

COMMISSION**International Institute of Welding***A world of joining experience***IIW Commission III****Chair: Prof. Dr. Jorge F. dos Santos (USA)****LIST OF DOCUMENTS****Monday, 17th July**

Monday, 17th July				
08:20	08:30	Plenary Session Commission III Chairman: Prof. Dr. Jorge F. dos Santos Co-Chair: Prof. H.S. Chang 1. Welcome from the Chairman 2. Report on Intermediate Meeting 2023, Institut de Soudure, Villepinte France		
Symposium on the Application of Resistance and Solid-State Processes in the Assembly of Electric Vehicles and EV Batteries Chair: Prof. H.S. Chang and Prof. Jorge F. dos Santos				
Time Start	Time End	Title and Authors	Manuscript / Abstract	IIW Doc Number
08:30	09:00	<u>Invited Speech:</u> Effect of LME Cracking on RSW Strength - The Remaining Question to Integrate LME Susceptible Materials into the Body-in-White, by Elliot Biro (Canada)	AA2023	III-2177-23
09:00	09:25	Microstructure, mechanical and functional properties of refill friction stir spot welds on multilayered aluminum foils for battery application, by Dennis Gera, B. Fu, U.F.H.R. Suhuddin, A. Plaine, N. Alcantara, J.F. dos Santos, B. Klusemann (Germany, Brazil, USA)	AA2023	III-2178-23

Time Start	Time End	Title and Authors	Manuscript / Abstract	IIW Doc Number
09:25	09:50	Quantification of driving factors causing Liquid Metal Embrittlement formation in advanced high strength steels, by Max Biegler, C. Böhne, G. Meschut, M. Rethmeier (Germany)	AA2023	III-2143-23
09:50	10:15	Closed-Loop Control of Ultrasonic Metal Welding in EV Battery Assembly, by Byoung Ou (USA)	AA2023	III-2166-23
10:15	10:40	Engineering Intermetallic Phase Formation during Resistance Spot Welding of Aluminum to Steel, by Liya Amanuel, Antonio Ramirez (USA)	AA2023	III-2154-23
10:40	11:00	Coffee Break		
11:00	11:25	Friction Stir Welding of thin A6061-T6 Aluminum alloy sheet using small diameter tools, by Daigo Kitaguchi, T. Miura, M. Mukuda, Y. Morisada, Hidetoshi Fujii (Japan)	AA2023	III-2140-23
11:25	11:50	Effect of current source on the electrode degradation during resistance spot welding of Usibor® steel, by Nilesh Kumar, Cédric Pouvreau, Sylvain Dancette, Fayaz Foroozmehr, Thomas Dupuy, Patrice Chantrenne, Damien Fabrègue, Hédi Hamdi, Jean-Michel Bergheau (France)	AA2023	III-2158-23
11:50	12:30	US Dept. of Energy – Joining Core Program: Introduction and summary of current results, by Zhili Feng and Jorge F. dos Santos (USA)	AA2023	III-2185-23
12:30	14:00	Lunch		
14:00	14:25	Joining of additively manufactured AISi10Mg to wrought AA7075-T6 with refill friction stir spot welding: microstructure and mechanical properties, by Sebastian Fritsche, J. Draper, A. Toumpis, A. Galloway, S.T. Amancio-Filho (Austria)	AA2023	III-2175-23

Sub-Commission III-A Resistance Welding and Allied Processes				
Chair: Prof. M. Kimchi, M. Tumuluru				
Time Start	Time End	Title and Authors	Manuscript / Abstract	IIW Doc Number
14:25	14:50	In-situ Evaluation of Convection Behavior in Aluminum Alloy Melting Zone during Resistance Spot Welding of Fe-Al Dissimilar Materials, by Muneyoshi Iyota, Mizuki Tachibana, Tomokazu Sano, Takahisa Shobu, Yujiro Hayashi and Tomoki Matsuda (Japan)	AA2023	III-2138-23
14:50	15:15	Increase of Electrode Life in Resistance Spot Welding of Aluminum Alloys by the Combination of Surface Patterning and Thin-film Diffusion Barriers, by Sasha Brechelt, H. Wiche, J. Junge, R. Gustus, H. Schmidt, V. Wesling (Germany)	AA2023 M	III-2144-23
15:15	15:40	Review of Electrode Force Control Systems for Resistance Spot Welding Processes, by Munkhchimeg Raash and Hee Seok Chang (Republic of Korea)	AA2023	III-2146-23
15:40	16:05	Data analysis in resistance spot welding – process monitoring for a galvanized dual phase steel based on the electrode displacement, by Moritz Ullrich, M. Wohner, S. Jüttner (Germany)	AA2023 M	III-2169-23
16:05	16:30	Coffee Break		
16:30	16:55	Resistance Spot Welding of die-casted and wrought Aluminium Alloys - Challenges and Potential, by Maik Epperlein, Alexander Schiebahn, Uwe Reisgen (Germany)	AA2023	III-2179-23
16:55	17:20	Microstructure evolution of interfaces in parallel gap resistance welding of copper wires and silver interconnector and its effect on mechanical and electrical properties of joints, by Nannan Chen, Guanzhi Wu, Min Wang, Chen Shen, Xuemin Hua (PR China)	AA2023	III-2171-23

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17:20	17:45	Analysis of Welding Conditions at Simultaneous Operation of Resistance Welding Machines, by Zygmunt Mikno and Mariusz Stepień (Poland)	AA2023 M	III-2156-23
17:45	18:10	Projection Assisted Resistance Line Welding (PA-RLW) of Aluminium alloys for automobile short flange applications, by Savyasachi Nellikode, Tejaswin Krishna, Yeong-Do Park (Republic of Korea)	AA2023	III-2163-23

Tuesday, 18th July

Sub-Commission III-B Friction Based Processes

Chair: Prof. P. Vilaça

08:30	09:00	IIW Secretariat Information: Dr. Elisabetta Sciacaluga Welding in the World update: Prof. John Lippold	—	—
09:00	09:25	<u>Invited Speech:</u> Improve the technical versatility of refill friction stir spot welding by differential rotation: an abridged summary of represented cases at Helmholtz-Zentrum Hereon, by Banglong Fu, Ting Chen, Uceu F.H.R. Suhuddin, Junjun Shen, Benjamin Klusemann, Jorge F. dos Santos, Michael Rethmeier (Germany)	AA2023	III-2159-23
09:25	09:50	Friction Welding of Bimetallic Aluminium Alloy AA2219 and Steel Alloy SS321 with Pure Aluminium and its Applications in Aerospace Industry, by Abhishek Gupta, Praveen Potlacheruvu, Anand G Sarda (India)	AA2023	III-2142-23

Time Start	Time End	Title and Authors	Manuscript / Abstract	IIW Doc Number
09:50	10:15	Semi-Stationary Shoulder Bobbin Tool: An Approach to Achieve High Speed and Quality Friction Stir Welding of Magnesium Alloy, Gaohui Li, Li Zhou, Ke Chen, J.F. dos Santos, B. Klusemann (PR China, Germany, USA)	AA2023	III-2182-23
10:15	10:40	Impact of shape optimization on friction stir welding of similar aluminum joints using bobbin tools, by Toni Sprigode, Andreas Gester, Guntram Wagner, Angelika Brückner-Foit, Adrian Rienäcker (Germany)	AA2023	III-2183-23
10:40	11:00	Coffee Break		
11:00	11:30	Determination of the load acting on the probe by separating force and torque during FSW of AA 6060 T66, by Martin Sennewald, Ramon Wüstefeld, Michael Hasieber, Torsten Löhn and Jean Pierre Bergmann (Germany)	AA2023	III-2157-23
11:30	12:00	Effect of Linear Friction Welding Conditions on Hydrogen Embrittlement of Medium Carbon Steel Joint, by Riki Toramoto, T. Yamashita, K. Ushioda and H. Fujii (Japan)	AA2023	III-2141-23
12:00	12:30	The effect of ultrasonic vibration on residual stress and microstructure in friction stir welding of dissimilar Al/Mg alloys, by Najib Ahmad Muhammad, Peihao Geng , ChuanSong Wu, Ninshu Ma (PR China)	AA2023	III-2153-23
12:30	14:00	Lunch		
Sub-Commission III-A Resistance Welding and Allied Processes Chair: Prof. M. Kimchi, M. Tumuluru				
14:00	14:25	Increase Reliance in Resistance Spot Welding Simulation Results through Scientific Investigation of Potential Sources of Error, by Martin Baumgarten, Johannes Koal, Stefan Heilmann, Hans Christian Schmale (Germany)	AA2023	III-2162-23

Time Start	Time End	Title and Authors	Manuscript / Abstract	IIW Doc Number
14:25	14:50	Automated local resistance measurements of resistance spot welding electrodes for aluminium alloys to characterize the electrode wear, by Stefan Heilmann, M. Merx, A. Cramer, M. Baumgarten, J. Koal, J. Müller, S. Ihlenfeldt, U. Füssel, H.-C. Schmale (Germany)	AA2023	III-2164-23
14:50	15:15	Microstructure and Fracture Behavior of Resistance Spot Welds of 1.8 GPa Al-Si Coated Hot-Stamped Boron Steel by Sunusi Marwana Manladan, YeoJin Jang, and Yeong-Do Park (Republic of Korea)	AA2023	III-2165-23
15:15	16:10	Behaviour of Al/steel hybrid RSW joints under high cycle fatigue loading, by Ákos Meilinger, Mariann Fodorné Cserépi, János Lukács (Hungary)	AA2023 M	III-2168-23
16:10	16:30	Coffee Break		
16:30	16:55	Behavior of Resistance Spot Welded Thermomechanically Rolled High Strength Steels Under Tensile Shear and Cross Tension Loads, by István Borhy, Marcell Gáspár (Hungary)	AA2023 M	III-2172-23
16:55	17:20	Understanding the Bonding Mechanism in Short-Time Resistance Projection Welding: A Comprehensive Analysis, by Johannes Koal, M. Baumgarten, J. Zschetzsche, H.C. Schmale (Germany)	AA2023 M	III-2174-23
17:20	17:45	Automated Torsion Testing of Spot Welds, by Christian Mathiszik, J. Koal, J. Zschetzsche, H.-C. Schmale (Germany)	AA2023 M	III-2176-23
17:45	18:10	Investigating the effect of Si on the liquid metal embrittlement susceptibility of advanced high strength steels, by Fateme Abdiyan, Hatem Zurob, Joseph McDermid and Andrew Macwan (Canada)	AA2023	III-2184-23

Wednesday, 19 th July				
Sub-Commission III-C Inaugural Session on Solid State Additive Manufacturing Chair: Prof. J.F. dos Santos, Prof. Wenya Li				
Time Start	Time End	Title and Authors	Manuscript / Abstract	IIW Doc Number
08:15	08:30	Solid-State Additive Manufacturing: An Introduction, by Jorge F. dos Santos (USA)	AA2023	III-2180-23
08:30	09:00	<u>Invited Speech:</u> Wire-based friction stir additive manufacturing and remanufacturing: Denser, Stronger, Faster, by Yongxian Huang, Huizi Chen (PR China)	AA2023	III-2152-23
09:00	09:25	Robotic friction stir additive manufacturing, by Zeyu Zhang, Xiangchen Meng, Yongxian Huang (PR China)	AA2023	III-2150-23
09:25	09:50	Microstructural modification of AA2195 aluminum alloys via deformation-driven metallurgy, by Dongxin Mao, Yuming Xie, Yongxian Huang (PR China)	AA2023	III-2151-23
09:50	10:15	Microstructural characterization and mechanical properties of high strength aluminum-lithium alloy fabricated via friction stir additive manufacturing, by Wenya Li, Tao Jiang, Zhonggang Sun, Zhikang Shen (PR China)	AA2023	III-2181-23
Sub-Commission III-B Friction Based Processes Chair: Prof. P. Vilaça				
10:15	10:40	Understanding tool wear and failure to promote high-strength aluminium Refill Friction Stir Spot Welds throughout the whole tool lifetime, by Sebastian Fritsche, F. Schindler, W.S. de Carvalho, S.T. Amancio-Filho (Austria)	AA2023	III-2161-23
10:40	11:00	Coffee Break		

Time Start	Time End	Title and Authors	Manuscript / Abstract	IIW Doc Number
11:00	11:25	Cold Spot Joining of High Tensile Steel Plates, by Takumi Aibara, Masayoshi Kamai, Yoshiaki Morisada, Takaaki Miyauchi, Shinichi Hasegawa and Hidetoshi Fujii (Japan)	AA2023	III-2139-23
11:25	11:50	Effect of Rotational Speed on Mechanical Properties and Microstructural Characteristics of Rotary Friction Welded Low Alloy Steel Tube Joints, by R. Selvaraja, K. Shanmugam, P. Selvaraj, Prasanna Nagasai Bellamkonda, Balasubramanian Visvalingam (India)	AA2023 M	III-2145-23
11:50	12:15	Evolution of microstructure, texture and mechanical properties of special friction stir welded T-joints for an α titanium alloy, by Yu Su, Wenya Li (PR China)	AA2023	III-2147-23
12:15	12:45	Enabling Magnetic Pulse Welding for dissimilar tubular arrester cable joints, by Markus Graß, S. Böhm (Germany)	AA2023 M	III-2155-23
12:45	14:00	Lunch		
14:00	14:25	In-situ investigation on local strain concentrated fracture mechanism of linear friction welded dissimilar Ti17(α + β)/Ti17(β) joint during tensile deformation, by Zhenguo Guo, Tiejun Ma, Wenya Li (PR China)	AA2023	III-2148-23
14:25	14:50	Study on Microstructure and Mechanical Properties of Double-Sided and Synergistic Double-Sided FSW Joints, by Yangfan Zou, Wenya Li (PR China)	AA2023	III-2149-23
14:50	15:15	Experimental and numerical study of ultrasonic vibration enhanced friction stir welding of 2195 Al-Li alloy, by Lei Shi, Chunyan Tian, Xiaohui Lv, Chuansong Wu (PR China)	AA2023	III-2160-23
15:15	15:40	FSW Technological advancements for the Maritime industries and the impact of its digitalization for workers, by Eurico G. Assunção (Portugal)	AA2023	III-2137-23

Time Start	Time End	Title and Authors	Manuscript / Abstract	IIW Doc Number
15:40	16:05	The influence of FSW linear speed on the structural and mechanical properties of thin-sheet AZ31 magnesium alloy joints, by M. Khokhlov, Yu. Khokhlova, A. Pokliatskyi, V. Kostin (Ukraine)	AA2023 M	III-2173-23
16:05	16:30	Coffee Break		
16:30	16:55	Technology of flash butt welding of rails with railway crosses made of manganese steel, by Oleksandr Kavunichenko, Igor Ziakhor, Yevhen Antipin, Andrii Levchuk, Yurii Shylo (Ukraine)	AA2023	III-2167-23
16:55	17:20	Technologies of flash-butt welding of rails R260, and R350HT grades, by Yevhen Antipin, Igor Ziakhor, Oleksii Milenin, Oleksandr Didkovskyi, Oleksandr Kavunichenko (Ukraine)	AA2023	III-2170-23
17:20	17:45	Closure and List of Resolutions, J.F. dos Santos (USA)	—	—