C-III RESISTANCE WELDING, SOLID STATE WELDING AND ALLIED JOINING PROCESSES

Agenda: 79th Annual Assembly, Salzburg 2026

III-2401-2026

Chair: Prof. Hee Seok Chang

Comments: *13-16 July 2026, Room "Doppler Saal" at Salzburg congress, Auerspergstraße 6, 5020 Salzburg, Austria*
Meeting to be held in person only, not hybrid
Attire: Business Suit is required
C-III National Delegate Members are asked to review all documents prior to the meeting

Agenda – Monday, 13 July 2026

Time	Agenda Item	Responsibility	Action
08.20	1. Opening of the C-III Meeting	Hee S. Chang	Information
08.20	2. Administrative Tasks		
	2.1 Anti-Trust and Code of Conduct Briefing	Hee S. Chang	Information
	2.2 Attendees and Apologies, Identification of C-III Delegates	Hee S. Chang	Information
	2.3 Approval of the minutes from the past annual assembly (Doc. III-2282-2024, Doc. III-2373-2025)	Hee S. Chang	**Motion Required**
	2.4 Approval of the minutes from the past Intermediate Meeting (Doc. III-2216-2024, Doc. III-2307-2025, Doc. III-2400-2026)	Hee S. Chang	**Motion Required**
	2.5 Adoption and Approval of Agenda (Doc. III-2401-2026)	Hee S. Chang	**Motion Required**
	2.6 Discussion for update of Terms of Reference	Hee S. Chang	Information
	2.7 Presentation of Documents	Hee S. Chang	
08.40	3. Presentations	Authors	Information
17.00	4. Adjournment for the Day	Hee S. Chang	Information

Agenda – Tuesday, 14 July 2026

Time	Agenda Item	Responsibility	Action
08.20	1. Continuation of C-III Meeting	Hee S. Chang	Information
08.20	2. Presentations	Authors	Information
17.00	3. Adjournment for the Day	Hee S. Chang	Information

Agenda – Wednesday, 15 July 2026

Time	Agenda Item	Responsibility	Action
08.20	1. Continuation of C-III Meeting	Hee S. Chang	Information
08.20	2. Presentations	Authors	Information
17.00	3. Adjournment for the Day	Hee S. Chang	Information

Agenda – Thursday, 16 July 2026

Time	Agenda Item	Responsibility	Action
08.20	1. Continuation of C-III Meeting	Hee S. Chang	Information
08.20	2. Presentations	Authors	Information
10.00	3. Administrative Tasks	Hee S. Chang	
	3.1. Report on WITW	Norbert Enzinger	Information
	3.2. Administrative Issues of IIW	Elisa. Sciaccaluga	Information
	3.3. Renewal of C-III Chairmanship	Elisa. Sciaccaluga	**Motion Required**
	3.4. Activities of Commission III (Upcoming Intermediate Meeting)	Elliot Biro	Information
	3.5. Resolutions including Welding in the World	Hee S. Chang	**Motion Required**
	3.6. Other Business - Satisfaction Survey	Hee S. Chang	Information
12.30	4. Adjournment of the Meeting of Commission III	Hee S. Chang	**Motion Required**

Commission III Leadership (Sub-Commissions, Chairs, Vice-Chairs, and Secretary)

Commission III — Resistance Welding, Solid State Welding and Allied Joining Processes			
Chair	Hee Seok CHANG	Republic of Korea	hs.chang@iiwelding.net
Vice Chair	Pedro VILAÇA	Finland	pedro.vilaca@aalto.fi
Sub-Commission III-A: Resistance Welding and Allied Processes			
Chair	Elliot BIRO	Canada	elliotbiro@iiwelding.net
Vice-Chair	Murali TUMULURU	USA	mtumuluru@gmail.com
Sub-Commission III-B: Friction Based Solid-State Processes			
Chair	Wenya LI	China	liwy@nwpu.edu.cn
Vice-Chair	Pedro VILAÇA	Finland	pedro.vilaca@aalto.fi
Sub-Commission III-C: Solid-State Additive Manufacturing			
Chair	Jorge F. Dos Santos	Germany	jorge.dos.santos@stirtec.at
Secretary			
Volunteer	Zygmunt Mikno	Poland	zygmunt.mikno@git.lukasiewicz.gov.pl

National Delegate of Commission III

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Appendix (Schedule of 65 Presentations in Total)

Monday, 13rd July 2026 <Day 1>			
Commission III Opening Session Chair: Prof. Hee Seok Chang (Republic of Korea)			
Time Slots Central European Summer Time (CEST)		**Title, Authors and Delegation**	**IIW Document Number III-xxxx-26**
8:00	8:20	Registration and Check in	M denotes full paper
8:20	8:40	Plenary session dealing with administrative issues of Commission III Welcome and Introduction, Report on Intermediate Meeting 2026	
8:40	9:05	***Invited Speech C-III-A;*** Data-Driven Integration of Experiment and Simulation for Fatigue Life Prediction of Resistance Spot Welds Considering Manufacturing Uncertainty Elisabeth Baer*1, T. Mayer 2, M. Waltz 1, U. Tetzlaff 1 1 Technische Hochschule Ingolstadt, 85049 Ingolstadt, Germany 2 AUDI AG, 85057 Ingolstadt, Germany * Corresponding author: Elisabeth.Baer@thi.de	2413
9:05	9:30	***Invited Speech C-III-B;*** Effect of Ultrasonic Excitation on Material Flow, Defect Formation and Intermetallic Layer Evolution in Friction Stir Welding Marat Rebrin*1, M. Mädlow 2, A. Gester 1, D. Ozherelkov1, T. Sprigode1, and G. Wagner1 1 Chemnitz University of Technology, Institute of Materials Science and Engineering, Chair of Composites and Material Compounds, Erfenschlager Straße 73, 09125 Chemnitz, Federal Republic Of Germany 2 Fraunhofer Institute for Machine Tools and Forming Technology IWU, Process Chain Analysis and Control Department Sensor/Actuator Integration Group Nöthnitzer Str. 44, 01187 Dresden * Corresponding author: marat.rebrin@mb.tu-chemnitz.de	2444 M upload
9:30	9:55	***Invited Speech C-III-C;*** A Unified β-Index Framework for Quantifying Dimensional Stability in Additive Friction Stir Deposition Savarana Sundar, W.X. Zhang, L. Shi , C. S. Wu* Institute of Materials Joining, Shandong University, 17923 Jingshi Road, Jinan, 250061, China *Corresponding author: wucs@sdu.edu.cn	2411
9:55	10:20	***Grandjon A Award presentation;*** Influence of Fine-Scale Plastic Flow on Residual Stresses in Additive Friction-Stir Deposition Cole Franz*a, Rob Patterson b, Tony Schmitz c, S.S. Babu d, Thomas R. Watkins e, Katharine Page* a a Tickle College of Engineering, 863 Neyland Dr, Knoxville, TN, USA. b Machine Tool Research Center, The University of Tennessee, Knoxville, TN, USA. c MSC Industrial Supply Co., Davidson, NC, USA. d A. James Clark School of Engineering, University of Maryland, College Park, MD, USA. e Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN, USA. Primary corresponding author: Cole Franz (cfranz@vols.utk.edu) Secondary corresponding author: Katharine Page (kpage10@utk.edu)	2429
10:20	10:45	***Paton Prize presentation;*** Friction Self-piercing Riveting of lightweight alloys and dissimilar materials Yongbing Li* 1, Jiarui Yuan 1, Feilong Yu 1, Yunwu Ma 1 1 Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, P.R. China * Corresponding author: yongbinglee@sjtu.edu.cn	2472
10:45	11:00	coffee break	

Symposium on LME Analysis in Resistance Spot Welding(Sub-Commission III-A) Chair: Dr. Murali Tumuluru (USA), Prof. Elliot Biro(Canada)			
11:00	11:20	Towards Standardized LME Assessment in Resistance Spot Welding: Prioritization and Experimental Validation of Testing Methods Mohammad Shojaee*1, Scott Murray 1, Ali Afzal 1, Reza Bakhtiari 1, Kevin Teng 2, Hassan Ghassemi-Armaki 2, Elliot Biro 1 1 University of Waterloo 2 General Motors R&D *corresponding author : mshojaee@uwaterloo.ca	2422
11:20	11:40	Statistical Considerations of a Liquid Metal Embrittlement Spot Welding Test Korbinian Höger*1,2, Martin Gruber3, Reinhold Schneider1, Katharina Steineder3, Matthias Wallner3, Christof Sommitsch2 1 Department for Materials Technology, University of Applied Sciences Upper Austria, Wels, 4600, Austria 2 Institute of Material Science, Joining and Forming, Graz University of Technology, Graz, 8010, Austria 3 Business Unit Coil, Research & Development, voestalpine Stahl GmbH, Linz, 4020, Austria *Corresponding author:Korbinian.Hoeger@voestalpine.com	2428
11:40	12:00	Characterizing the Impact of Liquid Metal Embrittlement and Electrode Indentation on the Fatigue Life of Resistance Spot Welds Moritz Ullrich* and Sven Jüttner Otto-von-Guericke-University Magdeburg, Institute for Materials, Technologies and Mechanics Universitätsplatz 2, 39106 Magdeburg, Germany * Corresponding author: moritz.ullrich@ovgu.de	2431 M upload
12:00	12:20	In Situ Observation of LME Cracking in Resistance Spot Welding of High-Strength Steel Sheets: Relationship between Molten Metal Convection and LME Crack Formation M. Iyota*1,a, d, E. Shimokawa1, Y. Taketani1, T. Shobu2, T. Matsuda3, Y. Hayashi4, T. Sano3 1 Osaka Institute of Technology , 2 Japan Atomic Energy Agency 3 The University of Osaka, 4 RIKEN * Corresponding author: muneyoshi.iyota@oit.ac.jp	2456
12:20	12:40	In Situ Observation of LME Cracking in Resistance Spot Welding of High-Strength Steel Sheets: The Effects of Specimen Geometry on LME Crack Formation E. Shimokawa*1, a, M. Iyota1, Y. Taketani1, T. Shobu2, T. Matsuda3, Y. Hayashi4, T. Sano3 1 Osaka Institute of Technology , 2 Japan Atomic Energy Agency 3 The University of Osaka, 4 RIKEN * Corresponding author : m1m02510320@oit.ac.jp	2455
12:40	13:50	Lunch Break	
Symposium on Artificial Intellegence/Machine Learning for Resistance Welding and Friction Based Processes Chair: Prof. Hee Seok Chang(Republic of Korea), Prof. Elliot Biro(Canada)			
13:50	14:10	Hybrid AI Framework for Real-Time Monitoring in Friction Stir Welding Naveen Loganathan*1 , Joel Anderson1 , Vivek Patel1 Department of Engineering Science, University West, 461 86 Trollhättan, Sweden *Corresponding author: naveen.loganathan@hv.se	2427
14:10	14:30	Human-AI collaboration framework to support friction element welding monitoring G. Antal*1,2,a, G. Bruno1,2,b, P. Russo Spena1,2,c, M. De Maddis1,2,d 1 Department of Management and Production Engineering, Politecnico di Torino, Torino, Italy 2 Advanced Joining Technologies Center (J-Tech@PoliTO), Politecnico di Torino, Torino, Italy *Corresponding author: gabriel.antal@polito.it	2426 M
14:30	14:50	Machine Learning for In-Situ Expulsion Prevention in Three-Sheet RSW: Predictive Trajectory Modeling Using Early-Stage Dynamic Resistance Curves A. Aminzadeh*, B. NaraghiFarshad', JU. Kim', H. Habib', M. Nooranfar', T. Belgasam², E. Biro' 1 Centre for Advanced Materials Joining, Department of Mechanical and Mechatronics Engineering, University of Waterloo, 200 University Avenue West, Waterloo, ON, N2L 3G1, Canada 2 Honda Development & Manufacturing of America, 21001 State Route 739, Raymond, OH 43067, USA * Corresponding author: ahmad.aminzadeh@uwaterloo.ca	2441
14:50	15:10	Comprehensive analysis of machine- and component-dependent disturbances on ultrasonic metal welding E. Helfers* 1, O. Stockemer 2, A. Schiebahn 1, U. Reisgen 1, B. Corves 2 1 Welding and Joining Institute (ISF), RWTH Aachen University, Pontstraße 49, 52062 Aachen, Germany 2 Institute of Mechanism Theory, Machine Dynamics and Robotics (IGMR), RWTH Aachen University, Eilfschornsteinstraße 18, 52062 Aachen, Germany * Corresponding author: eric.helfers@isf.rwth-aachen.de	2433 M
Symposium on Friction Stir Welding(Sub-Commission III-B) Chair: Dr. Jorge F. Dos Santos(Germany), Prof. Pedro Vilaça (Finland)			
15:10	15:30	Synergistically double-sided probeless friction stir spot welding: The effect of tool rotation modes on joint formation and strengthening mechanisms Wenlong Fan* 1, Xiawei Yang 1, Wenya Li 1 , Yu Su 1, Qiang Chu 2 1 Shaanxi Key Laboratory of Friction Welding Technologies, State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, Xi'an 710072, China 2 Xi'an Aerospace Engine Co., Ltd, Xi'an 710100, China * correspnding author: fwt2024@mail.nwpu.edu.cn	2402

15:30	15:50	Synergistically double-sided friction stir welding: A multi-study of the effect of different tool designs on thermal prediction and the relationship between precipitation behavior and microstructure evolution Y. P. Rikko* 1, W. Li* 1, B. Alexander 2, V. Achilles 3, W. Wang 4 1 State Key Laboratory of Solidification Processing, Shaanxi Key Laboratory of Friction Welding Technologies, School of Materials Science and Engineering, Northwestern Polytechnical University, Xi'an, 710072, Shaanxi, P. R. China 2 Mavlyutov Institute of Mechanics, Subdivision of the Ufa Federal Research Centre of the Russian Academy of Sciences, Ufa 450054, Russia 3 Mechanical Engineering Department, University of West Attica, Athens 12241, Greece 4 Beijing Solidwel Intelligent Technology Co., Ltd, Beijing, 100070, P. R. China *Corresponding author: rikkoputra@mail.nwpu.edu.cn, liwy@nwpu.edu.cn	2406
15:50	16:10	coffee break	
16:10	16:30	Characterization of double-side friction stir-based joining of aluminum alloy to structural polymer Prabilson Khadka , Timon Schapals, Pedro Vilaça* Department of Energy and Mechanical Engineering, School of Engineering, Aalto University, Finland * Corresponding author: pedro.vilaca@aalto.fi	2461
16:30	16:50	Multiscale study of ultrasonic vibration enhanced Ti/Al dissimilar friction stir welding Lei Shi *1,a, b, Xiankun Zhang1, Chuansong Wu1 1 MOE Key Lab for Liquid-Solid Structure Evolution and Materials Processing, Institute for Materials Joining, Shandong University, Jinan 250061, China * Corresponding author : lei.shi@sdu.edu.cn	2454
16:50	17:10	Cracking mechanism and its preventive measures in underwater friction taper stitch welding Zhijiang Wang*, Xinyu Liang, Siliang Chen, Lei Cui, Caiyan Deng Tianjin Key Laboratory of Advanced Joining Technology, School of Materials Science and Engineering, Tianjin University, 135 Yaguan Rd., Jinnan District, Tianjin, China * corresponding author :wangzj@tju.edu.cn	2463 M upload
17:10	17:30	Meeting of Working Group, C-III-B-WG-B1 (ISO 25239 on FSW of Aluminum) Chair: Dr. Axel Meyer Meyer@riftec.de Mobil: 0162/1072790, DW -10, RIFTEC ,Germany	
Adjournment – Continues on 14th July 2026			

Tuesday, 14th July 2026 <Day 2>

Time Slots Central European Summer Time (CEST)		Title, Authors and Delegation	IIW Document Number III-xxxx-26
8:00	8:20	Registration and Check in	M denotes full paper
Symposium on Heating Issues in Friction Stir Welding(Sub-Commission III-B) Chair: Prof. Pedro Vilaça (Finland), Dr. Heidi Cramer (Germany)			
8:20	8:40	Microstructure–Property Relationships in LPBF-Processed A20X Alloy after Friction Stir Welding and Post-Weld Heat Treatment M. Abankar*1,2,a, P. Matteis3,b, M. De Maddis1,2,c, P. Russo Spena1,2,d 1 Department of Management and Production Engineering, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy 2 Advanced Joining Technologies Center (J-Tech@PoliTO), Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy 3 Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy * Corresponding author: mohammad.abankar@polito.it	2416
8:40	9:00	Influence of thermal distribution on microstructural evolution and mechanical properties of induction preheating-assisted friction stir welded AA6082 Joints Subhrajyoti Saroj*1, a, Sachin D. Kore1, 2, b, Madhav Raturi3, c, Priyabrata Sahoo1, d 1 School of Mechanical Sciences, Indian Institute of Technology Goa, Ponda, Goa, 403401, India 2Veermata Jijabai Technological Institute, Mumbai, Maharashtra, 400019, India 3Symbiosis Institute of Technology, Pune, Maharashtra, 412115, India * Corresponding author: subhrajyoti21263103@iitgoa.ac.in	2419 M upload
9:00	9:20	Friction stir welding with enhanced root-localized heat for aluminum alloy thick-plates Xiaotian Ma*1,2,a, Yongxian Huang1,2,b 1 Zhengzhou Advanced Research Institute, Harbin Institute of Technology, Zhengzhou 450000, China 2 State Key Laboratory of Precision Welding & Joining of Materials and Structures, Harbin Institute of Technology, Harbin 150001, China * Corresponding author: maxiaotian@hit.edu.cn	2450

Symposium on Tool Issues in Friction Stir Welding(Sub-Commission III-B) Chair: Prof. Wenya Li, Dr. Heidi Cramer (Germany)			
9:20	9:40	Feasibility of Alumina Tools in Friction Stir Welding of Aluminum Alloy AA 6082 T. Sprigode1,a, h, M. Emmel2,b, J. Schade2,c, A. Gester1,d,i, M. Rebrin1,e,j, D. Ozherelkov1,f,k, G. Wagner1,g 1 Chair of Composites and Material Compounds, Chemnitz University of Technology, 09111 Chemnitz, Germany 2 Research Institute for Glass - Ceramics GmbH, Heinrich-Meister-Straße 2, 56203 Höhr-Grenzhausen, Germany *Corresponding author: toni.sprigode@mb.tu-chemnitz.de	2448 M upload
9:40	10:00	Localized high-speed friction stir welding of aluminum alloys by spiral-shaped tool Y. Morisada*1,a, K. Murase2,b, M. Mukuda1,c, N. Harada1,d, H. Fujii1,e 1 Joining and Welding Research Institute, The University of Osaka 2 Mitsubishi Electric Corporation * corrsponding author : morisada.yoshiaki.jwri@osaka-u.ac.jp	2459
10:00	10:20	Stationary-shoulder friction stir channeling of aluminum-based cooling channels: Flow mechanisms and enhanced heat transfer efficiency Yongxian Huang* 1,a, Cheng Shan1 1 State Key Laboratory of Precision Welding & Joining of Materials and Structures, Harbin Institute of Technology, Harbin 150001, China * Corresponding author: yxhuang@hit.edu.cn	2440
10:20	10:40	coffee break	
10:40	11:00	Experimental Investigation of Pinless Friction Stir Welding of EN AW-6082-T651 for Model Validation H. Gottlieb * 1,a,e, P. Capozzi2,b, T. Mayer2,c,f, N. Enzinger1,d,g 1 Institute of Materials Science, Joining and Forming, TU Graz, Austria 2Institute for Mechanical Systems, ZHAW School of Engineering, Winterthur, Switzerland * Corresponding author: hannah.gottlieb@tugraz.at	2443 M
Symposium on Resistance Spot Welding(Sub-Commission III-A) Chair: Dr. Murali Tumuluru (USA), Prof. Elliot Biro(Canada)			
11:00	11:20	High-Speed Imaging for the Visualization of Resistance Spot Welding Processes J. Koal*1,a,b, V. Megerlin2, F. Jung1, M. Baumgarten1,c, J. Zschetzsche1, H.C. Schmale1,d 1 Dresden University of Technology, Chair of Joining Technology and Assembly 2 GSI - Gesellschaft für Schweißtechnik International mbH, Munich, Germany * Corresponding author: johannes.koal@tu-dresden.de	2467
11:20	11:40	Mechanism of heterogeneous nugget formation in HPDC AlSi7MnMg resistance spot welding: flow and redistribution of second phases under non-uniform melting Yuhao Wang* 1,2, Yongbing Li1,2 1Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures, Shanghai Jiao Tong University, Shanghai, China 2State Key Laboratory of Mechanical System and Vibration, Shanghai Jiao Tong University, Shanghai, China * Corresponding author: yongbinglee@sjtu.edu.cn	2414
11:40	12:00	An ICME-Based Approach to Weld-Bonded Joints in Advanced High-Strength Steel Henry Leon-Henao 1, Antonio J. Ramirez*1 1 Department of Materials Science and Engineering, The Ohio State University, 1248 Arthur E Adams Dr, Columbus, OH 43221, USA * Corresponding author : leon.156@buckeyemail.osu.edu	2446
12:00	12:20	A New Type of Liquid Metal Embrittlement in Resistance Spot Welding of AHSS with Reduced Flange Widths: Formation and Effect on Load-Bearing Capacity Keke Yang * 1,a, Bassel El-Sari 2,b, Viktoria Olfert 1,c, Zhuoqun Wang 1,d, Max Biegler 2,b, Michael Rethmeier 4,3,2,c, Gerson Meschut 1,e 1 Laboratory for Material and Joining Technology (LWF), 33098 Paderborn, Germany 2Fraunhofer Institute for Production Systems and Design Technology (IPK),10587 Berlin, Germany 3Federal Institute for Materials Research and Testing (BAM), 12205 Berlin, Germany 4Institute for Machine Tools and Factory Management (IWF), Technical University of Berlin, 10623 Berlin, Germany. * Corresponding author: keke.yang@lwf.upb.de	2434
12:20	12:40	Formation and mechanical performance of the pre-counter bore resistance rivet welded joints for thick cast aluminum and ultra-high strength steel Zixuan Chen * Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, 200240, P.R. China *Corresponding author: zx-chen@sjtu.edu.cn	2420
12:40	13:50	**Lunch Break**	

13:50	14:10	Mechanistic Analysis of Whisker Formation and Up-Slope Heat Input Control on Contact Pressure in Al-Si Coated Hot-Stamping Steel RSW Su-Min Parka,1, Tejaswin Krishnab,1, Seok-Tae Yoonc,2, Yeong-Do Park* d,1 1 Department of Advanced Materials Engineering, Dong-Eui University, Busan 47340, Republic of Korea 2 Department of Naval Architecture and Ocean Engineering, Dong-Eui University, Busan 47340, Republic of Korea * Corresponding author: ypark@deu.ac.kr	2464
		Symposium on Ultrasonic Metal Welding(Sub-Commission III-B) Chair: Dr. Murali Tumuluru (USA), Prof. Elliot Biro (Canada)	
14:10	14:30	Detection of the real joint interface between ultrasonically welded aluminium strands (Al-strands) and copper terminals (Cu-terminals) connections using non-destructive testing methods F. Wohlwend*1,a, F.W. Müller2,b , A. Schiebahn3,c, U. Reisgen3,d 1 BMW Group, Munich, Germany 2 FEF Forschungs- und Entwicklungsgesellschaft Fügetechnik GmbH, Aachen, Germany 3 RWTH Aachen University – Welding and Joining Institute, Aachen, Germany * Corresponding author : Fabian.Wohlwend@bmw.de	2442 M upload
14:30	14:50	Storage-Dependent Surface Oxidation and Mechanical Performance of Ultrasonically Welded Stranded Wires D. Ozherelkov*1, J. Kim 2, A. Gester 1, M.Rebrin 1, T.Sprigode 1, M. Gensler 2, G. Wagner 1 1 Chemnitz University of Technology, Chemnitz, Germany 2 Fraunhofer Institute for Applied Polymer Research IAP, Potsdam, Germany * Corresponding author: dmitrii.ozherelkov@mb.tu-chemnitz.de	2436 M upload
14:50	15:10	Analysis of Tool Wear Behavior for Ultrasonic Copper Welding K. Ehlich* , M. Hasieber, J.P. Bergmann Production Technology Group, Technische Universität Ilmenau, Ilmenau, Germany * Corresponding author: kai.ehlich@tu-ilmenau.de	2409 M upload
15:10	15:30	Ultrasonic Welding of Carbon Fiber Reinforced PA6: Joint Formation and Strengthening Mechanisms Tingting Zhang * 1,2, 1 College of Mechanical and Engineering, Taiyuan University of Technology, Taiyuan, 030024, Taiyuan, 030024, P.R. China 2 Engineering Research Center of Advanced Metal Composites Forming Technology and Equipment, Ministry of Education, Taiyuan, 030024, P.R. China * corresponding author: zhangtingting@tyut.edu.cn	2425
15:30	15:50	Toward reversible ultrasonic metal welded wire/terminal joints for recycling and re-use A. Gester * 1,a, d, D. Ozherelkov1,b, G. Wagner1,c 1 Chair of Composites and Material Compounds, Chemnitz University of Technology, Chemnitz, Germany * Corresponding author : andreas.gester@mb.tu-chemnitz.de	2437
15:50	16:10	coffee break	
		Symposium on Additive Friction Stir Deposition(Sub-Commission III-C) Chair: Dr. Jorge F. Dos Santos(Germany), Prof. Pedro Vilaça (Finland)	
16:10	16:30	Friction stir deposition enables robust metal/thermoset integration Licheng Sun*, Huihong Liu, Yongbing Li Shanghai Jiao Tong University, Shanghai, China * Corresponding author: sunlicheng@sjtu.edu	2417
16:30	16:50	Hybrid Recycling of End-of-Life Aluminum Scrap via Additive Friction Stir Deposition Tirdad Niknejad *1, Ning Zhu 2, Haiou Jin 1 , Paul Allison 2, Brian Jordan 2 1 CanmetMATERIALS, Natural Resources Canada, 183 Longwood Road South, Hamilton, Ontario, Canada 2 Department of Mechanical Engineering, Baylor University, Waco, TX 76706, USA *Corresponding author: seyedtirdad.niknejad@nrcan-rncan.gc.ca	2468 M
16:50	17:10	Mechanistic insight into stress-mediated corrosion behavior of friction stir additive manufactured magnesium alloys Yuming Xie* 1,a, Jianing Dong1 1 State Key Laboratory of Precision Welding & Joining of Materials and Structures, Harbin Institute of Technology, Harbin 150001, China * Corresponding author: ymxie@hit.edu.cn	2439
		Adjournment – Continues on 15th July 2026	

Wednesday, 15th July 2026 <Day 3>			
Time Slots Central European Summer Time (CEST)		**Title, Authors and Delegation**	**IIW Document Number III-xxxx-26**
8:00	8:20	Registration and Check in	M denotes full paper
Symposium on Refill Friction Stir Welding(Sub-Commission III-C) Chair: Dr. Jorge F. Dos Santos(Germany), Prof. Pedro Vilaça (Finland)			
8:20	8:40	Liquid Metal Embrittlement in Refill Friction Stir Spot Welding of Dissimilar Magnesium and Galvanized Steel Ting Chen1,*, Hao Wang2, Banglong Fu2, Chunjie Huang3, Tong Shen1, Uceu Suhuddin1, Emad Maawad1, Thomas Klassen4, Guoliang Qin2, Benjamin Klusemann1,5 1 Helmholtz-Zentrum Hereon, Germany 2 Shandong University, China 3 Northwestern Polytechnical University, China 4 Helmut Schmidt University, Germany 5 Leuphana University Lüneburg, Germany *Corresponding author: ting.chen@hereon.de	2410
8:40	9:00	Improve the weldability of Al-Si coated hot-stamped steel using refill friction stir spot welding T. Shen*1,a, T. Chen1,b, U. Suhuddin1,c, B. Klusemann1,2,d 1 Helmholtz-Zentrum Hereon, Institute of Material and Process Design 2 Leuphana University of Lüneburg, Institute for Production Technology and Systems *Corresponding author: tong.shen@hereon.de	2412
9:00	9:20	Intermetallic layer formation in aluminium-copper refill friction stir spot welding G. Hauptmann*1,a, G.H. Marcatto de Oliveira1,b, F. Schindler1, S. Fritsche1, B. F. Batistão1,2, P. Gargarella2, T. Weinberger3, H. Ammay4, A. Toumpis4, A. Galloway4, S.T. Amancio-Filho1,c 1 Graz University of Technology, Institute of Materials Science, Joining and Forming (IMAT), Professorship "Aviation Materials and Manufacturing Techniques", Kopernikusgasse 24/1, 8010 Graz, Austria 2 Federal University of São Carlos, Department of Materials Engineering, Rod. Washington Luís, Km 235 SP-310, 13565-905, São Carlos, SP, Brazi 3 Stirtec GmbH, Feldkirchenstraße 30b, 8401 Kalsdorf bei Graz, Austria 4 Mechanical and Aerospace Engineering, The University of Strathclyde, 75 Montrose Street, Glasgow G1 1XJ, UK * Corresponding author: georg.hauptmann@tugraz.at	2430
9:20	9:40	Effect of plunge depth on void formation and mechanical strength in dissimilar RFSSW H. Ammay*1,a, G. Hauptmann2, G.H. Marcatto de Oliveira2, S.T. Amancio Filho2, A. Galloway1,b, A. Toumpis1,c 1 Department of Mechanical and Aerospace Engineering, University of Strathclyde, 75 Montrose Street, Glasgow G1 1XJ, UK 2 Graz University of Technology, Institute of Materials Science, Joining and Forming (IMAT), Professorship "Aviation Materials and Manufacturing Techniques", Kopernikusgasse 24/1, 8010 Graz, Austria * Corresponding author: himal.ammay@strath.ac.uk	2466
Symposium on Linear/Rotary Friction Welding(Sub-Commission III-B) Chair: Dr. Murali Tumuluru (USA), Prof. Elliot Biro (Canada)			
9:40	10:00	Diffusion effects of β-Stabilizing element to interface microstructure evolution and nano-mechanical characteristics in dissimilar TC4/TC17 LFW joints Tiejun Ma, Wenya Li, Yu Su and Hongbo Zhang Shaanxi Key Laboratory of Friction Welding Technologies, State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, Xi'an 710072, China * corresponding author: zhanghongbo@mail.nwpu.edu.cn	2404
10:00	10:20	Electropulsing-driven defect dynamics enable simultaneous strengthening and toughening in linear friction welding dual-property titanium alloys A. Peng-kang Zhao *1, a, B. Min Zhang2, b, C. Pei-hao Geng3, c, D. Yu-lung Chiu4, d, E. Nin-shu Ma5, e 1 School of Mechanical Engineering, Xi'an University of Technology, Xi'an 710048, P.R. China 2 School of Materials Science and Engineering, Xi'an University of Technology, Xi'an 710048, P.R. China 3 School of Mechanical Engineering, Shanghai Jiaotong University, Shanghai, 200240, P.R. China 4 School of Metallurgy and Materials, University of Birmingham, B15 2TT, Birmingham, UK 5 Joining and Welding Research Institute, Osaka University, Osaka 567-0047, Japan * Corresponding author: zhaopengkang@xaut.edu.cn	2435
10:20	10:40	coffee break	
10:40	11:00	An integrated rotary friction welding strategy to synergistically engineer microstructure of high-strength aluminum-alloy joints Huihong LIU*1,a, Kailiang CHEN1,b, Zexi WU1,c, Yongbing LI1,d 1 Shanghai Jiao Tong University, Shanghai, China * Corresponding author: liuhuihong@sjtu.edu.cn	2415

11:00	11:20	Friction stir riveting process for joining thermosetting CFRP and stainless steel in high-end manufacturing Feilong Yu 1,2, Yunwu Ma* 1,2, Hailang Wan 1,2, Peihao Geng 1,2, Yongbing Li 1,2 1 State Key Laboratory of Mechanical System and Vibration, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, 200240, China 2 Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, 200240, China *Corresponding author : bmyw3337@sjtu.edu.cn	2407
11:20	11:40	Formation of Dissimilar Joint interface between A1050 Aluminum and TP340 Titanium during Disc Friction Joining Toshiya Shibayanagi* 1 and Miyu Yamazaki2 1) Aluminum Research Center, University of Toyama 2) Graduate Student of University of Toyama, 180 Futagami, Takaoka, Toyama, 933-8588, Japan * corresponding author :toshiya@sus.u-toyama.ac.jp	2460
Symposium on Resistance Spot Welding(Sub-Commission III-A) Chair: Dr. Murali Tumuluru (USA), Prof. Elliot Biro(Canada)			
11:40	12:00	***C-III Guest Speaker Presentation:*** The influence of the thickness of the zinc protective layer on the welding current shunting effect in the resistance welding process Zygmunt Mikno*1,4, J.Pikula 1, M.Stepien 2, M.Tumurulu 3 1 Łukasiewicz Research Network - Upper-Silesian Institute of Technology - Welding Centre, Gliwice, Poland 2 Silesian University of Technology, Faculty of Electrical Engineering, Gliwice, Poland 3 Tumuluru Welding Consulting, Wexford, USA 4 Polish Welding Society * Corresponding author : Zygmunt.Mikno@git.lukasiewicz.gov.pl	2452
12:00	12:20	Comparative Study of Resistance Spot Welding and Resistance Spot Brazing in a single-sided Arrange-ment for low alloyed Steel Sheets T. Reinboth* 1,a,c, S. Jüttner1,b,d 1 Otto-von-Guericke-University Magdeburg, Institute for Material, Technologies and Mechanics, Universitätsplatz 2, 39106 Magdeburg, Germany * Corresponding author : tim.reinboth@ovgu.de,	2453 M upload
12:20	12:40	Interfacial characterization and quantitative evaluation in micro-resistance spot welds of braided conductors to interconnectors Qiang SONG*1,a, Yujun XIA1,b, Yongbing LI1,c 1 Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures, State Key Laboratory of Mechanical System and Vibration, Shanghai Jiao Tong University, Shanghai 200240, China *Corresponding author: swxg-q@sjtu.edu.cn	2447
12:40	13:50	**Lunch Break**	
13:50	14:10	Solid-phase resistance spot joining(Cold Spot Joining) method of high tensile strength steel and aluminum alloy Takaaki Miyauchi *1,2, Yoshiaki Morisada1, Kousaku Ushioda1, Yukihiro Morita 2, Yasuhito Tanaka 2, Shinichi Hasegawa 2, Hidetoshi Fujii 1 1Joining and Welding Research Institute, the University of Osaka 2 DAIHEN Corporation * corresponding author : miyauchi@daihen.co.jp	2457
14:10	14:30	Hydrogen embrittlement of cold spot joints: Effect of carbon content Tomohiro Tanio *, Takayuki Yamashita, Abhishek Sharma, Yoshiaki Morisada, Kohsaku Ushioda, Hidetoshi Fujii Joining and Welding Research Institute, The University of Osaka, Osaka, Japan * corresponding author : u250724i@ecs.osaka-u.ac.jp	2458
14:30	14:50	Influence of Cooling Conditions after Hot Rolling on Surface Oxidation, Subsequent Zinc-layer Formation and its Effect on Resistance Spot Welding L. Arbinger*1,2, R. Sierlinger2, W. Ernst 2, J. Strutzenberger 2, N. Enzinger 1 1 Graz University of Technology, IMAT Institute of Materials Science, Joining and Forming, Kopernikusgasse 24/I, 8010 Graz - Austria 2 Research & Development and Innovation, voestalpine Steel division, voestalpine-Straße 3, 4020 Linz - Austria * Corresponding author : l.arbinger@voestalpine.com	2465 M upload
Symposium on Solid-State Bonding/Joining(Sub-Commission III-A) Chair: Dr. Murali Tumuluru (USA), Prof. Elliot Biro(Canada)			
14:50	15:10	Defect-Free Ti/Steel Joining Enabled by Cooperative Deformation. Yao Zhang*, Huihong Liu, Yongbing Li Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures, Shanghai Jiao Tong University, Shanghai, 200240, PR China * Corresponding author: yaozhang@sjtu.edu.cn	2418

15:10	15:30	Effect of Metal Salt Coating Treatment Using Acetic Acid on Joint Strength of Al Alloy A5052 Maya Yotsutani1, Haruto Takise1,Mitsuo Okuwaki2,Takuya Nagahama 2,Ryunosuke Kitamori2, Masaru Kobori2 ,Shinji Koyama*1 1 Gunma University, 1-5-1 Tenjin-cho, Kiryu, Gunma 376-8515, Japan 2 Metal Technology Co. Ltd, Harmony Tower 27F, 1-32-2 Honcho, Nakano-Ku, Tokyo, 164-8721, JAPAN *corresponding author: koyama@gunma-u.ac.jp	2405 M upload
15:30	15:50	Joining Metal At Below Melting Using Induction, Forge and Shear Paul Cheng* FuseRing Inc., Canada *corresponding author L info@FuseRing.com	2424
15:50	16:10	coffee break	
16:10	16:30	A phase-transformation-induced rapid diffusion strategy for ultra-fast deformation-free joining of titanium Jiaxun Li*, Huihong Liu, Yongbing Li Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, 200240, P.R. China *corresponding author : jxli11235@gmail.com	2421
16:30	16:50	Robust interfacial bonding achieved via phase separation induced by enhanced Al diffusion during AZ31/high-entropy alloy friction stir welding Gaohui Li* 1,a , Yachang Bai2,b , Ke Chen2,b 1 Xi'an Jiao Tong University, 2 Shanghai Jiao Tong University, China * corresponding author : gaohui.li@xjtu.edu.cn	2462
16:50	17:10	Downscaling of Aluminum–Copper Joints in Magnetic Pulse Welding J.Jüngst*1,a, d, S. Böhm1,b1 University of Kassel-Department of Machining and Joining, Germany Corresponding author: j.juengst@uni-kassel.de	2423 M
Adjournment – continues on 16th July 2026			

Thursday, 16th July 2026 <Day 4>

Time Slots (Central European Summer Time (CEST))		Title, Authors and Delegation	IIW Document Number III-xxxx-26
8:00	8:20	Registration and Check in	M denotes full paper
Symposium on Friction Stir Welding(Sub-Commission III-B) Chair: Dr. Jorge F. Dos Santos(Germany), Prof. Pedro Vilaça (Finland)			
8:20	8:40	Robust metallurgical bonding via nano-thick layer of interfacial solid solution in Mg/Steel dissimilar welding Ke Chen *1,2, Xuebin Zhuo 1,2, Haining Yao 1,2, Gaohui Li 1, 2, Katsuyoshi Kondoh 3, Min Wang 1,2, Xueming Hua 1,2 1 Shanghai Key Laboratory of Materials Laser Processing and Modification, Shanghai Jiao Tong University, No. 800, Dong Chuan Road, Shanghai, 200240, P.R. China 2 School of Materials Science and Engineering, Shanghai Jiao Tong University, No. 800, Dong Chuan Road, Shanghai, 200240, P.R. China 3 Joining and Welding Research Institute, The University of Osaka, 1-1 Yamadaoka, Suita, Osaka, 567-0047, Japan *corresponding author: chenke83@sjtu.edu.cn	2403
8:40	9:00	Wire-based friction stir welding for large-gap width tolerances Xiangchen Meng *1,a, Wenjiang Dong1 1 State Key Laboratory of Precision Welding & Joining of Materials and Structures, Harbin Institute of Technology, Harbin 150001, China * Corresponding author: mengxch@hit.edu.cn	2438
9:00	9:20	Friction Stir Welding of Rolled Homogeneous Martensitic Steel Jhoan Guzman1, Charles Kravitz1, Kaue C. Riffel*1, Martin McDonnell2, and Antonio J. Ramirez1 1 The Ohio State University, Welding Engineering Program, Columbus, Ohio, USA 2 DEVCOM Ground Vehicle Systems Center, Detroit, Illinois, USA * Corresponding author : riffel.12@osu.edu	2445

9:20	9:40	Investigation of Tool–Workpiece Interaction in Refill Friction Stir Spot Welding of AA7050 Through Experimental Analysis and SPH Modeling Ahmed Elbossily*1, Camila Caroline de Castro 2, Benjamin Klusemann 1,2 1 Institute for Production Technology and Systems, Leuphana Universität Lüneburg, Universitätsallee 1, 21335, Lüneburg, Germany 2 Institute of Material and Process Design, Helmholtz-Zentrum Hereon, Max-Planck-Straße1, 21502 Geesthacht, Germany * Corresponding author: ahmed.elbossily@leuphana.de	2471
Symposium on Capacitor Discharge Welding(Sub-Commission III-A) Chair: Dr. Murali Tumuluru (USA), Prof. Elliot Biro(Canada)			
9:40	10:00	Production of projection welded joints in metal foils by capacitor discharge welding F.Hielscher*1,a,e, J. Zschetzsche1,b, J. Koal1,c,f, H. C. Schmale1,d,g 1 Dresden University of Technology, Chair of Joining Technology and Assembly * Corresponding author: franz.hielscher@tu-dresden.de	2432 M upload
Administrative Session of Commission III Chair: Prof. Hee Seok Chang (Republic of Korea)			
10:00	10:20	Report on WITW(Welding in the World) by Prof. Nobert Enainger, Editor in Chief Prof. Dr. Norbert Enzinger, Institute of Materials Science, Joining and Forming, Graz University of Technology, Austria Email: Norbert.Enzinger@tugraz.at	
10:20	10:40	coffee break	
10:40	11:00	Administrative Issues of IIW (International Institute of Welding), Renewal of C-III Chairmanship Dr. Elisabetta Sciaccaluga, Technical Manager E-mail: elisabetta.sciaccaluga@iiwelding.net Direct phone: +39 0108341 515, Mobile: +39 3357300473 Headquarters and Office: Lungobisagno Istria 15A – 16141 Genova, Italy	
11:00	11:20	Meeting of Working Group, C-III-A-WG-A1 (Destructive Test for Cylindrical EV Battery) Chair: Prof. Hee Seok Chang	
11:20	11:50	Meeting of Working Group, C-III-B-WG-B6 (ISO 25116 on FSW of Steel) Chair : Dr. Jonathan Martin, CEng, FWeldI Jonathan.Martin@twi.co.uk Friction Stir Welding Technical Manager, TWI, UK **Acting Chair: Andrew Davis** **IIW Standards Officer** e-mail: andrew@iiwelding.net Direct phone: +1 305 443 9353 X466 Mobile: +1 3057851049 Office: AWS 8669 NW 36 ST, #130, Doral – FL, USA	
11:50	12:10	List of Resolutions and Closure Commission III Chair: Prof. Hee Seok Chang	
Adjournment			