C-XVII: Brazing, Soldering and Diffusion Bonding

79th Annual Assembly 2026,
Salzburg, Austria,
12th-17th July

XVII-0080-26

Authors: Huaping Xiong

Comments: Face-to-Face Meeting

Agenda for 79th IIW Annual Assembly and International Conference

Program Summary

Time	Meetings	Venue
July 13 (Monday) 10:00am-12:40pm	C-XVII Workshop	Mozart 1
July 14 (Tuesday) 8:30am-12:25pm	C-XVII & C-VII Joint Meeting	Paracelsus
July 14 (Tuesday) 14:00pm-17:50pm		
July 15 (Wednesday) 8:30am-12:00pm	C-XVII Workshop	Mozart 1

Remarks:

The presentation time of 20 minutes includes 15-min presentation and 5-min discussion.

Monday July 13th, 8:30-12:40
Room: Mozart 1

Session I-1 (Medium-and-high-entropy Alloy Filler Metal), Chair: **Huaping Xiong, Lukas Wojarski**

Time	Agenda Item/Presentation Title	Presenter	Document
10:00-10:05	Introduction to each other	Huaping Xiong	
10:05-10:15	Welcome speech and introduction to IIW & Commission XVII	Huaping Xiong	
10:15-10:35	**(Invited)** Diffusion brazing using powder mixtures of the CoCrFeNi MEA and low-melting additives	Lukas Wojarski. TU Dortmund University, Germany	XVIIA-0377-26
10:35-10:55	**(Invited)** Interfacial characterization and joining behavior of Ni-based single crystal superalloys	Xinyu Ren, Huaping Xiong. Beijing Institute of Aeronautical Materials, China	XVIIA-0378-26
10:55-11:15	Brazing properties of novel Fe-based amorphous brazing foils for joining steel	Kirsten Bobzin. RWTH Aachen University, Germany	XVIIA-0379-26
11:15-11:35	Controlling of interfacial reactions and microstructure/property in dissimilar material welding with high-entropy alloy interlayers	Junmiao Shi. Harbin Institute of Technology, China	XVIIA-0380-26

Session I-2 (Diffusion Bonding), Chair: **Warren Miglitti, Peng He**

Time	Agenda Item/Presentation Title	Presenter	Document
11:35-11:55	**(Invited)** A novel synergistic strategy for achieving brittle-phase-free joints of 5A06 Al alloy with excellent-strength and low deformation rate	Ce Wang, Peng He. Zhengzhou Advanced Research Institute of Harbin Institute of Technology, China	XVIIB-0094-26

11:55-12:15	Effect of diffusion bonding parameters on dissimilar (AISI 304 / St 52) to Al 7075-T6 using Gleeble 3800	A. M. Sehsah. Central Metallurgical R&D Institute (CMRDI), Egypt	XVIIB-0095-26
12:15-12:35	A new strategy for preparing high strength diffusion-bonded Ni-based superalloy joints at ultra-low temperature via surface nanocrystallization and spark plasma sintering	Tong Wu, Peng He. Harbin Institute of Technology, China	XVIIB-0096-26
12:35-12:40	Session Discussion	All	
12:40-13:50	Lunch Break		

Tuesday July 14th, 8:30-12:25, Room: Paracelsus

Joint meeting of C-VII Microjoining and Nanojoining and C-XVII on Brazing, Soldering and Diffusion Bonding

Session II-1 (Brazing Filler and Micro-Nano Joining), Chair: **Huaping Xiong, Jolanta Janczak-Rusch**

Time	Agenda Item/Presentation Title	Presenter	Document
8:30-8:35	Opening of Joint C-VII and C-XVII Meeting Welcome and Introduction to the Commissions	Jolanta Janczak-Rusch and Huaping Xiong	
8:35-8:55	*WITW* Introduction	Prof. Majid Farajian (Editor-in-Chief)	
8:55-9:15	Quantitative linking of microstructural parameters to fatigue strength in vacuum-brazed AISI 304L joints using Ni-based filler metals	Johannes L. Otto. TU Dortmund University, Germany	XVIIA-0381-26 VII-0312-26
9:15-9:35	Strengthening effects of different elements on superalloy brazed joints in CoNiCr-based fillers	Xinyu Ren, Bo Chen, Huaping Xiong. Beijing Institute of Aeronautical Materials, China	XVIIA-0382-26 VII-0313-26
9:35-9:55	Experimental study on low-temperature sintering of Al 6012 and 2017 with copper nanopaste	Denise Eusewig, Susann Hausner, Guntram Wagner. TU Chemnitz, Germany	VII-0314-26 XVIIB-0097-26
9:55-10:15	Current-assisted healing of sintered silver joints via microstructural control	Tomoki Matsuda, Takugo Naganuma, Tetsuhiro Matsuda. The University of Osaka, Japan	VII-0315-26 XVIIB-0098-26
10:15-10:45	Coffee Break		

Session II-2 (Diffusion Bonding and Micro-Joining), Chair: **Tomokazu Sano, Lukas Wojarski**

Time	Agenda Item/Presentation Title	Presenter	Document
10:45-11:05	A new era: Diffusion bonding of complex structural components using hot isostatic pressing (HIP) without encapsulation	Amir Shirzadi. The Open University, Cambridge Joining Technology, UK	XVIIB-0099-26 VII-0316-26

11:05-11:25	A direct diffusion bonding strategy for fabricating micro-deformation SiCp/Al composite joints via pulsed current	Jingze Cui, Ce Wang. Harbin Institute of Technology, China	XVIIB-0100-26 VII-0317-26
11:25-11:45	Charge density and electronic structure analysis of the β-Si_3N_4/TiN solid-state bonding interface	Hiroaki Tatsumi, Shunya Nitta, Atsushi M. Ito. The University of Osaka, Japan	VII-0318-26 XVIIB-0101-26
11:45-12:05	Study on the fracture behavior of Ti-6Al-4V diffusion bonded joint with typical interfacial voids	Zhaoxi Li. Northwestern Polytechnical University, China	XVIIB-0102-26 VII-0319-26
12:05-12:25	Design, implementation, and testing of a wire feeding system for laser beam micro welding of medical products with wire-shaped filler materials in the diameter range from 0.1 to 0.5 mm	Holger Letsch, Pascal Schnabel, Maik Berger. TU Chemnitz, Germany	VII-0320-26 XVIIA-0383-26
12:40-13:50	Lunch Break		

Tuesday July 14th, 14:00-17:50, Room: Paracelsus

Joint meeting of C-XVII on Brazing, Soldering and Diffusion Bonding and C-VII Microjoining and Nanojoining

Session III-1 (Ceramic Micro-Nano Joining), Chair: **Warren Miglitti, Susann Hausner**

Time	Agenda Item/Presentation Title	Presenter	Document
14:00-14:20	Coating regulates interfacial and mechanical properties of Si-Y brazed SiC	Fugang Lu, Tiesong Lin, Peng He. Zhengzhou Advanced Research Institute, Harbin Institute of Technology, China	XVIIA-0384-26 VII-0321-26
14:20-14:40	Cold spray metallization using Al- and Ti-based interlayers for laser joining of alumina to metals	Gurdial Blugan, Heloisa Ramlow, Karol Kuglarz. Empa, Switzerland	VII-0322-26 XVIIA-0385-26
14:40-15:00	Microstructure regulating and strengthening mechanism of Y_2O_3-MgO nanocomposite ceramic and Ti6Al4V brazed joint	Bo Zhang. Harbin Institute of Technology, China	XVIIA-0386-26 VII-0323-26
15:00-15:20	Investigation of the influence of Cr and TiC coatings during laser welding of 1.4404 bipolar plates using process emission	Zhiheng Ye. Fraunhofer Institute for Laser Technology ILT, Aachen, Germany	VII-0324-26 XVIIA-0387-26
15:20-15:40	Advanced ceramic joining using glass and metallic glass for semiconductor manufacturing applications	Karol Kuglarz. Empa, EPFL, Switzerland	XVIIA-0388-26 VII-0325-26
15:45-16:15	Coffee Break		

Session III-2 (Dissimilar Joining and Soldering), Chair: **Lei Liu, Lukas Wojarski**

Time	Agenda Item/Presentation Title	Presenter	Document
16:15-16:35	Brazing of Al-Cu dissimilar joints using novel low-melting AlGeSi- and AlAgCuSi-based brazing metals	Benjamin Sattler, Susann Hausner, Guntram Wagner. TU Chemnitz, Germany	VII-0326-26 XVIIA-0389-26

16:35-16:55	Knowledge-informed learning for intermetallic compound thickness prediction and optimization in reflow soldering	Taohan Wang, Hanwen Feng, Wan Tai. Harbin Institute of Technology, China	VII-0327-26 XVIIC-0079-26
16:55-17:15	Microstructural analysis of vacuum brazed NiTi-AISI304-joints using Cu and Nb as filler material	Alexa Nebel. TU Dortmund University, Germany	XVIIA-0390-26 VII-0328-26
17:15-17:35	Harnessing interpretable machine learning and iterative optimization for the breakthrough design of ultra-ductile and high-strength SAC-based solder alloys	Ruyu Tian. Harbin Institute of Technology, China	XVIIC-0080-26 VII-0329-26
17:35-17:50	Miscellaneous: Future joint meeting in IIW AA, International Conferences, Intermediate meeting, etc. Discussions and Closing Remarks: Submission of documents, Paper recommendations to WITW, etc.	Jolanta Janczak-Rusch and Huaping Xiong	

Wednesday July 15th, 8:30-12:00
Room: Mozart 1

Session IV-1 (Heat Exchanger and Other Structures Joining), Chair: **Lukas Wojarski, Peng He, Nick Ludford**

Time	Agenda Item/Presentation Title	Presenter	Document
8:30-8:50	**(Invited)** Diffusion bonding of printed circuit heat exchangers (PCHE) and prospects of AI-assisted improvements	Amir Shirzadi, Lestyn Jowers. The Open University, UK	XVIIB-0103-26
8:50-9:10	Constructing diffusion bonding windows and optimizing diffusion bonding parameters to fabricate printed circuit heat exchangers (PCHE) using Inconel 625 alloy	V. Balaguru. Annamalai University, India	XVIIB-0104-26
9:10-9:30	Microstructural and corrosion characterisation of Al-Si brazed joints in aluminium microchannel heat exchangers	Federico Milan. University of Udine, Italy	XVIIA-0391-26
9:30-9:50	Potential of eddy current testing for the non-destructive characterization of vacuum-brazed hard metal/steel joints	Hanigah Kanagarajah. TU Dortmund University, Germany	XVIIA-0392-26
9:50-10:10	**(Invited)** Enhancing mechanical properties in Mo-Re alloy/AlN ceramic brazed joints via in-situ formation of reinforcing Mo-Ni-Si ternary phase	Panpan Lin. Harbin Institute of Technology, China	XVIIA-0393-26
10:15-10:45	Coffee Break		

Session IV-2 (Application of Brazing Filler and Brazing Flux), Chair: **Warren Miglitti, Erika Hodúlová**

Time	Agenda Item/Presentation Title	Presenter	Document
10:45-11:05	Election of New Chair of C-XVII	Luca Costa (CEO of IIW), and Ellisabetta Sciaccaluga (IIW Secretariat)	

11:05-11:25	Optimizing flux production through micro-wave radiation: energy efficiency and mois-ture control in crystalline and non-crystalline forms	Demirhan Ersoy. Sentes Bir A.S., Turkey	XVIIA-0394-26
11:25-11:45	Comparative analysis of alternative cladding techniques for brazing filler application	Ilia Bobrov. Günter-Köhler-Institute for Joining Technology and Materials Testing GmbH (ifw Jena), Germany	XVIIA-0395-26
11:45-11:55	Discussions and Closing Remarks Next intermediate meeting of C-XVII, Infor-mation of several international conferences, Submission of documents, Paper recommen-dations to WITW, etc	Huaping Xiong and Lukas Wojarski	
11:55-12:00	Farewell to C-XVII	Huaping Xiong	

Chair: Huaping Xiong, xionghuaping69@sina.cn

Vice-Chair: Lukas Wojarski, lukas.wojarski@tu-dortmund.de

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