



TRA-C industrie



LE FONDS SOCIAL EUROPÉEN ET LA WALLONIE
INVESTISSENT DANS VOTRE AVENIR



6th International Conference on Scientific and Technical Advances on Friction Stir Welding & Processing

Louvain-la-Neuve - 11, 12 and 13 September 2019

Université catholique de Louvain - Belgium

9:15-9:35	Welcome and introduction	
9:35-10:30	Plenary lecture: Development and industrialization of FSW for Ariane 6 propellant tanks By François MARIE (Ariane Group) and Markus KAHNERT (MT-Aerospace) <i>Chair: Frederik Hendrickx (CRM)</i>	
10:30-10:50	Coffee break	
	Session 1: Applications <i>Chairs: Frederik Hendrickx (CRM) and Laurent Dubourg (Stirweld / Institut Maupertius)</i>	Session 2: Friction stir processing <i>Chairs: Jong-Ning Aoh (National Chung Cheng University) and Marie-Noëlle Avettant-Fenoël (Université de Lille)</i>
10:50-11:10	Series production of friction stir welded battery trays By Axel Meyer (RIFTEC GmbH)	INVITED: Cold spraying + Friction stir welding/processing hybrid process: A new method to improve the mechanical properties of components By Weny Li (Northwestern Polytechnical University), Na Li (Northwestern Polytechnical University), Chunjie Huang (Northwestern Polytechnical University), Kang Yang (Northwestern Polytechnical University), Xiawei Yang (Northwestern Polytechnical University), Yaxin Xu (Northwestern Polytechnical University)
11:10-11:30	Evaluation of friction-stir welded thick preforms for aeronautics applications By Hugo Robe (Institut de Soudure), Amaris Ben Attar (Institut de Soudure), David Chartier (STELIA Aerospace)	Friction Stir Processing of Cu-SiC composite deposits produced by cold spray By Alexey Sova (ENISE), Eric Feulvach (ENISE)
11:30-11:50	Corner Stationary Shoulder FSW for aerostructures By Jeroen De Backer (TWI Ltd), Anthony McAndrew (TWI Ltd), Jorgen Säll (ESAB AB), Mattias Jonsson (SAAB AB)	Grain refinement of magnesium alloys via large-load friction stir processing By Yoshihisa Kimoto (Osaka Research Institute of Industrial Science and Technology), Yoshiaki Morisada (Joining and Welding Research Institute, Osaka University), Hidetoshi Fujii (Joining and Welding Research Institute, Osaka University), Peter Cengeri (University of Vienna), Gerhard Krexner (University of Vienna), Michael Zeherbauer (University of Vienna)
11:50-12:10	Investigating effects of surface treatments in FSW of Al-Li alloys for aeronautic applications By Egoitz Aldanondo (IK4 LORTEK), Ekaitz Arruti (IK4 LORTEK), Alberto Echeverria (IK4 LORTEK), Pedro Alvarez (IK4 LORTEK), Iñaki Hurtado (Mondragon Unibertsitatea, Faculty of Engineering (MU-ENG))	Ductilization of 7475 aluminium alloy by Friction Stir Processing: homogenization of microstructural constituents By Matthieu Lezaack (UCLouvain), Lv Zhao (UCLouvain), Aude Simar (UCLouvain)
12:10-12:30	Integration of Thermal Management Networks into Aluminium Structures by Stationary Shoulder Friction Stir Channelling By Joao Gandra (TWI Ltd)	Synthesis of titanium particles reinforced AZ31 magnesium composites by friction stir processing: influence of process parameters By Isaac Dinaharan (Tsinghua University), Shuai Zhang (Tsinghua University), Gaoqiang Chen (Tsinghua University), Qingyu Shi (Tsinghua University)
12:30-14:00	Lunch at "Fleur de Sel"	
	Session 1: Applications – Process development <i>Chairs: François Marie (Ariane Group), Markus Kahnert (MT-Aerospace) and Jorge dos Santos (Helmholtz-Centrum Geesthacht GmbH)</i>	Session 2: Friction stir processing (FSP) <i>Chairs: Zongyi Ma (Chinese Academy of Science), Weny Li (Northwestern Polytechnical University) and Eric Charkaluk (Ecole Polytechnique)</i>
14:00-14:20	Development of FSW head for CNC machine tool: advantages, limitations and applications By Gilles Sevestre (Stirweld), Laurent Dubourg (Stirweld)	Manufacturing High Strength Aluminum Matrix Composites by Friction Stir Processing: an Innovative Approach By Nelson Netto (UCLouvain), Lv Zhao (UCLouvain), Lipeng Ding (UCLouvain; University of Antwerp), Jeroen Soete (KU Leuven), Hosni Idrissi (UCLouvain; University of Antwerp), Aude Simar (UCLouvain)
14:20-14:50	Industrial feedback on Friction Stir Welding process: from R&D to mass production By Landry Giraud (TRA-C Industrie), Aymeric De Monclin (TRA-C Industrie)	Microstructure and Tensile Behavior of Friction Stir Processed AA6061/Al3Fe Cast Aluminum Matrix Composites By Sathiskumar Ramasamy (Coimbatore Institute of Technology), Balakrishnan M (Nehru Institute of Engineering and Technology), Murugan Nadarajan (PSG College of Technology), Palanivel R (University of Johannesburg)

14:50-15:10	Study on the influence of geometry on welding forces By Amarilys Ben Attar (<i>Institut de Soudure</i>), Sandra. Zimmer-Chevret (<i>Arts et Métiers ParisTech</i>), N. Jemal (<i>ENIS</i>), L. langlois (<i>Arts et Métiers ParisTech</i>)	Friction stir processing of selective laser melted AlSi10Mg for mechanical behaviour enhancement. Study on damage mechanism evolution By Juan Guillermo Santos Macías (<i>UCLouvain</i>), Lv Zhao (<i>UCLouvain</i>), Chola Elangeswaran (<i>KUL</i>), Brecht Van Hooreweder (<i>KUL</i>), Jérôme Adrien (<i>INSA Lyon</i>), Jean-Yves Buffière (<i>INSA Lyon</i>), Eric Maire (<i>INSA Lyon</i>), Aude Simar (<i>UCLouvain</i>)
15:10-15:30	Design and processing with a compact, adaptable high-speed FSW spindle stack with direction- and rotational speed-independent control of shoulder and probe By Michael Grätzel (<i>Technische Universität Ilmenau</i>), Konstantin Schick-Witte (<i>Technische Universität Ilmenau</i>), Felix Sieber (<i>Technische Universität Ilmenau</i>), Jean Pierre Bergmann (<i>Technische Universität Ilmenau</i>)	Friction stir processing on Ti6Al4V produced by Selective Laser Melting: microstructure and mechanical properties By Chunjie Huang (<i>UCLouvain</i>), Lv Zhao (<i>UCLouvain</i>), Xingchen Yan (<i>UTBM</i>), Min Liu (<i>Guangdong Institute of New Materials</i>), Wenyu Ma (<i>Guangdong Institute of New Materials</i>), Weibing Wang (<i>Beijing FSW center</i>), Jeroen Soete (<i>KU Leuven</i>), Aude Simar (<i>UCLouvain</i>)
15:30-15:50	Downsizing stationary shoulder tools versus system robustness and gap tolerance By Markus Weigl (<i>Grenzebach Maschinenbau</i>)	Effect of Friction Stir Processing on microstructure and corrosion properties of Mg-2%Ca alloy By Corentin Velard (<i>UCLouvain & SIMAP-LEPMI, Grenoble INP</i>), Aude Simar (<i>UCLouvain</i>), Jean-Jacques Blandin (<i>SIMAP, Grenoble INP</i>), Emilie Ferrie (<i>SIMAP, Grenoble INP</i>), Virginie Roche (<i>LEPMI, Grenoble INP, Université Savoie Mont Blanc, CNRS</i>)
15:50-16:10	Coffee break	
	Session 1: Process development <i>Chairs: Axel Meyer (RIFTEC GmbH) and Hugo Robe (Institut de Soudure)</i>	Session 2: Friction stir additive manufacturing <i>Chairs: Hidetoshi Fujii (Osaka University) and Juan Guillermo Santos Macias (UCLouvain)</i>
16:10-16:30	Dual encoder robot for accurate Robotic Friction Stir Welding for 3D aeronautic components By Mario Guillo (<i>Institut MAUPERTUIS</i>), Guillaume Even (<i>STELIA Aerospace</i>), Marc Douilly (<i>STELIA Aerospace</i>)	Microstructure Characterization and Mechanical Properties of a Friction Stir Additive Manufactured (FSAM) AA6061 Bulk Material By Jong-Ning Aoh (<i>National Chung Cheng University</i>), Chih-Wei Huang (<i>National Chung Cheng University</i>), Yong-Fong Huang (<i>National Chung Cheng University</i>), Yu-An Huang (<i>National Chung Cheng University</i>)
16:30-16:50	Inversion friction stir welding for fabricating hollow structures By Yoshiaki Morisada (<i>Joining and Welding Research Institute, Osaka University</i>), Hidetoshi Fujii (<i>Joining and Welding Research Institute, Osaka University</i>)	Microstructure Influence on the Strain-Rate and Stress-State Dependence of Additive Friction Stir Deposition Aluminum Alloy 7075 By Paul Allison (<i>Univ. Alabama</i>), Brian Jordon (<i>Univ. Alabama</i>), C. Taylor Mason (<i>Univ. Alabama</i>), Dustin Avery (<i>Univ. Alabama</i>), Brandon Phillips (<i>Univ. Alabama</i>)
16:50-17:10	Spectral Correlation Based Defect Recognition in Friction Stir Welding By Yuri Hovanski (<i>Brigham Young University</i>), John Hunt (<i>Brigham Young University</i>), Carl Sorensen (<i>Brigham Young University</i>), Brian Mazzeo (<i>Brigham Young University</i>)	Mechanical Behavior of Aluminum Alloys Processed with Additive Friction Stir-Deposition By J. Brian Jordon (<i>The University of Alabama</i>), Dustin Avery (<i>The University of Alabama</i>), Ben Rutherford (<i>The University of Alabama</i>), Paul Allison (<i>The University of Alabama</i>)
17:10-17:30	Offline programming three dimensional complex FSW trajectories integrating robot deflections By Komlan Kolegain (<i>Institut de Soudure</i>), François Léonard (<i>ENIM - Université de Lorraine</i>), Sandra Chevret (<i>Arts et Métiers ParisTech</i>), Amarilys Ben Attar (<i>Institut de Soudure</i>), Gabriel Abba (<i>ENIM - Université de Lorraine</i>)	Microstructure and Mechanical Properties of Aluminum/Steel Dissimilar Refill Friction Stir Spot Welds By Peng Li (<i>Dalian University of Technology</i>), Honggang Dong (<i>Dalian University of Technology</i>), Su Chen (<i>Dalian University of Technology</i>)
17:30-17:50	Influence of the tool probe design on the weldability of Friction Stir Welding butt joints By Ekaitz Arruti (<i>IK4-LORTEK</i>), Iñigo Arin (<i>IK4-LORTEK</i>), Egoitz Aldanondo (<i>IK4-LORTEK</i>), Santiago Zamora (<i>IZAR CUTTING TOOLS</i>)	Visit facilities UCLouvain
17:50-18:10	Visit facilities UCLouvain	
18:10-19:30	Visit facilities UCLouvain	

8:30-9:10	Plenary lecture: Friction stir processing - an effective tool for fabricating high-property nano-carbon reinforced aluminium alloy composites By Zongyi MA (Chinese Academy of Sciences) Chair: Aude Simar (UCLouvain)	
	Session 1: Friction stir spot welding <i>Chairs: Murugan Nadarajan (PSG College of Technology, India) and Guillaume Racineux (Ecole Centrale de Nantes)</i>	Session 2: Modelling <i>Chairs: Laurent Delannay (UCLouvain) and Mohammad Nazzal (American University of Sharjah)</i>
9:10-9:30	Mechanical properties and microstructural characteristics of refill friction stir spot welded thin aluminum alloys By Fan Cui (Shanghai Aerospace Equipments Manufacturer), Murilo Santos (Helmholtz-Zentrum Geesthacht GmbH), Junjun Shen (Helmholtz-Zentrum Geesthacht GmbH), Xuecheng Song (Shanghai Aerospace Equipments Manufacturer), Lijie Guo (Shanghai Aerospace Equipments Manufacturer), Jorge dos Santos (Helmholtz-Zentrum Geesthacht GmbH)	Distortions prediction for AA2XXX friction stir welding By Rémi Bertrand (Univ Lyon, France / École de technologie supérieure (ETS), Canada), Eric Feulvarch (Univ Lyon, France), Philippe Bocher (École de technologie supérieure (ETS), Canada)
9:30-9:50	High Speed Refill Friction Stir Spot Welding By Brigham Larsen (Brigham Young University), Yuri Hovanski (Brigham Young University), Arnold Wright (Brigham Young University)	3D simulation of FSW to predict distortions By Marion Geuffrard (ESI group), Hugo Robe (IS group), Joffrey Boursier (Dassault Aviation), Gilles Surdon (Dassault aviation), Eric Feulvarch (ENISE), Yannick Vincent (ESI group)
9:50-10:10	Texture development of a modified refill friction stir spot weld of AM50 magnesium alloy By Banglong Fu (Helmholtz-Zentrum Geesthacht), Junjun Shen (Helmholtz-Zentrum Geesthacht), Uceu F.H.R. Suhuddin (Helmholtz-Zentrum Geesthacht), Jorge F. dos Santos (Helmholtz-Zentrum Geesthacht), Michael Rethmeier (BAM Federal Institute for Materials Research and Testing)	A Numerical Model for Dissimilar Lap Joint FSW by Using Particle Method By Fumikazu Miyasaka (Osaka University), Kenta Mitsuji (Osaka University)
10:10-10:30	Refill friction stir spot welding of EN AW-7075-T6 sheets By Koen Faes (Belgian Welding Institute), Irene Kwee (Belgian Welding Institute), Wim De Waele (Ghent University)	Numerical Simulation of Temperature Distribution and Material Flow During Friction Stir Welding of Dissimilar Aluminum and Copper Alloys By Evgenii Rylkov (Peter the Great St.Petersburg Polytechnic University), Anton Naumov (Peter the Great St.Petersburg Polytechnic University), Fedor Isopov (Peter the Great St.Petersburg Polytechnic University), Oleg Panchenko (Peter the Great St.Petersburg Polytechnic University)
10:30-10:50	Coffee break	
	Session 1: Friction stir spot welding – Dissimilar welding <i>Chairs: Fleur Maas (Belgian Welding Institute) and Yuri Hovanski (Brigham Young University)</i>	Session 2: Modelling <i>Chairs: Michele Chiumenti (Universidad Politécnica de Cataluña) and Ton Bor (University of Twente)</i>
10:50-11:10	Refill Friction Stir Spot Welding Parameter Optimisation for Transport Industry Aluminium Alloys By Pedro Santos (TWI,Ltd), Anthony McAndrew (TWI,Ltd), João Gandra (TWI,Ltd), Bilal Ahmad (Coventry University), Xiang Zhang (Coventry University)	Material flow and defect prediction during friction stir welding of an AZ31B alloy using a solid mechanics simulation By Rafael Arthur Reghine Giorjão (Ohio State University), Julian Ávila (São Paulo State University), Eduardo Monlevade (São Paulo University), Antonio Ramirez (Ohio State University), André Tschiptschin (São Paulo University)
11:10-11:30	Process force reduction in friction stir spot welded EN AW 1070/C1020R for thin sheet applications By Tobias Koehler (Technische Universität Ilmenau), Michael Graetzel (Technische Universität Ilmenau), Jean Pierre Bergmann (Technische Universität Ilmenau), Aristide Tchouaha Tankoua (Daimler AG), Philip Betz (Daimler AG)	Material flow and defect formation during FSW processes By Narges Dialami (CIMNE), Miguel Cervera (CIMNE), Michele Chiumenti (CIMNE), Antonio Segatori (Hydro)
11:30-11:50	Refill Friction Stir Spot Welding (RFSSW) of Aerospace Aluminium Alloys By Anthony McAndrew (TWI Ltd) – Speaker: Pedro Santos (TWI,Ltd)	Investigation of the Friction Stir Welding Process Based on Numerical Modeling By Alexander Maslennikov (ISF/RWTH Aachen), Uwe Reisgen (ISF/RWTH Aachen), Alexander Schiebahn (ISF/RWTH Aachen), Rahul Sharma (ISF/RWTH Aachen), Pascal Rabe (ISF/RWTH Aachen), Vladimir Erofeev (TSU/Tula/Russia)
11:50-12:10	Trials of Developing a Superplastic Metal Matrix Composite through Mechanical Interlocking of Ultra-thin Stainless Steel Strands and Zn-22Al alloy utilizing Friction Stir Forming By Hamed Mofidi Tabatabaei (Kokushikan University), Takahiro Ohashi (Kokushikan University), Tadashi Nishihara (Kokushikan University)	Approach to plastic deformation in the development of a semi-physical based model of the FSW process By Elizabeth Hoyos (Universidad EIA), Yesid Montoya (Universidad EIA), Ricardo Fernández (CENIM, C.S.I.C.), Alberto Martín (CENIM, C.S.I.C.), Gaspar González-Doncel (CENIM, C.S.I.C.)
12:10-12:30	Friction stir welding of WC-12Co cermet / SC45 steel with a Ni interlayer By M.N. Avettand-Fenoël (Université de Lille), Toru Nagaoka (Osaka Research Institute of Industrial Science and Technology), Hideyoshi Fujii (Osaka University), Roland Taillard (Université de Lille)	Modeling and Experiments of Friction Stir Back Extrusion By Mohammad Nazzal (American University of Sharjah), Obadah Jarrah (American University of Sharjah)

Thursday September 12, 2019



12:30-14:00	Lunch at "Fleur de Sel"			
	Session 1: Dissimilar welding – FSW <i>Chairs: Thaneshan Sapanathan (UCLouvain) and Koen Faes (Belgian Welding Institute)</i>		Session 2: Modelling <i>Chairs: Elizabeth Hoyos (Universidad EIA, Colombia) and Fumikazu Miyasaka (Osaka University)</i>	
14:00-14:20	Parametric analysis of FSW dissimilar 2017A-7075 aluminium alloy joints <i>By Damjan Klobcar (University of Ljubljana), Boris Bell (ESAB AB), Zoran Bergant (University of Ljubljana), Roman Sturm (University of Ljubljana), Uros Trdan (University of Ljubljana)</i>		A meshfree simulation approach for the refill friction stir spot welding process <i>By Kirk Fraser (NRC), François Nadeau (NRC)</i>	
14:20-14:50	Tri-dissimilar T-joints in Aluminium Alloys by FSW: microstructural and mechanical characterisation <i>By Neves Manuel (University of Coimbra), José Costa (University of Coimbra), Altino Loureiro (University of Coimbra)</i>		Analysis of the heat generation in FSSW of steels with pinless tools <i>By David Andrade (University of Coimbra), Carlos Leitão (University of Coimbra), Narges Dialami (CIMNE), Michele Chiumenti (CIMNE), Dulce Rodrigues (University of Coimbra)</i>	
14:50-15:10	Assembling of aluminum components in automotive: a comparison between Resistance Spot Welding and Static Shoulder friction Stir Welding <i>By Antonino Squillace (University of Naples Federico II), Filomena Impero (University of Naples Federico II), Fabio Scherillo (University of Naples Federico II), Carlo Verde (Proma s.p.a.), Renzo Casarin (FPT Industrie SpA), Renzo Vezzaro (FPT Industrie SpA), Ciro Sinagra (Laminazione Sottile s.p.a.)</i>		Modeling of the solid state deposition of aluminium alloys employing friction surface cladding <i>By Ton Bor (University of Twente), Bert Geijsselaers (University of Twente), Remko Akkerman (University of Twente)</i>	
15:10-15:30	SPONSORS PRESENTATION <i>Speaker: Aude Simar (UCLouvain)</i>			
15:30-15:40	2 minutes presentation per poster <i>Speaker: Eric Feulvach (ENISE)</i>			
15:40-16:00	Coffee break			
16:00-17:10 Poster session and exhibition	<ul style="list-style-type: none"> • Healable Al alloys production by Friction Stir Processing By Maria Arseenko (UCLouvain), Lv Zhao (UCLouvain), Lipeng Ding (UCLouvain, University of Antwerp), Hosni Idrissi (UCLouvain, University of Antwerp), Eric Maire (INSA Lyon), Julie Villanova (ESRF - The European Synchrotron), Aude Simar (UCLouvain) • Issues in FSW of Aluminum Alloys to Steels and Main Solutions By Mian Wasif Safeen (Faculty of Science and Technology, Free University of Bozen-Bolzano), Pasquale Russo Spena (Department of Management Engineering and Production, Politecnico di Torino) • Damage tailoring in Al/NiTi composite manufactured by friction stir processing By Lv Zhao (UCLouvain), Nelson Netto (UCLouvain), Lipeng Ding (UCLouvain), Jeroen Soete (KU Leuven), Hosni Idrissi (UCLouvain), Aude Simar (UCLouvain) • Study of dissimilar metallic assembly through friction stir welding & friction melt bonding By Nicolas Dimov (Thales TGS, Institut Polytechnique de Paris, UCLouvain), Thaneshan Sapanathan (UCLouvain), Aude Simar (UCLouvain), Erik Charkaluk (Polytechnique), Daniel Weisz-Patrault (Polytechnique), Julien Benoit (Thales TGS) • Microstructural study of a heterogeneous friction weld of stainless steel to aluminum alloy By Djaafar Aboudi (University of Science and Technology Houari Boumediene), Ahmed Mebtouche (Research Center in Industrial Technologies CRTI), Mohamed Oubelkacem Azzoug (University of Science and Technology Houari Boumediene), Samir Mansour (University of Science and Technology Houari Boumediene) 			
	EXHIBITION			
	ZWICK / ROELL	CALIP GROUP	STIRWELD	FOOKE
	HELMHOLTZ-ZENTRUM GEESTHACHT	FPT INDUSTRIE	TRA-C INDUSTRIE	CRM GROUP
17:10-19:30	Visit Brewery or Museum L			
19:30-22:00	Conference diner			

Friday September 13, 2019

8:30-9:10	Plenary lecture: Numerical framework for high accuracy simulation of the FSW process By Michele CHIUMENTI (Universidad Politécnica de Cataluña) Chair: Aude Simar (UCLouvain)		
	Session 1: Dissimilar welding <i>Chairs: Jeroen De Backer (TWI Ltd.) and Yoshiaki Morisada (Osaka University)</i>		Session 2: FSW of Al alloys <i>Chairs: Egoitz Aldanondo (IK4 LORTEK) and William Fauveau (CALIP GROUP)</i>
9:10-9:30	Investigation of Friction Stir Welding process applied on ASTM 572 steel plates cladded with Nickel-Alloy 625 By Renan Mensch Landell (HZG/LAMEF-UFRGS), Luciano Bergmann (Helmholtz-Zentrum Geesthacht), Natascha Zocoller Borba (Helmholtz-Zentrum Geesthacht), Carlos Eduardo Fortis Kwietniewski (LAMEF-UFRGS), Jorge F. dos Santos (Helmholtz-Zentrum Geesthacht)		Tensile and fracture toughness of friction stir welded Al-Cu (2024) joints for different artificial ageing conditions By Dimitrios Karanikolas (University of Aegean), Theno Examilioti (University of Aegean), Nikolaos Alexopoulos (University of Aegean), Li Wenya (Northwestern Polytechnical University, Xi'an, China)
9:30-9:50	Selection of Welding Conditions for Butt Friction stir welding of Al and Cu By Toru Nagaoka (Osaka Research Institute of Industrial Science and Technology), Takeshi Kyouda (Fuji Terminal Industry Co., Ltd.), Shao Tongge (Beijing Institute of Petrochemical Technology), Hua Zhang (Beijing Institute of Petrochemical Technology)		Influence of plastic properties on defects formation in butt and lap welding of aluminium alloys By Carlos Leitao (CEMMPRE - UC), Maria Inês Costa (CEMMPRE - UC), Dulce Maria Rodrigues (ISISE - UC)
9:50-10:10	Residual stresses in Al6061/DP600 welds produced by a process derived from Friction Stir Welding By Thaneshan Sapanathan (UCLouvain), Norberto Jimenez-Mena (UCLouvain), Jean-Marie Drezet (École Polytechnique Fédérale de Lausanne), Sandra Cabeza (Institut Laue-Langevin), Thilo Pirlings (Institut Laue-Langevin), Pascal J. Jacques (UCLouvain), Aude Simar (UCLouvain)		Friction stir welding of AA 7075-T6 alloy: influence of the operating parameters on weld quality, thermal field and microstructure By Danilo Ambrosio (ENIT, LGP), Vincent Wagner (ENIT, LGP), Dimitri Jacquin (University of Bordeaux, I2M), Christian Garnier (ENIT, LGP), Amevi Tongne (ENIT, LGP), Marina Fazzini (ENIT, LGP), Olivier Cahuc (University of Bordeaux, I2M), Gilles Dessein (ENIT, LGP)
10:10-10:30	Investigation on the forming abilities of Friction Stir Welded multi material joints By Pascal Rabe (ISF RWTH Aachen), Uwe Reisgen (ISF RWTH Aachen), Alexander Schiebahn (ISF RWTH Aachen), Roman Schmitz (IBF RWTH Aachen), Gerhard Hirt (IBF RWTH Aachen), David Bailly (IBF RWTH Aachen)		Corrosion Behaviour of Friction Stir Welded 1050 Aluminium Alloys: Influence on Microstructure and mechanical properties By Saoussan El Mouhri (ENSAM-Meknes), Abdellah Laazizi (ENSAM-Meknes), Said Ettaqi (ENSAM-Meknes), Stephane Benayoun (Ecole centrale de Lyon)
10:30-10:50	Coffee break		
	Session 1: Applications <i>Chairs: Anton Naumov (Peter the Great St. Petersburg Polytechnic University) and Sandra Chevret (Arts et Métiers ParisTech)</i>		Session 2: FSW of steel <i>Chairs: Frederik Hendrickx (CRM) and Pascal Jacques (UCLouvain)</i>
10:50-11:10	Welding of multilayer polymer films using a rotary cylinder tool By Queen Tannous (Université de Nantes + Delta International Corporation), Guillaume Racineux (Ecole Centrale de Nantes), Yves Béreux (Université de Nantes), Pierre Mousseau (Université de Nantes), Anais Barasinski (Ecole Centrale de Nantes), Clément Fourmaux (Delta International Corporation)		Application of FSW to high carbon and high phosphorus weathering steel By Takumi Kawakubo (Joining and Welding Research Institute Osaka University), Tomoya Nagira (Joining and Welding Research Institute Osaka University), Kohsaku Ushioda (Joining and Welding Research Institute Osaka University), Hidetoshi Fujii (Joining and Welding Research Institute Osaka University)
11:10-11:30	The development of FSW technology in terms of the possibility of creating a device for manual repair of broken plating By Filip Parol (Warsaw University of Technology), Dominik Glowacki (Warsaw University of Technology), Artur Mościcki (Warsaw University of Technology)		Microstructure and mechanical properties of friction stir welded 0.2%C Si-Mn steel By Zexi Wu (Osaka University), Tomoya Nagira (Osaka University), Kohsaku Ushioda (Osaka University), Hidetoshi Fujii (Osaka University), Goro Miyamoto (Tohoku University)
11:30-11:50	FSW manufacturing by a machining sub-contractor: real case and challenge By Alain Lozach (CALIP GROUP), William Fauveau (CALIP GROUP)		INVITED: Effect of Tool Rotational Speed on Microstructure and Microhardness of Friction Stir Welded 321 stainless steel By Pradeep Johnson (Hindusthan College of Engineering and Technology), Murugan Nadarajan (PSG College of Technology)
11:50-12:10	Friction stir welding of thick section aluminium alloys By George Brooks (Sheffield Hallam University, TWI Ltd), Alan Smith (Sheffield Hallam University), Steven Magowan (Sheffield Hallam University), Stephen Cater (TWI Ltd), Jeroen De Backer (TWI Ltd)		Investigating the Feasibility of Joining Wrought Homogenous Armor Steel Using Friction Stir Welding By William Evans (The Ohio State University), Rafael Arthur Reghine Giorjao (The Ohio State University), Michael Eff (EWI), Martin McDonnell III (U.S. Army - Ground Vehicle Systems Center), Antonio Ramirez (The Ohio State University)
12:10-14:00	12:10: Sandwich lunch – 13:00: Trip to Liège (CRM)		
14:00-16:10	Visit of CRM in Liège		
16:10-16:50	Trip to Liège station or Louvain-la-Neuve		