint made by FSW ( <b>AJP21_29</b> ) <u>R Beygi</u> (INEGI, Portugal), A Akhavan-Safar, RJC Carbas, A Queiros, EAS Marques, LFM da Silva	Influence of process parameters on microstructure and mechanical properties of Ti6Al4V parts obtained by Wire-Arc Additive Manufacturing using a plasma heat source ( <b>AJP21_127</b> ) A Ty, <u>Y Balcaen</u> (Université de Toulouse, France), T Baizeau, M Mokhtari, J Alexis	In-situ analysis of reverted austenite in supermartensitic stainless steel weld deposits ( <b>AJP21_109</b> ) S Zappa, J Hoyos, <u>H Svoboda</u> (University of Buenos Aires, Argentina)
15:40	Experimental investigation for modelling hardness of AA 2050-T34 FSW weld ( <b>AJP21_32</b> ) <u>S Galisson</u> (University Bretagne Sud, France), D Carron, P Le Masson, G Stamoulis, E Feulvarch, G Surdon	Laser welding of AISI 316L stainless steel produced by additive manufacturing ( <b>AJP21_128</b> ) P Pommier, M Mokhtari, Y Balcaen, F Abroug, <u>J Alexis</u> (Université de Toulouse, France)	FIB-assisted method for in-situ cold-welding of aluminium at the microscale ( <b>AJP21_138</b> ) <u>A Celotto</u> (Norwegian University of Science and Technology, Norway), Ø Grong, R Holmestad, JA Sørhaug, J Torgersen, PE Vullum, F Berto
16:00-16:20	<b>COFFEE BREAK</b>		
	<b>Session 4A – Joining by forming II</b> (Chair: M Merklein and PAF Martins)	<b>Session 4B – Computational models</b> (Chair: AMP de Jesus and SB Leen)	<b>Session 4C – Laser welding II</b> (Chair: EAS Marques and FJG Silva)
	<b>Room Alexandre Herculano</b>	<b>Room Lord Byron</b>	<b>Room Castelo Branco</b>
16:20	Increasing flexibility of self-piercing riveting by reducing tool-geometry combinations using cluster analysis in the application of multi-material design ( <b>AJP21_33</b> ) <u>F Kappe</u> (Paderborn University, Germany), L Schadow, M Bobbert, G Meschut	Numerical investigation of a method for the identification of friction coefficients in sheet metal materials for clinching processes ( <b>AJP21_101</b> ) <u>CR Bielak</u> (Paderborn University, Germany), M Böhnke, M Bobbert, G Meschut	Systematic adjustment of the joining time in pulsed laser beam welding of aluminum-copper joints by means of a closed-loop control ( <b>AJP21_77</b> ) <u>M Seibold</u> (Technische Universität Ilmenau, Germany), K Schrickler, JP Bergmann
16:40	Joining sheets made from dissimilar materials by hole hemming ( <b>AJP21_170</b> ) <u>MM Kasaei</u> (INEGI, Portugal), LFM da Silva	Finite element simulation of additive manufacturing for injection moulding dies ( <b>AJP21_141</b> ) J Zhou, RA Barrett, <u>SB Leen</u> (NUI Galway, Ireland)	High-speed imaging of vapor plume in the treatment of dissimilar aluminum/titanium interface with Yb:YAG laser pulse ( <b>AJP21_126</b> ) <u>M Raja-Kumar</u> (Université de Bourgogne-Franche France), I Tomashchuk, J-M Jouvard, M Duband
17:00	Influence of the surface condition on the binding mechanisms of clinched joints ( <b>AJP21_50</b> ) <u>J Kalich</u> (TU Dresden, Germany), U Füssel	Gleeble simulation of welding for thermo-mechanical fatigue of 9Cr steels ( <b>AJP21_142</b> ) P MacArdghail, I Sabirov, J Llorca, N Harrison, RA Barrett, <u>SB Leen</u> (NUI Galway, Ireland)	Laser welding of 16MnCr5 butt welds with gap: Resulting weld quality and fatigue strength ( <b>AJP21_10</b> ) <u>J Hensel</u> (Technische Universität Braunschweig, Germany), M Köhler, K Dilger
17:20	Investigation of the shear-clinching behavior of single- and multilayered AA6014 sheets produced via cyclic accumulative roll bonding ( <b>AJP21_51</b> ) <u>B Zettl</u> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), S Wiesenmayer, M Kraus, M Merklein	Model-based joining process design for the body shop process chain ( <b>AJP21_172</b> ) <u>C Schwarz</u> (Fraunhofer Institute for Machine Tools and Forming Technology IWU, Germany), T Falk, M Puschmann, P Ackert, R Mauermann, W-G Drossel	Microstructure and mechanical properties of low carbon steel pulsed laser welded ( <b>AJP21_86</b> ) M Chludzinski, RE Santos, C Churiaque, M Ortega-Iguña, <u>JM Sánchez-Amaya</u> (University of Cádiz, Spain)
17:40	Form-fit joining of hybrid busbars using a flexible tool demonstrator ( <b>AJP21_59</b> ) A Reichel, RFV Sampaio, JPM Pragana, IMF Bragança, CMA Silva, <u>PAF Martins</u> (University of Lisbon, Portugal)	The master S-N curve method for fatigue assessment of welded bridge structures: case studies and computational aspects ( <b>AJP21_163</b> ) <u>G Alencar</u> (ISOESTE Metálica, Brazil), AMP de Jesus, JGS Silva, R Caçada	A comparative study of through transmission laser, induction and ultrasonic welding for assembling PEEK composites ( <b>AJP21_150</b> ) <u>F Chabert</u> (University of Toulouse, France), A Korycki, M Bonmatin, C Garnier
18:00	Influence of heat treatment on the suitability for clinching of the aluminium casting alloy AISi9Mn ( <b>AJP21_62</b> ) <u>M Neuser</u> (Paderborn University, Germany), <u>M Böhnke</u> , O Grydin, M Bobbert, M Schaper, G Meschut	Critical distance based approach for the total fatigue life prediction of similar and dissimilar single lap adhesive joints ( <b>AJP21_124</b> ) <u>FC Sousa</u> (INEGI, Portugal), A Akhavan-Safar, LFM da Silva	Automated joining of thermoplastic aircraft fuselage shells ( <b>AJP21_155</b> ) <u>L Brieskorn</u> (Fraunhofer IFAM, Germany), T Kühn
19:00	<b>Poster session and RECEPTION</b>		
	<b>Laser welding</b>		

Poster 1	Simulation of transient heat transfer and phase transformation in Laser Beam Welding for low alloy steel and studying its influences on the welding residual stresses <b>(AJP21_28)</b>	KR Krishna Murthy, <a href="#">F AkyeI</a> (RWTH Aachen University, Germany), U Reisgen, S Olschok
Poster 2	Study of the mechanical characteristics and process parameters of a laser welded fibre reinforced polymer <b>(AJP21_56)</b>	<a href="#">LRR Silva</a> (University of Porto, Portugal), EAS Marques, RJC Carbas, A Gillner, LFM da Silva
Poster 3	Experimental study on optimization of laser welding parameters in PBT GF30 joined by fillet joint <b>(AJP21_165)</b>	<a href="#">LRR Silva</a> (University of Porto, Portugal), EAS Marques, RJC Carbas, A Gillner, LFM da Silva

### Friction stir welding

Poster 4	Investigation of the directional characteristics of the emitted airborne sound by Friction Stir Welding for online process monitoring <b>(AJP21_136)</b>	<a href="#">B Stoll</a> (Technische Universität Ilmenau, Germany), M Rohe, J Hildebrand, JP Bergmann, T Krüger, A Kátai, K Breitbarth, J Bös
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### Additive manufacturing

Poster 5	Multi-metal printing with affordable material extrusion and VAT photopolymerization <b>(AJP21_96)</b>	<a href="#">M Mousapour</a> (Aalto University, Finland), M Salmi
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### Adhesive bonding

Poster 6	Influence of magnetization on thermal and debonding properties of TEPs <b>(AJP21_14)</b>	<a href="#">J Abenojar</a> (University Carlos III de Madrid, Spain), S Lopez de Armentia, JC del Real, M Martinez
Poster 7	Mixed mode cohesive laws of adhesives using a direct approach and SCB specimens <b>(AJP21_39)</b>	<a href="#">A Ajdani</a> (Iran University of Science and Technology, Iran), A Akhavan-Safar, MR Ayatollahi, LFM da Silva
Poster 8	Shear fracture energy measurement of adhesives using the cut central plies technique <b>(AJP21_47)</b>	<a href="#">A Akhavan-Safar</a> (INEGI, Portugal), S Safaei, M Jalalvand, LFM da Silva
Poster 9	Effects of strain rate on the mechanical response of bi-adhesive single lap joints <b>(AJP21_41)</b>	<a href="#">A Akhavan-Safar</a> (INEGI, Portugal), Sh Jalali, G Eisaabadi, R Beygi, LFM da Silva
Poster 10	The influence of cyclic impacts on mode II fracture energy of adhesives <b>(AJP21_42)</b>	<a href="#">A Akhavan-Safar</a> (INEGI, Portugal), <a href="#">Sh Jalali</a> , MR Ayatollahi, LFM da Silva
Poster 11	Effects of cyclic ageing on the tensile performance of adhesive joints <b>(AJP21_44)</b>	<a href="#">JA da Costa</a> (University of Porto, Portugal), A Akhavan-Safar, RJC Carbas, EAS Marques, LFM da Silva
Poster 12	Optimum length of recycle carbon fibre in an epoxy composite and the influence of APPT treatment on the adhesion fibre-matrix <b>(AJP21_60)</b>	<a href="#">MA Martinez</a> (University Carlos III de Madrid, Spain), JA Butenegro, M Bahrami, J Abenojar
Poster 13	The performance of hybrid composite joints reinforced with different metallic laminates adherends <b>(AJP21_71)</b>	<a href="#">F Malbizar</a> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
Poster 14	Numerical assessment of strain rate in an adhesive layer throughout DCB and ENF tests <b>(AJP21_89)</b>	<a href="#">PDP Nunes</a> (INEGI, Portugal), EAS Marques, A Akhavan, RJC Carbas, LFM da Silva
Poster 15	Curing state effects on the tensile cohesive response of an epoxy based adhesive <b>(AJP21_45)</b>	<a href="#">P Teixeira</a> (INEGI, Portugal), A Akhavan-Safar, RJC Carbas, LFM da Silva
Poster 16	Practical implementation and validation of a novel process for manufacturing milling tools using adhesive bonding <b>(AJP21_135)</b>	<a href="#">DS Correia</a> (INEGI, Portugal), EAS Marques, RJC Carbas, PJC das Neves, LFM da Silva
Poster 17	Effects of cyclic ageing on mode I fatigue response of adhesive joints <b>(AJP21_43)</b>	JA da Costa, <a href="#">A Akhavan-Safar</a> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM da Silva
Poster 18	The design of bonded joints for impact applications – a practical methodology <b>(AJP21_55)</b>	<a href="#">EAS Marques</a> (INEGI, Portugal), CSP Borges, PDP Nunes, A Akhavan-Safar, RJC Carbas, LFM da Silva
Poster 19	Durability of cfrp-steel bi-material adhesive joint in saline environment for marine application <b>(AJP21_132)</b>	<a href="#">PR Jaiswal</a> (Ghent University, Belgium), RI Kumar, K Rooms, J Rousseau, W De Waele
Poster 20	Combination and interaction of ageing parameters on single lap shear adhesive joints <b>(AJP21_178)</b>	S Fevery, <a href="#">SK Latré</a> (KU Leuven, Belgium), D Vandepitte, S Debruyne, H Hallez

### Joining by forming

Poster 21	Electrical contact behavior of clinched joints under short circuit conditions <b>(AJP21_177)</b>	U Füssel, G Reschke, <u>J Kalich</u> (TU Dresden, Germany), St Schlegel, Ch Hildmann, J Kiefer
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### Advanced joining processes

Poster 22	Investigation of the electrical power at ultrasonic metal welding and its potential use for process monitoring <b>(AJP21_58)</b>	<u>FW Müller</u> (RWTH Aachen University, Germany), C Hensen, R. Seibt, A Schiebahn, U Reisgen
Poster 23	Hole-to-hole assembly on aeronautical structures <b>(AJP21_81)</b>	<u>G Pichon</u> (INSA/UPS/ISAE-SUPAERO/Mines Albi, France), A Daidié, E Paroissien, A Benaben, C Chirol
Poster 24	Influence of the base materials positioning on the interface properties of Cu-SS explosive welds <b>(AJP21_112)</b>	GHSFL Carvalho, I Galvão, <u>RM Leal</u> (Universidade de Coimbra, Portugal), D Beltrão, R Mendes, A Loureiro
Poster 25	Detecting process anomalies in the GMAW process by acoustic sensing with a CNN for Classification <b>(AJP21_119)</b>	<u>M Rohe</u> (Technische Universität Ilmenau, Germany), BN Stoll, J Hildebrand, JP Bergmann
Poster 26	Maximisation of the achievable bond width in capacitor-discharge welding of annular axial seams on gear components <b>(AJP21_174)</b>	<u>J Lindenmaier</u> (Mercedes-Benz AG, Germany), T Hertzschuch, U Füssel
Poster 27	Automated shape and form correction for the stress less joining of aircraft fuselage shells <b>(AJP21_175)</b>	D Valencia, <u>L Brieskorn</u> (Fraunhofer IFAM, Germany)
Poster 28	In-Situ quality measurement in joining of dissimilar high-strength steels based on electric parameters of cobot and manual MIG/MAG welding applied to electric vehicles structures <b>(AJP21_179)</b>	<u>RGN Silva</u> (Belgian Welding Institute, Belgium), K Faes, L Adinolfi, J Romo, J Lamontanara, P Perlo
Poster 29	Microstructure and mechanical properties of CNT-reinforced AlSi7Mg0,6 Alloy processed by Selective Laser Melting <b>(AJP21_181)</b>	<u>D Soppyryayeva</u> (BTU Cottbus-Senftenberg, Germany), A Obrosof, K Miach, V Michailov

### Computational models

Poster 30	Numerical analysis of bolt joints considering the tightening process until failure <b>(AJP21_104)</b>	<u>C Foissac</u> (Université de Toulouse, France), A Daidié, S Segonds, C Chirol
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### 4th In-situ workshop

Poster 31	In-situ identification of steel microstructure from crystal orientation data acquired by EBSD <b>(AJP21_61)</b>	<u>T Oyama</u> (Kumamoto University, Japan), K Tsustui, K Moriguch, K Hayashi, S Morito, H Terasaki
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## Friday 22 October 2021

	<b>Session 5A – Fatigue of joints</b> (Chair: H Remes and AMP de Jesus)	<b>Session 5B – Hybrid joining I</b> (Chair: H Fricke and A Loureiro)	<b>Session 5C – Joining by forming III</b> (Chair: JY Min and CMA Silva)
	<b>Room Alexandre Herculano</b>	<b>Room Lord Byron</b>	<b>Room Castelo Branco</b>
8:40	Fatigue strength assessment of austempered ductile iron-to-steel dissimilar arc-welded tube-to-pin joints according to local approaches <b>(AJP21_22)</b> <u>G Meneghetti, A Campagnolo</u> (University of Padova, Italy), D Michelazzi, S Masaggia	Improvement of the resistance spot welding and weldbonding of Al-Mg-Si alloys by using cladding technology: An optical and mechanical characterization study <b>(AJP21_66)</b> <u>P Bamberg</u> (RWTH University, Germany), R Seewald, A Schiebahn, U Reisgen, N Precoma, M Epperlein	A new injection lap riveting process <b>(AJP21_182)</b> <u>FR Ferreira, JPM Pragana, IMF Bragança, CMA Silva, PAF Martins</u> (University of Lisbon, Portugal)
9:00	Strength of three-sheet spot welds in tensile shear, cross-tension, peel and fatigue tests for welds with critical nugget sizes <b>(AJP21_34)</b> <u>K Siimut</u> (Technical University of Denmark, Denmark), MFR Zwicker, CV Nielsen	Hybrid grouted joints for wind energy applications <b>(AJP21_73)</b> <u>H Fricke</u> (Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Germany), S Myslicki, M Albiez, J Boretzki	Experimental investigation on induction heating assisted flow drill riveting of high strength aluminum alloy <b>(AJP21_78)</b> <u>K Zhang</u> (Tongji University, China), HL Wan, JY Min, PX Liao, JP Lin



9:20	<p>Replacing welding with adhesive bonding in a real structural component: Static strength and fatigue life evaluation <b>(AJP21_37)</b></p> <p>J Antelo, <a href="#">A Akhavan-Safar</a> (INEGI, Portugal), RJC Carbas, EAS Marques, LFM.da Silva, R Goyal, N Cuvillier, I Maus, Y Takahashi, J Sherwood</p>	<p>Pre-tensioned hybrid joints for structural steel applications <b>(AJP21_74)</b></p> <p>H Fricke, T Vallée, T Gerke, <a href="#">C Denkert</a> (Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Germany)</p>	<p>Investigation of the influence of formed, non-rotationally symmetrical pin geometries and their effect on the joint quality of steel and aluminum sheets by direct pin pressing <b>(AJP21_84)</b></p> <p><a href="#">D Römisch</a> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), M Kraus, M Merklein</p>
9:40	<p>Global and local approaches for the fatigue design of snug-tight and preloaded thin galvanized steel bolted joints <b>(AJP21_167)</b></p> <p><a href="#">CDS Souto</a> (University of Porto, Portugal), VMG Gomes, LFRC da Silva, MV Figueiredo, JAFO Correia, G Lesiuk, AA Fernandes, AMP de Jesus</p>	<p>Direct joining of high-strength galvanized steel and polybutylene terephthalate using hot water treatment <b>(AJP21_82)</b></p> <p><a href="#">WY Chen</a> (The University of Tokyo, Japan), F Kimura, Y Kajihara</p>	<p>Consideration of the manufacturing history of sheet metal components in mechanical joining processes <b>(AJP21_111)</b></p> <p><a href="#">P Heyser</a> (Paderborn University, Germany), S Wiesenmayer, P Frey, T Nehls, C Scharr, W Flügge, M Merklein, G Meschut</p>
10:00	<p>Influence of classified pore contents on the quasi-static and cyclic strength properties of the welded joint in gas-shielded metal arc welding of galvanized, high-strength steels <b>(AJP21_79)</b></p> <p><a href="#">M Sarpe</a> (University of Technology Clausthal, Germany), V Wesling, K Treutler, P Dewald, HC Schmale</p>	<p>Bonding behavior of fusion bonded hybrid joints with press hardened steel and glass mat reinforced thermoplastic on a demonstrator scale <b>(AJP21_133)</b></p> <p><a href="#">C Gundlach</a> (Technische Universität Braunschweig, Germany), J Wehmeyer, B-A Behrens, K Dilger, S Hartwig</p>	<p>Investigation of the influence of the tumbling angle on a tumbling self-piercing riveting process <b>(AJP21_117)</b></p> <p><a href="#">S Wituschek</a> (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), M Lechner</p>
10:20	<p>The measurement of weld notch parameters for fatigue strength assessment of laser-hybrid welded joints <b>(AJP21_137)</b></p> <p><a href="#">A Niraula</a> (Aalto University, Finland), H Remes, P Lehto, A Niemelä</p>	<p>Selected properties of armor 500 steel welded joints by hybrid PTA-MAG <b>(AJP21_145)</b></p> <p>B Skowronska, M Bober, M Baranowski, J Szulc, <a href="#">T Chmielewski</a> (Warsaw University of Technology, Poland)</p>	<p>Increasing the accuracy of clinching process simulations by modeling the friction as a function of local joining process parameters <b>(AJP21_118)</b></p> <p><a href="#">M Rossel</a> (Paderborn University, Germany), G Meschut</p>
10:40-11:00	<b>COFFEE BREAK</b>		
	<p><b>Session 6A – Advanced joining processes II</b></p> <p>(Chair: A Campagnolo and K Schricker)</p>	<p><b>Session 6B – Adhesive bonding II</b></p> <p>(Chair: JC Del Real and RJC Carbas)</p>	<p><b>Session 6C – Friction stir welding II</b></p> <p>(Chair: M Moradi and S Böhm)</p>
	<b>Room Alexandre Herculano</b>	<b>Room Lord Byron</b>	<b>Room Castelo Branco</b>
11:00	<p>Research on brazed joints reinforced by three-dimensional network graphene structure <b>(AJP21_6)</b></p> <p><a href="#">Z Sun</a> (Harbin Institute of Technology, China), YK Ma, B Zhang, LX Zhang</p>	<p>The influence of polymeric laminate amount in the strength and failure mode of hybrid joints <b>(AJP21_70)</b></p> <p><a href="#">RJC Carbas</a> (INEGI, Portugal), F Malbizar, EAS Marques, LFM da Silva</p>	<p>Internal defects identification in friction stir welds monitoring acoustic emission <b>(AJP21_83)</b></p> <p><a href="#">D Ambrosio</a> (INP/ENIT 65016, France), V Wagner, G Desein, M Fazzini, M Yahiaoui, O Cahuc</p>
11:20	<p>Joint properties and numerical analysis of high nitrogen steel brazed by Ag-Cu-Ni metal filler <b>(AJP21_8)</b></p> <p><a href="#">S Zhang</a> (Harbin Institute of Technology, China), P He, X Wang, Z Li</p>	<p>Accelerated curing of adhesively bonded G-FRP tube connections <b>(AJP21_75)</b></p> <p><a href="#">H Fricke</a> (Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Germany), M Voss, T Vallée</p>	<p>Process comparison of friction stir welding, MIG, laser beam welding and laser hybrid welding in joining aluminium EN AW-6063 T6 <b>(AJP21_97)</b></p> <p>I Golubev, <a href="#">A Meyer</a> (RIFTEC GmbH, Germany)</p>
11:40	<p>Flow modifier effects on metal-plastic injection molded direct joining <b>(AJP21_92)</b></p> <p><a href="#">S Wang</a> (The University of Tokyo, Japan), F Kimura, S Zhao, E Yamaguchi, Y Ito, Y Kajihara</p>	<p>Evaluation of the application of high performance adhesive tapes on steel coated with epoxy paint <b>(AJP21_85)</b></p> <p><a href="#">M Ortega-Iguña</a> (University of Cádiz, Spain), M Chludzinski, C Churiaque, RE dos Santos, JM Sanchez-Amaya</p>	<p>Local mechanical properties of thin sheet AA6061 aluminum alloy friction stir welds evaluated by Small Punch Test (SPT) <b>(AJP21_108)</b></p> <p><a href="#">H Svoboda</a> (Universidad de Buenos Aires, Argentina), LN Tufaro, FJ Belzunce, C Rodríguez</p>
12:00	<p>Characterisation of hot cracking phenomena in TIG welds of high and medium entropy alloy <b>(AJP21_98)</b></p> <p><a href="#">T Richter</a> (Bundesanstalt für Materialforschung und -prüfung, Germany), M Giese, M Rhode, D.Schroepfer</p>	<p>Fracture envelopes as function of strain rate <b>(AJP21_88)</b></p> <p><a href="#">PDP Nunes</a> (INEGI, Portugal), EAS Marques, A Akhavan, RJC Carbas, LFM da Silva</p>	<p>Torque and temperature generation during FSW of three dissimilar Al alloys <b>(AJP21_125)</b></p> <p>N Manuel, D Beltrão, I Galvão, RM Leal, JD Costa, <a href="#">A Loureiro</a> (Universidade de Coimbra, Portugal)</p>
12:20	<p>One side and double sided HLAW on butt T-joints 15 mm thickness of EH36 steel <b>(AJP21_87)</b></p> <p>C Churiaque, <a href="#">JM Sánchez-Amaya</a> (University of Cádiz, Spain), Ö Üstündağ, A Gumenyuk, M Rethmeier</p>	<p>Laser surface preparation for adhesive bonding of aluminum <b>(AJP21_94)</b></p> <p>N Cuvillier, S Kirchner, <a href="#">J Lecomte</a> (IRT Saint Exupéry, France), B Martin, M Péron</p>	<p>Dynamic tensile deformation of tailored welded high strength AA7075 aluminum blanks processed following friction-stir-welding <b>(AJP21_130)</b></p> <p>E Scharif, A Suckau, T Wegener, M Hatzky, M Kahlmeyer, SV Sajadifar, U Weidig, T Niendorf, <a href="#">S Böhm</a> (University of Kassel, Germany), K Steinhoff</p>

12:40	<p>Ultrasonic welding of CF/PEEK composites: Influence of welding parameters on temperature profiles and on mechanical resistance of welds <b>(AJP21_110)</b></p> <p><u>M Bonmatin</u> (Université de Toulouse, France), F Chabert, G Bernhart, T Cutard, T Djilali</p>	<p>Metallic contaminated surface inspection by Non Destructive Testing before bonding <b>(AJP21_99)</b></p> <p><u>S Kirchner</u> (IRT Saint Exupéry, France), C Gestraud, J Lecomte, L Ferres, M Péron, N Cuvillier</p>	<p>Metallographic structure and mechanical properties of Friction Stir Spot Welded joints between dissimilar DP steels <b>(AJP21_139)</b></p> <p><u>M De Maddis</u> (Politecnico di Torino, Italy), V Lunetto, P Russo Spena</p>
13:00-14:00	<b>LUNCH BREAK</b>		
	<p><b>Session 7A – Adhesive bonding III</b> (Chair: L Goglio and RDSG Campilho)</p>	<p><b>Session 7B – Advanced joining processes III</b> (Chair: T Chmielewski and S Nassar)</p>	<p><b>Session 7C – Additive manufacturing</b> (Chair: U Reigen and J Alexis)</p>
	<b>Room Alexandre Herculano</b>	<b>Room Lord Byron</b>	<b>Room Castelo Branco</b>
14:00	<p>Does adhesive bonding increase or decrease vibration damping? <b>(AJP21_144)</b></p> <p><u>RD Adams</u> (University of Bristol, UK)</p>	<p>Microstructure and mechanical behaviour of Al-Ti-SS three-dissimilar joints produced by explosive welding <b>(AJP21_113)</b></p> <p><u>I Galvão</u> (Universidade de Coimbra, Portugal), GHSFL Carvalho, RM Leal, D Beltrão, R Mendes, A Loureiro</p>	<p>Additive manufacturing with borosilicate and soda-lime glass <b>(AJP21_146)</b></p> <p><u>F Fröhlich</u> (Technische Universität Ilmenau, Germany), J Hildebrand, JP Bergmann</p>
14:20	<p>Tensile fatigue crack growth of a ductile adhesive subjected to single and periodic overloads <b>(AJP21_72)</b></p> <p><u>FC Sousa</u> (INEGI, Portugal), A Akhavan-Safar, LFM da Silva</p>	<p>Separation of multi-material polymer combinations produced by joining using pin-like structures <b>(AJP21_26)</b></p> <p><u>M Wolf</u> (Friedrich-Alexander-University Erlangen-Nuremberg, Germany), D Drummer</p>	<p>Efficient functionalization of textile reinforced thermoplastic composites with thermoplastic elastomers via generative hybridisation <b>(AJP21_154)</b></p> <p><u>C Vogel</u> (Technische Universität Dresden, Germany), J Maier, T Kastner, M Gude, N Modler</p>
14:40	<p>A novel in-situ computed tomography measurement technique for advanced analytics of adhesive bonds <b>(AJP21_131)</b></p> <p><u>J Philipp</u> (Technische Universität Braunschweig, Germany), E Stammen, K Dilger</p>	<p>Optimizing the Ag filler metal content on the TIG welding of Cu-Cu and Cu-Steel pipes joints for carbon dioxide refrigeration plants <b>(AJP21_105)</b></p> <p>B Costa, <u>FJG Silva</u> (Polytechnic of Porto, Portugal), VFC Sousa, RDSG Campilho, M Tojal, J Fecheira</p>	<p>Functionally graded materials fabricated by direct laser deposition for gear repair <b>(AJP21_160)</b></p> <p><u>AA Ferreira</u> (University of Porto, Portugal), AR Reis, JP Sousa, PC Romio, J Cruz, JH Seabra, MF Vieira</p>
15:00	<p>Numerical analysis of the mixed-mode fracture of bonded joints depending on the adhesive thickness <b>(AJP21_121)</b></p> <p><u>AFL Macedo</u>, <u>RDSG Campilho</u> (Polytechnic of Porto, Portugal), FGS Silva, MA Bellali</p>	<p>Laser-induction welding of nodular grey cast iron using oscillating beam guidance – Microstructural and mechanical characterization <b>(AJP21_162)</b></p> <p><u>N Sommer</u> (University of Kassel, Germany), S Böhm</p>	<p>Role of SiC powder in reducing the porosity and increasing the carbon content in wire arc additive manufacturing of carbon steel <b>(AJP21_30)</b></p> <p><u>MB Hesari</u>, <u>R Beygi</u> (INEGI, Portugal), LFM da Silva</p>
15:20	<p>A temperature and conversion dependent cohesive zone approach for the calculation of process induced damage in adhesive bondlines of multi-material structures <b>(AJP21_129)</b></p> <p><u>M Griese</u> (Technische Universität Braunschweig, Germany), N Günther, E Stammen, K Dilger</p>	<p>The influence of residual stresses and dislocation density of dissimilar AA6082/AA6060 joints fabricated by the FSW process on their electrochemical properties <b>(AJP21_168)</b></p> <p><u>A Laska</u> (Gdansk University of Technology, Poland), M Szkodo</p>	<p>Development of welded-bonded hybrid joints via additive manufacturing with conductive thermoplastic filaments <b>(AJP21_164)</b></p> <p><u>M Frascio</u>, F Moroni, M Reis, M Avalle, <u>EAS Marques</u> (INEGI, Portugal), RJC Carbas, LFM da Silva</p>
15:40	<p>Consideration of manufacturing induced adhesive damage in automotive simulations <b>(AJP21_120)</b></p> <p><u>N Günther</u> (Technische Universität Braunschweig, Germany), M Griese, E Stammen, K Dilger, E Ince, K Koutaiba</p>	<p>A novel approach for improving productivity and efficiency of smart manufacturing systems <b>(AJP21_173)</b></p> <p><u>MN Huu</u>, <u>A Nguyen Van</u> (Murata Welding Laboratory, Japan), A Murata, LC Hieu, M Tanaka, DD Xuan, T Nguyen Van, T Nguyen Van, T P Tam</p>	<p>Effect of fabrication strategies on AlSi10Mg alloy properties elaborated by laser beam melting <b>(AJP21_166)</b></p> <p><u>N Chambrin</u> (Université de Toulouse, France), O Dalverny, J-M Cloue, O Brucelle, J Alexis</p>
16:00-16:20	<b>COFFEE BREAK</b>		
	<p><b>Session 8A – Adhesive bonding IV</b> (Chair: C Sato and LFM da Silva)</p>	<p><b>Session 8B – Joining by plastic deformation</b> (Chair: CV Nielsen and MM Kasaei)</p>	<p><b>Session 8C – Hybrid joining II</b> (Chair: H Fricke and A Akhavan-Safar)</p>
	<b>Room Alexandre Herculano</b>	<b>Room Lord Byron</b>	<b>Room Castelo Branco</b>
16:20	<p>The influence of water and contamination on the mechanical properties of silicone adhesive applied before and after curing <b>(AJP21_54)</b></p> <p><u>CSP Borges</u> (INEGI, Portugal), RR Brandão, A Akhavan-Safar, EAS Marques, RJC Carbas, C Ueffing, P Weissgraber, LFM da Silva</p>	<p>Sustainability and LCA analysis of friction stir welding: joining of tailored blanks <b>(AJP21_140)</b></p> <p><u>A Astarita</u> (University of Naples "Federico II", Italy), E Cozzolino, R Della Gatta, V Lampitella, A Silvestri</p>	<p>Inline-Thermoclinching – a robust joining process for hybrid structures with textile reinforced thermoplastic composites and metallic components <b>(AJP21_153)</b></p> <p><u>C Vogel</u> (Technische Universität Dresden, Germany), B Gröger, M Gude</p>



16:40	Influence of accelerated corrosion on bi-material steel-CFRP double-lap joints bonded with thick adhesive ( <b>AJP21_132</b> ) <u>PR Jaiswal</u> (Ghent University, Belgium), RI Kumar, K Rooms, J Rousseau, W De Waele	Multi-material joining using friction stir spot riveting ( <b>AJP21_143</b> ) S Eslami, D Braga, V Infante, <u>P Moreira</u> (INEGI, Portugal)	Electrically assisted pressure joining of copper and aluminum alloys ( <b>AJP21_114</b> ) <u>TTA Bui</u> (University of Ulsan, Republic of Korea), TT Do, ST Hong, MJ Kim
17:00	Cohesive zone parametric analysis in the tensile impact strength of tubular adhesive joints ( <b>AJP21_122</b> ) AFMV Silva, LMC Peres, <u>BDSG Campilho</u> (Polytechnic of Porto, Portugal), RJB Rocha, FGS Silva	Characterization of lateral offsets in clinch points with computed tomography and transient dynamic analysis ( <b>AJP21_123</b> ) B Sadeghian (Technische Universität Dresden, Germany), <u>D Köhler</u> , J Troschitz, R Kupfer, M Gude, A Brosius	Load bearing behaviour of thermoplastic composite/metal hollow structures with multiscale form closure ( <b>AJP21_156</b> ) B Grütznert (Fraunhofer-Institute for Machine Tools and Forming Technology, Germany), V Würfel, R Müller
17:20	The influence of curing state on mechanical properties of an epoxy-based adhesive: Experimental characterization and numerical simulation ( <b>AJP21_46</b> ) <u>P Teixeira</u> (INEGI, Portugal), A Akhavan-Safar, RJC Carbas, LFM da Silva	Effect of FSW tool hardness on wear behavior in friction stir welding of AA-6060 T66 ( <b>AJP21_147</b> ) <u>M Hasieber</u> (Ilmenau University of Technology, Germany), A Zemlicka, M Grätzel, JP Bergmann	Novel joining process with self-flaring rivet: Experimental investigation of the parameters influencing the joining process and the joint properties ( <b>AJP21_158</b> ) <u>C Kraus</u> (Fraunhofer Institute for Machine Tools and Forming Technology Germany), W-G Drossel
17:40	Results of torsion tests to assess the shear response of adhesive joints ( <b>AJP21_161</b> ) S De La Pierre, F De Marco, M Ferraris, <u>L Goglio</u> (Politecnico di Torino, Italy), D Paolino	Abnormal microhardness distribution of 2024-T351 aluminium alloy welded via impulse friction stir welding ( <b>AJP21_180</b> ) <u>I Morozova</u> (Brandenburg University of Technology Cottbus-Senftenberg, Germany), A Króllicka, A Obrosof, A Naumov, V Michailov	Mechanical performance of hybrid bolted-bonded joints subjected to ageing conditions: Effects of leakage, ageing level, and overlap length ( <b>AJP21_40</b> ) <u>F Delzendehrooy</u> (INEGI, Portugal), A Akhavan-Safar, AQ Barbosa, RJC Carbas, EAS Marques, LFM da Silva
18:00	Numerical optimization of bonded joints for the manufacture of edge milling tools ( <b>AJP21_134</b> ) <u>DS Correia</u> (INEGI, Portugal), EAS Marques, RJC Carbas, PJC das Neves, LFM da Silva	Damage analysis in hemming of advanced high strength steel sheets ( <b>AJP21_169</b> ) <u>MM Kasaei</u> (INEGI, Portugal), LFM da Silva	Mode I fracture energy assessment of adhesives using dissimilar metal/composite DCB joints subjected to cyclic ageing conditions ( <b>AJP21_38</b> ) <u>A Akhavan-Safar</u> (INEGI, Portugal), M Moazzami, MR Ayatollah, ST De Freitas, JA Poulis, LFM da Silva
20:00	<b>AJP2021 BANQUET (Casa dos Penedos)</b>		