AB2019

5th International Conference on Structural Adhesive Bonding

Programme

11 | 12 July, 2019

Faculty of Engineering – University of Porto
Porto, Portugal

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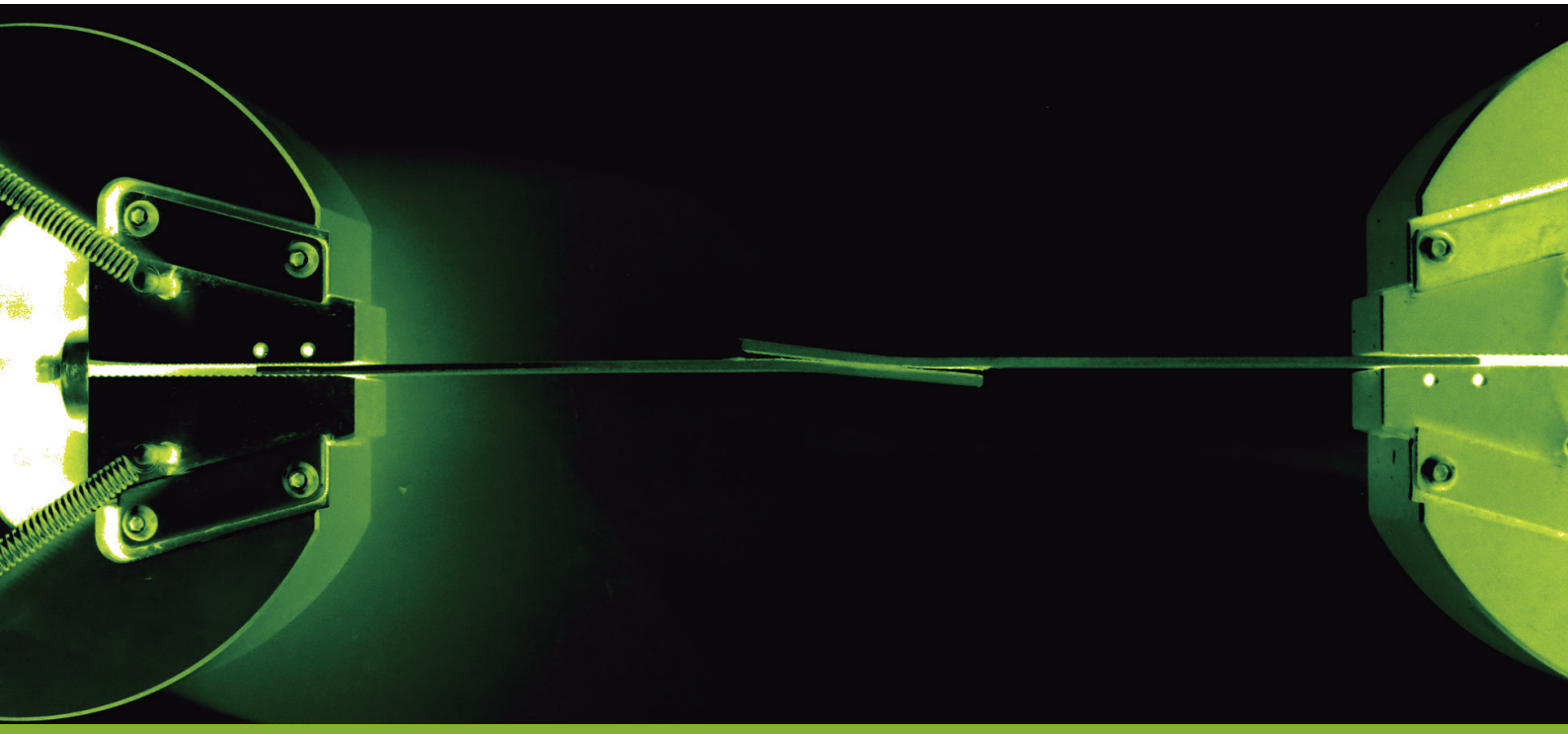

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THURSDAY 11 JULY 2019

8:40	***AB 2019 Opening (Room A101, also called 'Auditorium')***		
	Session 1A – Modelling (Chair: R Sauer and A Biel)	**Session 1B – Adhesion and surface treatments I** (Chair: M Brogly and J Holtmannspötter)	**Session 1C – Adhesives development I** (Chair: A Lutz and F Aran-Ais)
	Room A101 (Auditorium)	***Room B032***	***Room B035***
9:00	Simplified stress analysis of multilayered adhesively bonded metallic structures **(AB19_26)** K Sekmen (ISAE-SUPAERO, France), E Paroissien, F Lachaud	Laser surface preparation for adhesive bonding of cfrp material **(AB19_31)** N Cuvillier, J Lecomte (IRT Saint Exupéry, France), P Lespade, B Martin, A Mercier	Photo-degradation of ethylene butyl acrylate copolymer adhesive blends for conservation of cultural heritage **(AB19_34)** CA Del Grosso, JA Poulis (Delft University of Technology, The Netherlands), ER de la Rie
9:20	A 1D enriched finite element model of a single lap joint for the mechanical modeling of bonded assemblies **(AB19_68)** TH Nguyen (ENSTA Bretagne, France), P Le Grognec	Tangential shearing of adhesive contacts **(AB19_37)** A Papangelo (Hamburg University of Technology, Germany), M Ciavarella, J Scheibert	Thermal conductivity and mechanical properties of epoxy-based adhesives modified with graphite for fuel cell applications **(AB19_41)** P Rzeczkowski (Leibniz-Institut für Polymerforschung Dresden e.V., Germany), P Pötschke, B Krause
9:40	Generic modelling of adhesively bonded structures **(AB19_78)** S Debruyne (KU Leuven, Belgium), Z Poupeye, H Devriendt, B Pluymers, I Van den Weyenberg, P Campestrini	Washability of surface functionalization after physical surface treatment of polymers without shortening adhesion **(AB19_39)** E Arikan (WIWeB, Germany), J Holtmannspötter, H-J Gudladt	Manufacturing of biodegradable polymer reinforced with carbon fiber: study of wettability and adhesion **(AB19_53)** S Lopez de Armentia (Universidad Carlos III de Madrid, Spain), S Vazquez, J Abenojar, MA Martinez
10:00	Bulk adhesive damage modelling in the context of generic adhesive bond modelling **(AB19_88)** Z Poupeye (KU Leuven, Belgium), W Desmet, S Debruyne	Similarity of adhesion mechanisms for high-strength bonding of thermosets and thermoplastics **(AB19_35)** J Holtmannspötter (WIWeB, Germany), E Arikan, F Zimmer, H-J Gudladt	Nano-carbon enhanced structural adhesive technology through functionalization **(AB19_77)** C Jeenjitkaew (Element Materials Technology, UK), S Royo, K McEwan, J Mortimer, M Thornton
10:20	A coupled thermo-chemo-mechanical contact formulation for adhesive joints **(AB19_157)** RA Sauer (RWTH Aachen University, Germany), TX Doung, K Mandadapu	Are adhesion theories still true at the nanoscale? An atomic force microscopy investigation **(AB19_90)** M Brogly (Université de Haute-Alsace, France)	Exploring a novel straightforward synthetic route to produce bio-sourced polyurethane wood adhesives **(AB19_98)** A Tenorio-Alfonso (Universidad de Huelva, Spain), MC Sánchez, JM Franco
10:40-11:00	***COFFEE BREAK (Room under the Auditorium)***		
	Session 2A – Joint design I (Chair: R Campilho and N Carrere)	**Session 2B – Adhesive properties I** (Chair: E Dragoni and R Carbas)	**Session 2C – Adhesion and surface treatments II** (Chair: R Créac'hcadec and G Critchlow)
	Room A101 (Auditorium)	***Room B032***	***Room B035***
11:00	Localized stiffening of bonded lap shear joints **(AB19_3)** N Tortorella (Deere & Company, Moline USA), H Portillo, R Goyal, M El-zein	On the limitations of the LEFM to describe the fracture resistance of structural adhesives submitted to mixed-mode loading **(AB19_1)** G Stamoulis (Université de Bretagne Occidentale, France), N Carrere	Surface morphology influences of composite adherends under fatigue loading **(AB19_96)** T Thäsler (Bundeswehr University Munich, Germany), J Hotmannspötter, H-J Gudladt
11:20	Mechanoluminescent study of mechanical event toward fracture during cross tension and lap-shear test **(AB19_194)** N Terasaki (National Institute of Advanced Industrial Science and Technology, Japan), Y Fujio, Y Sakata, S Horiuchi, H Akiyama	Fracture analysis of structural adhesives: Introducing a new benchmark for adhesive performance **(AB19_4)** MH Brandtner-Hafner (FRACTURE ANALYTICS, Austria)	End milling of CFRP for the preparation of adhesive bonded joints - simulation and investigation of material separation **(AB19_48)** J de Freese (WIWeB, Germany), J Holtmannspötter

11:40	Uncertainties in floating roller peel testing of adhesively rebonded hybrid joints **(AB19_7)** DV Srinivasan (Nanyang Technological University Singapore, Singapore), A Agarwal, S Idapalapati	Two part polyurethane adhesives for bonding primerless to flame treated polypropylene **(AB19_186)** S Grunder (DuPont, Switzerland), S Schmatloch, A Lutz	Laser pretreatment of grade 2 titanium for hybrid Ti/CFRP adhesive joints in tail plane aerospace structures **(AB19_51)** U Lommatzsch (Fraunhofer IFAM, Germany), B Schneider, K Thiel, M Brede, FM de la Escalera, E Yasser
12:00	Numerical simulation of static and fatigue debonding growth in composite bonded joints containing bolts as crack Stoppers **(AB19_104)** IS Floros, KI Tserpes (University of Patras, Greece)	Image-based high strain rate tests for adhesives **(AB19_40)** A Guigue, L Fletcher, R Seghir, F Pierron University of Southampton, UK)	Study of the durability of a glass/polymer interface – Modification of surface properties using glass corrosion and ionic diffusion **(AB19_54)** F Cavodeau (Université de Haute-Alsace, France), M Brogly, S Bistac, C Delaite, M Ferrand, Y Garnier, S Ingelaere
12:20	A methodology for the approached formulation of a macro-element for the simulation of bonded overlap with graded properties **(AB19_27)** B Ordonneau (ISAE-SUPAERO, France), E Paroissien, M Salaün, J Malrieu, A Guigue, S Schwartz	Rheometric study of the time-, temperature-, and frequency-dependent viscoelastic properties of a curing thermoset epoxy adhesive **(AB19_44)** PL Geiß (University of Kaiserslautern, Germany), F Kästner, M Schumann	The effect of the type of the substrate and its surface preparation on the pull-off strength of gypsum plasters **(AB19_57)** K Krzywiński (Wrocław University of Science and Technology, Poland), Ł Sadowski, M Łaszczak
12:40	Characterization of the behavior of a multi-material assembly in situations of time lag between thermal expansion and increase of rigidity during heating and cooling processes **(AB19_119)** LM da Silva (ENSTA Bretagne, France), C Cellard, L Sohier, P Dos Santos, D Debelley, R Créac'hcadec	Identification of elastic-plastic material laws for structural adhesive joints **(AB19_71)** N Ladwig (Technische Hochschule Mittelhessen, Germany), L Loh, S Marzi	Plasma = Plasma? Comparability assessment of atmospheric plasma (APP) treaters for CFRP surface treatment **(AB19_62)** T Koerwien (Airbus Defence and Space, Germany), F Zimmer, T Meer
13:00-14:00	***LUNCH BREAK (Room under the Auditorium)***		
	Session 3A – Joint design II (Chair: S Böhm and D Castagnetti)	**Session 3B – Adhesive properties II** (Chair: E Marques and P Geiß)	**Session 3C – Adhesion and surface treatments III** (Chair: A Bernasconi and H Poulis)
	Room A101 (Auditorium)	***Room B032***	***Room B035***
14:00	Elongation of polyurethane adhesive under high strain rate and low-temperature conditions **(AB19_184)** R Okumura (Tokyo Institute of Technology, Japan), K Shimamoto, Y Sekiguchi, C Sato	Experimental determination of cohesive laws in mixed-mode I+III **(AB19_70)** L Loh (Technische Hochschule Mittelhessen, Germany), I Kididane, S Marzi	Duplex anodic coatings (DAC) for high performance joining of aluminium alloys **(AB19_65)** GW Critchlow (Loughborough University, UK)
14:20	Premature failures in standard test specimens with composite materials induced by stress singularities in adhesive joints **(AB19_38)** A Barroso (University of Seville, Spain), JC Marín, V Mantič, F París	Numerical simulations of adhesive squeeze flow: a review **(AB19_22)** LA Silva (ISAE-SUPAERO, France), C Espinosa, LFM da Silva, E Paroissien, F Lachaud	Development of optical assemblies with flexible adhesives **(AB19_66)** V Bagiatis (Loughborough University, UK), GW Critchlow, S Wang
14:40	Cohesive zone model identification in mode I: parameters sensitivity **(AB19_27)** A Jaillon (ISAE-SUPAERO, France), J Jumel, F Lachaud, E Paroissien	Numerical investigations of a new fracture mechanical - Test setup on adhesive joints in mixed-mode I+III **(AB19_69)** F Bödeker (Technische Hochschule Mittelhessen, Germany), L Loh, S Marzi	Effect of adherend deflection on lap-shear tensile strength of laser-treated adhesive-bonded joints **(AB19_67)** HL Wan (Tongji University, China), JY Min, J Zhang, JP Lin, CC Sun, JR Ni
15:00	Stress analysis of double lap bi-material joints bonded with thick adhesive **(AB19_52)** MN Saleh (Delft University of Technology, The Netherlands), M Saeedifar, S Teixeira De Freitas, D Zarouchas	Influence of polymer/filler composition and processing on the properties of multifunctional adhesive wood bonds from polyurethane prepolymers I: Mechanical properties **(AB19_85)** C Winkler, J Konnerth, J Gibcke, U Schwarz (University of Applied Sciences Eberswalde, Germany)	The influence of texturing of the surface of concrete substrate on its adhesion to cement mortar overlay **(AB19_58)** Ł Sadowski, K Krzywiński (Wrocław University of Science and Technology, Poland), M Michoń
15:20	On the use LEFM, NLFM and CZM in the analysis of a DCB test **(AB19_173)** L Škec (University of Rijeka, Croatia), G Alfano, G Jelenić	Influence of polymer/filler composition and processing on the properties of multifunctional adhesive wood bonds from polyurethane prepolymers II: Electrical properties **(AB19_86)** C Winkler (University of Applied Sciences Eberswalde, Germany), J Konnerth, J Gibcke, U Schwarz	Atmospheric plasma treatment of glass fibres for control of interlaminar strength **(AB19_79)** DJH Cederløf (Denmarks Tekniske Universitet, Denmark), Y Kusano

15:40	Thin-ply composites on adhesively bonded joints **(AB19_117)** J Kupski (Delft University of Technology, Netherlands), S Teixeira de Freitas, D Zarouchas, R Benedictus	Mechanical issues due to shrinkage during polymerization of an adhesive **(AB19_92)** P Casari (Université de Nantes, France), M Péron, M Girard, S de Barros	The effect of amorphous silica nanospheres on the functional properties of the overlay and its adhesion to the concrete substrate **(AB19_127)** J Szymanowski (Wrocław University of Science and Technology, Poland), Ł Sadowski
16:00-16:20	***COFFEE BREAK (Room under the Auditorium)***		
	Session 4A – Joint design III (Chair: E Paroissien and S Teixeira de Freitas)	**Session 4B – Adhesive properties III** (Chair: T Vallée and E Marques)	**Session 4C – Adhesion and surface treatments IV** (Chair: M Budzik and C Sato)
	Room A101 (Auditorium)	***Room B032***	***Room B035***
16:20	Adhesive failure characterization using coupled criterion and cohesive zone modeling **(AB19_30)** TV Birro (ISAE-SUPAERO, France), E Paroissien, M Aufray, F Lachaud	Thermal characterization of two mono-component epoxy resins **(AB19_93)** J Abenojar (Universidad Carlos III de Madrid, Spain), B Enciso, M Pantoja, F Velasco, MA Martínez	Experimental study on the influence of coating layer on adhesive bonding characteristics of aluminium bonded lap shear samples exposed to cyclic heat and humid ageing conditions **(AB19_177)** R Vervaeke (KU Leuven, Belgium), D Vandepitte, S Debruyne
16:40	Cohesive zone modeling of mode I fracture processes at viscoelastic polyurethane-based adhesive joints **(AB19_72)** C Schmandt (Technische Hochschule Mittelhessen, Germany), S Marzi	Characterization of aluminum alloy-epoxy bonded joints with nanofibers obtained by electrospinning **(AB19_95)** D Cocchi, F Musiari, TM Brugo, A Pirondi (Università di Parma, Italy), A Zucchelli, F Campanini	Control of adhesion through geometrical enhancements **(AB19_130)** MA Dias, MK Budzik (Aarhus University, Denmark)
17:00	Intensity of singular stress field (ISSF) variation as a function of the Young's modulus in single lap adhesive joints **(AB19_118)** P Galvez (University Carlos III de Madrid, Spain), N Noda, R Takaki, Y Sano, T Miyazaki, J Abenojar, MA Martínez	Experimental investigation of the static shear strength of anaerobic adhesives under high pressure **(AB19_100)** P Corigliano, M Ragni, D Castagnetti (University of Messina, Italy), V Crupi, E Dragoni, E Guglielmino	Effect of arm thickness during peeling of rubber bonded with polymer nanobrushes to steel substrates **(AB19_131)** S Heide-Jørgensen, MK Budzik (Aarhus University, Denmark), KB Buhl, AN Kolding, RK Møller, M Kongsfelt, M Hinge, SU Pedersen, K Daasbjerg
17:20	Influence of testing velocity on mechanical strength and failure modes of single-lap joints made with hot-melt adhesive and polyolefin substrates **(AB19_101)** R Ciardiello, A Tridello, G Belingardi, L Goglio (Politecnico di Torino, Italy)	Engineering of material properties by adhesive selection at the example of a novel structural wood material **(AB19_116)** P Bliem (University of Natural Resources and Life Sciences, Austria), S Frömel-Frybort, HWG van Herwijnen, T Krenke, R Mauritz, J Konnerth	Silane-siloxane-mixtures in plasma coating-processes **(AB19_142)** H Schneider (Technische Universität Braunschweig, Germany), C Schütz, K Dilger, S Hartwig
17:40	An experimental and finite element investigation on the effect of adhesive distribution on strength of bonded joints **(AB19_102)** AP Pisharody (Baylor University, USA), B Blandford, DE Smith	Evolution of the Arcan TCS test specimen in order to predict the behavior of a bonded interface under dynamic loadings by fracture mechanics **(AB19_64)** C Lavarec (ENSTA Bretagne, France), S Marguet, R Créac'hcadec, C Cellard, S Sohier, JF Ferrero	Computational analysis of crack growth in adhesive joints with damage-tolerant interfaces **(AB19_155)** C Morano (University of Calabria, Italy), M Scagliola, M Alfano
18:00	Fast inductive curing of adhesively bonded glass-timber joints – Part II: In-depth interpretation of the results **(AB19_112)** M Voß, J Wirries, M Adam, T Vallée, C Tornow (Fraunhofer IFAM, Germany), M Noeske, J Derksen, K Thiel, K Brune	Adhesive thickness effects on the mixed-mode fracture toughness of bonded joints **(AB19_123)** JJG Oliveira, RDSG Campilho (ISEP, Portugal), FJG Silva, EAS Marques, JJM Machado, LFM da Silva	Laser based surface modification of nickel titanium alloy for adhesive bonding in medical applications **(AB19_133)** S Mechtold (University of Kassel, Germany), S Böhm, D Martin, S Wagner, U Specht, M Veltrup
19:00	***Poster session and RECEPTION (Room under the Auditorium)***		

Adhesion and surface treatments

Poster 1	Research on the increase of adhesion of super hard coating to cemented carbides **(AB19_46)**	MJ Kupczyk (Poznan University of Technology, Poland)
Poster 2	Improvement of adhesion force of hard coatings to cemented carbides by laser heating **(AB19_47)**	MJ Kupczyk (Poznan University of Technology, Poland)
Poster 3	Advanced first layer adhesion for additive application of plastic materials on curved surfaces through robot-supported automatic surface-scan **(AB19_136)**	J-D Marx (Hochschule Hannover, Germany), A Richter, N Waldt, F Fischer

Poster 4	Silane treatment to enhance dispersion and interfacial bonding of carbon nanomaterials in acrylic polymer matrices **(AB19_171)**	E Paz-Jiménez (Universidad Pontificia Comillas, Spain), M Herrero-Palomino, Y Ballesteros-Iglesias, JC del Real
Poster 5	The tackiness of composite prepregs **(AB19_178)**	K Gautier (University of Haute Alsace, France), S Barhoumi, B Gachet, X Allonas
Poster 6	Effect of peel ply surface treatment on adhesive bonding of polyester and vinyl ester composites used in the maritime industry **(AB19_181)**	EF Reia da Costa (SINTEF, Norway), S Kubowicz, RH Gaarder, F Grytten, I Bakke
Poster 7	Adhesion between overlays and substrates in concrete floors: literature survey and research gaps **(AB19_195)**	J Szymanowski (Wrocław University of Science and Technology, Poland)
	Adhesive properties	
Poster 8	Fracture analysis of structural adhesives: Introducing a new benchmark for adhesive performance **(AB19_4)**	MH Brandtner-Hafner (FRACTURE ANALYTICS, Austria)
Poster 9	An apparatus for mixed-mode fracture characterization of adhesives under impact loads **(AB19_11)**	PDP Nunes (INEGI, Portugal), EAS Marques, RJC Carbas, A Akhavan-Safar, LFM da Silva
Poster 10	Fracture envelope of an automotive adhesive under impact **(AB19_12)**	CSP Borges (INEGI, Portugal), A Akhavan, LFM da Silva, L Alfonso
Poster 11	J-integral analysis of the mixed-mode fracture behaviour of composite bonded joints **(AB19_125)**	FJCFB Loureiro, RDSG Campilho (ISEP, Portugal), RJB Rocha
Poster 12	Toughening of acrylic adhesives with carbon nanomaterials **(AB19_170)**	JC del Real (Universidad Pontificia Comillas, Spain), E Paz-Jiménez, Y Ballesteros-Iglesias
Poster 13	Verification of a crack growth mechanism in ENF measurement on SGA adhesive joint **(AB19_172)**	K Kamiyama (Mitsubishi Electric Corp, Japan), M Mikuni, T Matsumoto
Poster 14	Filament stretching of high viscous industrial adhesives **(AB19_174)**	FJ Fassbender, B Mayer, H Fricke, T Vallée (Fraunhofer IFAM, Germany)
Poster 15	Shear strength of adhesive bonds: comparison of lap-shear, asymmetric 4-point-bending and torsion tests **(AB19_182)**	M Ferraris, M Salvo, V Casalegno, S De La Pierre, L Goglio (Politecnico di Torino, Italy), C Wilhelmi, M Funke, M Suess
Poster 16	Fracture R-curve and cohesive law of CFRP composite adhesive joints **(AB19_183)**	M Tauheed, NV Datla (Indian Institute of Technology Delhi, India)
Poster 17	The effect of size and amount of micro particles of magnetized cork on the mechanical properties of an epoxy **(AB19_19)**	AQ Barbosa (INEGI, Portugal), JB Marques, LFM da Silva, J Abenojar
	Joint design	
Poster 18	Remanufacturing of adhesively bonded light weight structures **(AB19_8)**	DV Srinivasan (Nanyang Technological University Singapore, Singapore), A Agarwal, S Idapalapati
Poster 19	Software development for designing adhesive joints **(AB19_16)**	VS Monteiro, A Akhavan-Safar (INEGI, Portugal), EAS Marques, M Costa, LFM da Silva
Poster 20	Experimental and numerical study of fracture mechanism of adhesively bonded composite single lap joints under quasi-static tension **(AB19_18)**	X Shang, EAS Marques (INEGI, Portugal), JJM Machado, RJC Carbas, AQ Barbosa, D Jiang, LFM da Silva
Poster 21	Analysis of adhesively bonded joints in synthetic and natural fibre-reinforced polymer composites **(AB19_60)**	H Queiroz, DKK Cavalcanti, MD Banea (CEFET/RJ, Brazil)
Poster 22	Effect of adhesive type on mechanical properties of galvanized steel/CFRP adhesive-bonded joints **(AB19_75)**	JR Ni (Tongji University, China), JY Min, JP Lin, S Wang, HL Wan
Poster 23	XFEM application for the analysis of single and double-lap bonded joints **(AB19_122)**	V Ramesh, RDSG Campilho (ISEP, Portugal), FJG Silva, RJB Rocha
Poster 24	Effect of interactions among parameters on single-lap joint tests **(AB19_153)**	MA Martínez (Universidad Carlos III de Madrid, Spain), S Lopez de Armentia, P Galvez, J Abenojar
Poster 25	Failure prediction of adhesively bonded joints by means of finite element method **(AB19_159)**	MZ Sadeghi (RWTH Aachen University, Germany), J Zimmermann, J Weiland, A Gabener, U Reisgen, KU Schroeder
Poster 26	Geometrical optimization of adhesive joints under tensile impact loads using cohesive zone modelling **(AB19_160)**	JPA Valente, RDSG Campilho (ISEP, Portugal), EAS Marques, JJM Machado, LFM da Silva
Poster 27	Comparative strength analysis of adhesively bonded single and double lap joints under the influence of geometry of bonded area **(AB19_175)**	J Weiland (RWTH Aachen University, Germany), MZ Sadeghi, A Schiebahn, U Reisgen, KU Schroeder

Poster 28	Numerical modelling of multi-material graded joints **(AB19_190)**	MQ dos Reis (CEFET/RJ, Brazil), RJC Carbas, M Costa, LFM da Silva, MD Banea
Poster 29	Apparatus to distribute nonuniformly particles for obtaining a functionally graded adhesive joint **(AB19_192)**	CI da Silva (University of Porto, Portugal), JB Marques, AQ Barbosa, LFM da Silva
Poster 30	Comparison of the adhesive joints strength of similar and dissimilar systems of metal alloy/polymer composites **(AB19_189)**	A Rudawska (Lublin University of Technology, Poland)
Poster 31	Pre-loaded hybrid (bonded/bolted) joints in steel constructions **(AB19_156)**	T Gerke, T Vallée (Fraunhofer IFAM, Germany), C Denkert, R Glienke, H Fricke
Poster 32	Mechanical behaviour of hybrid polymeric materials produced by Direct Digital Manufacturing **(AB19_196)**	AM Pereira (Polytechnic Institute of Leiria, Portugal), MR Silva, PNB Reis, NN Sousa, N Alves
	Durability	
Poster 33	Mode II modeling of adhesives degraded by fatigue loading using cohesive zone elements **(AB19_14)**	J Monteiro (INEGI, Portugal), A Akhavan-Safar, EAS Marques, R Carbas, R Goyal, LFM da Silva
Poster 34	Influence of mode mixity and loading conditions on fatigue crack growth behavior of an epoxy adhesive **(AB19_15)**	J Monteiro (INEGI, Portugal), AV Rocha, A Akhavan-Safar, EAS Marques, R Carbas, R Goyal, LFM da Silva
Poster 35	Hygrothermal aging of an epoxy/dicyandiamide structural adhesive – Influence of water diffusion on the durability of the adhesive/galvanized steel interface **(AB19_63)**	F Cavodeau, M Brogly (Université de Haute-Alsace, France), S Bistac, T Devanne, T Pedrollo, F Glasser
Poster 36	Effects of thermal aging on long-term reliability and failure modes of sintered-silver lap-shear joint **(AB19_197)**	Y Tan, X Li, G Chen, Q Gao, G-Q Lu, X Chen (Tianjin University, China)
Poster 37	An investigation on different Paris law relations for different adhesive systems **(AB19_198)**	AVM Rocha (University of Porto, Portugal), A Akhavan-Safar, R Carbas, E Marques, LFM da Silva
Poster 38	Fatigue crack growth analysis of different adhesive systems: Effects of mode mixity and load level **(AB19_199)**	AVM Rocha (University of Porto, Portugal), A Akhavan-Safar, R Carbas, E Marques, LFM da Silva
	Applications	
Poster 39	Effect of various artificial ageing procedures on adhesive joints for civil engineering applications **(AB19_33)**	KV Machalická (Czech Technical University in Prague, CZ), M Vokáč, P Pokorný, M Pavlíková, M Eliášová
Poster 40	Hybrid steel-glass beams - structural elements with adhesive bonding **(AB19_97)**	M Eliášová, I Pravdová, M Vokáč (Czech Technical University in Prague, Czech Republic), KV Machalická
Poster 41	Influence of deviations and imperfections on glued-in rods cured by means of induction heating **(AB19_105)**	N Ratsch (University Kassel, Germany), S Böhm, M Voß, M Adam, J Wirries, T Vallée
Poster 42	Accelerated curing of G-FRP rods glued into timber by means of inductive heating – Part I: Experimental results **(AB19_108)**	M Voß, M Adam, J Wirries, T Vallée (Fraunhofer IFAM, Germany), N Ratsch, S Böhm
Poster 43	Accelerated curing of G-FRP rods glued into timber by means of inductive heating – Part II: Modelling **(AB19_109)**	M Voß, M Adam, J Wirries, T Vallée (Fraunhofer IFAM, Germany), N Ratsch, S Böhm, R Créac'hcadec
Poster 44	Resistively heated glued-in-rods in beech LVL – Part II: Modelling **(AB19_110)**	M Voß, M Adam, J Wirries, S Myslicki, T Vallée (Fraunhofer IFAM, Germany), N Ratsch, S Böhm, R Créac'hcadec
Poster 45	Fast inductive curing of adhesively bonded glass-timber joints – Part I: Investigations at macroscopic scale **(AB19_111)**	M Voß, J Wirries, M Adam, T Vallée, C Tornow (Fraunhofer IFAM, Germany), M Noeske, J Derksen, K Thiel, K Brune
Poster 46	Fracture mechanics based joint capacity prediction of glued-in rods with different engineered hardwood products **(AB19_113)**	S Myslicki, T Vallée, O Bletz-Mühldorfer, F Diehl, C Tricot, S Logoltha, R Créac'hcadec (ENSTA Bretagne, France)
Poster 47	Effect of adhesive joint stiffness on size of large-format façade cladding **(AB19_176)**	B Nečasová (Brno University of Technology, Czech Republic)
Poster 48	Failure mechanism of similar and dissimilar bonded joints used in the oil industry **(AB19_179)**	JML Reis (Universidade Federal Fluminense–UFF, Brazil), JF Satler, HS da Costa Mattos, EAS Marques, RJC Carbas, LFM da Silva
Poster 49	Microtensile bond strength and confocal Raman microscopy evaluation of NAg-modified adhesive-dentin interface **(AB19_187)**	IS Medeiros (University of São Paulo, Brazil), JD Aguiar, SH Toma, K Araki
Poster 50	Sustainable polyurethane adhesives for footwear from algal biomass co-product **(AB19_191)**	E Orgilés, P Carbonell, MA Pérez, F Arán (INESCOP, Spain), O Gomez, A Arteche, E Ipiñazar

Friday 12 July 2019

	Session 5A – Repair (Chair: M Banea and A Pirondi) ***Room A101 (Auditorium)***	Session 5B – Durability I – Water (Chair: E Marques and X Han) ***Room B032***	Session 5C – Adhesive Properties IV (Chair: JC de Real and M Brogly) ***Room B035***
8:40	Polymeric corrosion repair in structures of fuel distribution terminals **(AB19_2)** HRM Costa (CEFET/RJ, Brazil), JPB de Souza, RA Guimarães, RAA de Aguiar, EA Alcantara	Ageing of epoxies bonded assemblies: Comparison of thermal and humid ageing **(AB19_81)** J Delozanne (Safran Composites, France), N Desgardin, N Cuvillier, E Richaud	Optimisation of drying and curing parameters of PF impregnated wood **(AB19_137)** P Bliem, S Frömel-Frybort, C Gartner, J Konnerth, R Mauritz, HWG van Herwijnen (Wood K plus, Austria)
9:00	Size and location dependence of kissing bonds in CFRP bonded repairs **(AB19_32)** S Harder (Hamburg University of Technology, Germany), B Koert, D Gibhardt, B Fiedler	The effect of different surface pre-treatment parameters on galvanized steel to galvanized steel bonded assemblies shear strength and fracture energy **(AB19_21)** A Bechikh (MAI-ENIT Laboratory, Tunisia), O Klinkova, Y Maalej, I Tawfiq, R Nasri	Lignin as a monomer for the synthesis of bio-based polyester and polyurethane adhesives **(AB19_140)** LA Heinrich (Fraunhofer WKI Institute for Wood Research, Germany), M Mérono, S Friebel
9:20	Repair of cracked bolted metallic joint using bonded CFRP patching **(AB19_99)** S Mousa (Jazan University, Kingdom of Saudi Arabia), AA Abd-Elhady, M Atta, WH Alhazmi, O Bafakeeh, H Sallam	A novel micro-scale characterisation approach on the mechanical property degradation of bulk adhesives in hot-wet environment **(AB19_22)** X Han (Dalian University of Technology, China), E Pickering, A Bo, Y Gu	Adhesive related warping of thin wooden bi-layers **(AB19_141)** A Rindler (Wood K plus, Austria), O Vay, C Hansmann, J Konnerth
9:40	Bond properties between CFRP plate and fire-damaged concrete **(AB19_103)** C Thongchom (Chulalongkorn University, Thailand), A Lenwari, RS Aboutaha	Durability of adhesively bonded structures in marine environment **(AB19_24)** J Leplat (ENSTA Bretagne, France), P Bidaud, D Thévenet	Evaluation of an elastic-perfectly plastic model of an acrylic adhesive using the adhesively bonded 3-point bending specimen **(AB19_147)** MM Alves, LM Abreu (University of Aveiro, Portugal), AB Pereira, A B. de Morais
10:00	Effect of bonding strength between concrete and CFRP plate on the behavior of composite reinforced concrete beams **(AB19_121)** MH Ho (University of Reims Champagne-Ardenne, France), JF Berthet, A Li	Analysis of hygrothermal effects on mixed mode I/II interlaminar fracture toughness of carbon composite joints **(AB19_36)** RCM Sales (Faculdade de Tecnologia Prof. Jessen Vidal São José dos Campos-SP, Brazil), AF de Sousa, CBG Brito, JLS Sena, NNA Silveira, GM Cândido, MV Donadon	Influence of cure conditions on the behaviour of epoxy structural adhesives used for rehabilitation in Civil Engineering **(AB19_139)** S Cabral-Fonseca (Laboratório Nacional de Engenharia Civil, Portugal), AM Machado, HM Silva
10:20	Strength of hybrid laminates aluminium carbon-fibre joints under impact loads **(AB19_13)** MAMS Pereira (University of Porto, Portugal), RJC Carbas, EAS Marques, LFM da Silva	Effects of moisture on the damage behaviour and bond strength of glass fibre reinforced epoxy laminates **(AB19_42)** D Gibhardt (Hamburg University of Technology, Germany), D Freund, S Harder, B Fiedler	Measurement of cohesive laws in shear with reinforced ENF-specimens **(AB19_145)** A Biel (University of Karlstad, Sweden), U Stigh
10:40-11:00	***COFFEE BREAK (Room under the Auditorium)***		
	Session 6A – Adhesive properties V (Chair: G Stamoulis and E Dragoni) ***Room A101 (Auditorium)***	**Session 6B – Durability II** (Chair: L Goglio and S Debruyne) ***Room B032***	**Session 6C – Joint design IV** (Chair: K Dilger and A Pirondi) ***Room B035***
11:00	Experimental identification of the shear cohesive law of an adhesive layer via the Twice Notched Flexure test **(AB19_129)** G Cricrì (University of Naples Federico II, Italy), M Perrella	Development of cohesive zone models for glass/steel hybrid joints featuring environmental exposure effects **(AB19_45)** I Katsivalis (University of Southampton, UK), OT Thomsen, S Feih, M Achintha	Resistively heated glued-in-rods in beech LVL – Part I: Experimental results **(AB19_107)** N Ratsch (University Kassel, Germany), S Böhm, M Voß, J Wirries, M Adam, T Vallée, S Myslicki
11:20	Influence of the interference level and of the assembly process on the shear strength of Loctite 648 anaerobic adhesive **(AB19_168)** D Croccolo, M De Agostinis, S Fini, G Olmi, L Paiardini, F Robusto (University of Bologna, Italy)	Lifetime prediction of structural adhesive joints by combining; Mechanical load, humidity, moisture and UV **(AB19_76)** S Fevery (KU Leuven, Belgium), H Hallez, D Vandepitte, S Debruyne	Adhesively bonded steel concrete composite beams – Mechanical properties and design criteria **(AB19_126)** W Kurz (University of Kaiserslautern, Germany), M Kludka, PL Geiß

11:40	Fracture of bi-material joints with X-thick bond lines under mode I loading conditions: experimental and numerical analysis of the fracture process zone **(AB19_134)** RL Fernandes (Delft University of Technology, Netherlands), S Teixeira de Freitas, MK Budzik, JA Poulis, R Benedictus	Moisture diffusion effect on the strength degradation of adhesively bonded corrugated sandwich beam **(AB19_25)** G Wang (Dalian University of Technology, China), X Han	Low to high strain rate behaviour of adhesively bonded ceramics with thermoplastic laminates **(AB19_138)** A Ahmed (Indian Institute of Technology Delhi, India), Kartikeya, H Chauhan, N Bhatnagar
12:00	Effect of temperature on cohesive modelling of 3M Scotch-WeldTM 7260 B/A epoxy adhesive **(AB19_56)** S Cardamone, RAA Lima (Politecnico di Milano, Italy), A Bernasconi, M Giglio	Fracture mechanics based estimation of fatigue lives of adhesive joints **(AB19_188)** R Goyal (Deere & Company, India), M El-zein, N Tortorella, LFM da Silva, S Mikheevskiy, G Glinka	Development and qualification of a computer-aided evaluation method for the failure of adhesively bonded joints **(AB19_143)** M Ditz (Paderborn University, Germany), G Meschut, D Teutenberg, T Schwarze, D Smart
12:20	Evaluation of a new partitioning method for mixed-mode I+II fracture of bi-material bonded joints **(AB19_148)** MM Arouche (CEFET/RJ, Brazil), S Teixeira de Freitas, S de Barros	Ageing effect on pure mode I fracture of adhesively bonded joints **(AB19_149)** S Abdel Monsef (University of Girona, Spain), J Renart, A Turon, P Maimí	Influence of the fibre orientation on the lap shear strength and fracture behaviour of adhesively bonded composite metal joints at high strain rates **(AB19_146)** H Grefe (Technische Universitaet Braunschweig, Germany), MW Kandula, K Dilger
12:40	Analysis of fracture toughness characterization for a structural high crash resistance adhesive **(AB19_185)** E Duvivier, C Valero, A Chiminelli (ITAINNOVA, Spain), JM Bielsa	Analysis of back-face strain measurement for adhesively bonded single lap joints using Strain Gauge, Digital Image Correlation and Finite Element Method **(AB19_163)** J Weiland (RWTH Aachen University, Germany), MZ Sadeghi, A Schiebahn, U Reisgen, KU Schroeder	A discrete crack approach for the study of concrete beams with externally bonded pre-stressed CFRP reinforcement **(AB19_150)** P Neto (Polytechnic Institute of Setúbal, Portugal), J Alfaite
13:00-14:00	***LUNCH BREAK (Room under the Auditorium)***		
	Session 7A – Joint design V (Chair: T Tannert and R Campilho)	**Session 7B – Non-Destructive Testing** (Chair: RD Adams and AQ Barbosa)	**Session 7C – Durability III – Fatigue** (Chair: R Goyal and A Akhavan)
	Room A101 (Auditorium)	***Room B032***	***Room B035***
14:00	Investigation of the influence of the curing cycle on the creation of porosities in adhesively bonded assemblies using X-ray microtomography **(AB19_193)** V Dumont (ENSTA Bretagne, France), C Badulescu, D Thévenet, G Stamoulis	The principles of non-destructive inspection of adhesive joints, possibilities and pitfalls **(AB19_43)** RD Adams (University of Oxford, UK)	Performance under fatigue loads of single lap joints using CFRP and aluminium substrates prior and after hygrothermal aging **(AB19_9)** JJM Machado (INEGI, Portugal), EAS Marques, AQ Barbosa, LFM da Silva
14:20	Development of an apparatus to manufacture graded joints using magnetized particles **(AB19_20)** JB Marques (INEGI, Portugal), C Silva, AQ Barbosa, J Abenojar, LFM da Silva	Evaluation of the Reflectance Transformation Imaging (RTI) method to analyze the fracture facies of bonded assemblies **(AB19_55)** C Cellard (Université de Bretagne Occidentale, France), Y Quéau, L Sohier, R Créac'hcadec	Characterization of adhesive materials in terms of static, fatigue and impact strength for industrial applications **(AB19_17)** A Akhavan-Safar (INEGI, Portugal), EAS Marques, R Carbas, LFM da Silva, M El-Zein, N Carrere, I Maus, Y Takahashi, J Sherwood
14:40	Experimental and numerical study of the impact behavior of a component scale adhesively bonded automotive structure **(AB19_6)** NDD Silva (INEGI, Portugal), EAS Marques, JJM Machado, B Desai, LFM da Silva	Inline monitoring the homogeneity of adhesive flows with Electrical Capacitance Tomography **(AB19_74)** S Voss, T Vallée (Fraunhofer IFAM, Germany)	Multiaxial static and fatigue behaviour of adhesives for railway applications **(AB19_49)** VC Beber (Fraunhofer IFAM, Germany), M Brede
15:00	Strength prediction of adhesively-bonded single-lap joints by advanced discretization techniques **(AB19_124)** LDC Ramalho, RDSG Campilho (ISEP, Portugal), JAOP Belinha	Printed impedance sensors – the frugal way to study the crosslinking of resins and glues for different applications through in-line detection **(AB19_87)** S Bauer, U Müller (Kompetenzzentrum Holz GmbH, Austria), F Padinger, R Schwödiauer, M Steiner, T Stockinger	The effect of environment and fatigue loading on the mechanical behaviour of TEPs-modified adhesives **(AB19_59)** MD Banea (CEFET/RJ, Brazil), LFM da Silva, R Carbas, DKK Cavalcanti, LFG de Souza

15:20	A strain-based damage detection approach in adhesively bonded single lap joints **(AB19_158)** MZ Sadeghi (RWTH Aachen University, Germany), J Weiland, A Preisler, J Zimmermann, A Schiebahn, U Reisgen, KU Schroeder	Investigation on monitoring mode I crack propagation in adhesive joints by optical backscatter reflectometry **(AB19_91)** RAA Lima (Politecnico di Milano, Italy), M Carboni, A Bernasconi	Effect of adhesive thickness on the fatigue properties of bonded single-lap joints in case of CFRP and polyurethane adhesive **(AB19_80)** H Oguma, K Naito, Y Ogawa (National Institute for Materials Science, Japan)
15:40	Evaluating experimentally and numerically different scarf-repair methodologies **(AB19_154)** S Psarras (University of Patras, Greece), G Sotiriadis, T Loutas, V Kostopoulos	Guided ultrasonic waves for adhesion levels characterization in structural bonding **(AB19_120)** C Gauthier, L Attar, M Ech-Cherif El-Kettani (Université du Havre, France), M-V Predoi, J Galy, P Pareige	Research on the mechanical characterization and numerical modelling of the behaviour of structural adhesives under impact loads **(AB19_10)** EAS Marques (INEGI, Portugal), JJM Machado, NDD Silva, RJC Carbas, LFM da Silva
16:00-16:20	***COFFEE BREAK (Room under the Auditorium)***		
	Session 8A – Durability IV (Chair: RD Adams and LFM da Silva)	**Session 8B – Applications** (Chair: N Tortorella and V Beber)	**Session 8C – Adhesion and surface treatments V** (Chair: G Critchlow and H Poulis)
	Room A101 (Auditorium)	***Room B032***	***Room B035***
16:20	Fatigue lifetime prediction of structural adhesives under stress concentration conditions **(AB19_144)** B Schneider, VC Beber (Fraunhofer IFAM, Germany), M Brede	Evaluation of various standards of adhesion properties between fused-layer-modeling parts and injection molded parts **(AB19_29)** A Richter (Volkswagen, Germany), F Fischer, K Dilger	Bonding behavior of fusion bonded hybrid joints with press hardened steel and glass mat reinforced thermoplastic **(AB19_84)** L Kaempf (Technische Universität Braunschweig, Germany), K Dilger, S Hartwig
16:40	Creep investigations on steel fasteners adhesively bonded to steel plates **(AB19_115)** E Djeumen, Q Sourisseau, S Chataigner (IFSTTAR, France), R Creac'hcadec, MO Quemere, JP Court, F Sayed Ahmad	Adhesive bonding of 3D-printed plastic components **(AB19_82)** H Leicht (SKZ – German Plastics Center, Germany), L Orf, J Hesselbach, E Kraus, B Baudrit, T Hochrein, M Bastian	CFR-PA66-Steel direct joints with enhanced adhesion through laser texturing **(AB19_161)** L Blanco (AIMEN Technology Centre, Spain), K van der Straeten, T Peters, K Kukla, S Müller, P Rey
17:00	Stress-based lifetime prediction of adhesively bonded hybrid hyperelastic joints under multiaxial fatigue loading **(AB19_83)** S Çavdar (Paderborn University, Germany), D Teutenberg, G Meschut, A Wulf, O Hesebeck, M Brede, B Mayer	Adhesively bonded joints for off-shore structures manufactured under water **(AB19_114)** S Myslicki, H Kordy, T Vallée, AW Momber, R Créac'hcadec (ENSTA Bretagne, France)	The role of laser texturing and joint strength as FML automation enablers **(AB19_162)** L Mera (AIMEN Technology Centre, Spain), L Blanco, A Pedreira, P Rodriguez, MI Coto, F Ares
17:20	Effect of the surface morphology over the fatigue performance of metallic single lap-shear joints **(AB19_94)** F Moroni, F Musiari (Università degli Studi di Parma, Italy), C Favi	Enhanced curing and structural performance of polyurethane adhesives for applications in commercial transportation **(AB19_132)** C Di Fratta (Sika, Switzerland), S Kostic, D Hofstetter, A corsaro, F Choffat	Characterization of adhesion methodologies for hybrid aluminum and carbon fibre composites **(AB19_164)** J Lima (University of Porto, Portugal), E Marques, R Carbas, R Neto, AT Marques
17:40	Exposure of structural epoxy adhesive to combination of tensile stress and γ-radiation **(AB19_135)** J Zimmermann (RWTH Aachen, Germany), MZ Sadeghi, KU Schroeder	Hybrid adhesively bonded timber-concrete-composite floors **(AB19_166)** T Tannert (University of Northern British Columbia, Canada), A Gerber, T Vallée	Influence of the surface properties of aluminum on its structural adhesion to thermoplastic elastomers **(AB19_165)** A Frick, M Spadaro (Aalen University, Germany)
18:00	Effect of curing temperature on the mechanical properties of aluminium single lap bonded joints **(AB19_180)** GCG Serra, NN Sousa, PNB Reis (University of Beira Interior, Portugal), JAM Ferreira	Glued-in rods resistively and inductively cured under low temperatures **(AB19_106)** N Ratsch (University Kassel, Germany), S Böhm, M Voß, M Adam, J Wirries, T Vallée	Threaded fasteners with applied medium or high strength threadlockers: effect of different tightening procedures on the tribological response **(AB19_167)** D Croccolo, M De Agostinis, S Fini, G Olmi (University of Bologna, Italy), L Paiardini, F Robusto
20:00	***AB2019 BANQUET (Porto caves Ferreira)***		