



INTERNATIONAL INSTITUTE OF WELDING

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Chair: Prof. Huaping Xiong
Delegation: China

Doc.XVII-0064-21

June 29, 2021

Commission XVII: Brazing, Diffusion Bonding and Soldering

Agenda for the 74th Annual Assembly

7-21 July, 2021

Program Summary

Time/Date	Online Meetings
13:00-16:00 CEST/ 13th July (Tuesday)	Commission XVII Meeting
13:00-16:00 CEST/ 15th July (Thursday)	Commission XVII Meeting
13:00-16:00 CEST/ 16th July (Friday)	Commission VII & Commission XVII Joint Meeting
13:00-16:00 CEST/ 17th July (Saturday)	Commission XVII Meeting

Remarks:

The presentation time of 20 minutes includes 15-min presentation and 5-min discussion, while that of 15 minutes includes 10-min presentation and 5-min discussion.

Tuesday July 13, 13:00-16:00 CEST

1. Opening Ceremony (0h00'-0h05') (Chaired by Huaping Xiong)

2. Presentation from CEO of IIW, Luca Costa "IIW Secretariat Report" (0h05'-0h15')

3. Speech by TMB Chair of IIW, Egerland Stephan (0h15'-0h20')

4. Technical Presentations

Chaired by Huaping Xiong

XVIIA-0201-21	Influence of brazing process and gap size on the fatigue strength of shear and peel specimens	Andre Jöckel (LBF Darmstadt, Germany)	0h20'-0h40'
XVIIA-0207-21	Joining of ZrO ₂ ceramic through Al based interface design	Junlei Qi (Harbin Institute of Technology, China)	0h40'-1h00'
XVIIA-0219-21	Joining Al ₂ O ₃ with Cu/Sn/Ti active braze alloy	Linlin Yuan (Beijing Non-ferrous Metal and Rare Earth Research Institute, China)	1h00'-1h20'
XVIIA-0211-21	An insight into the single crystal Al ₂ O ₃ /Kovar alloy dissimilar joint	Shuye Zhang (Harbin Institute of Technology, China)	1h20'-1h40'
Break (1h40'-1h50')			

Chaired by Simon Jahn

XVIIA-0210-21	An insight into the SiC _i /SiC composite /Ni-based superalloy dissimilar joint	Jia Yang (Harbin Institute of Technology, China)	1h50'-2h10'
XVIIA-0202-21	Electron beam brazing of AISI 304 and Copper dissimilar materials	Hodúlová Erika (Slovakia University of Technology, Slovakia)	2h10'-2h30'
XVIIA-0206-21	Brazing of a copper/gold mount for laboratory applications	Sabrina Puidokas (Listemann AG, Switzerland)	2h30'-2h50'
XVIIA-0214-21	Brazing of TiAl and Ni-based superalloy with a high entropy filler metal	Haishui Ren (Beijing Institute of Aeronautical Materials, China)	2h50'-3h10'

5. Comment on Thursday Session (3h10'-3h15')



Thursday July 15, 13:00-16:00 CEST

1. Introduction to Second Day Agenda (0h00'-0h05') (Chaired by Huaping Xiong)

2. WitW Presentation, Prof. John C. Lippold and Prof. Americo Scotti (0h05'-0h15')

3. Technical Presentations

Chaired by Huaping Xiong

XVIIA-0203-21	Integration of steel heat treatment in the manufacture of vacuum brazed cemented carbide-steel joints	Lukas Wojarski(TU Dortmund University, Germany)	0h15'-0h35'
XVIIIB-0056-21	Pressure-assisted direct joining of Ti ₃ AlC ₂ ceramics in air	Bo Yang (Harbin Institute of Technology, China)	0h35'-0h55'
XVIIA-0217-21	Regulatory mechanism and application of alloy powders on flux-cored silver filler metal	Guanxing Zhang (Zhengzhou Research Institute of Mechanical Engineering Co., Ltd, China)	0h55'-1h15'
XVIIA-0212-21	Exploring the role of Mn-Co spinel coating on Crofer 22 APU in adjusting reactions with the Ag based sealant during reactive air brazing	Xiaoqing Si (Harbin Institute of Technology, China)	1h15'-1h35'
Break (1h35'-1h45')			

Chaired by Simon Jahn

XVIIIB-0055-21	Diffusion bonding of Ti6Al4V to Al ₂ O ₃ using different interlayer materials	S. Ramos (University of Coimbra, Portugal)	1h45'-2h05'
XVIIA-0216-21	Brazing technique for honeycomb structure of Ti6Al4V alloy	Yongjuan Jing (Beijing Institute of Aeronautical Materials, China)	2h05'-2h25'
XVIIA-0218-21	Research on brazing and heat treatment strengthening technology of high strength aluminum alloy honeycomb plate	Yuanxun Shen (Zhengzhou Research Institute of Mechanical Engineering Co., Ltd, China)	2h25'-2h45'
XVIIA-0222-21	Influence of brazing parameters on microstructure and mechanical performance with different brazed structure	Wenpeng Han (Beihang University, China)	2h45'-3h05'

4. Discussions and Closing Remarks (3h05'-3h10')

- Discussion on submission to WitW
 - Discussion on the possibility of intermediate meeting in autumn



Friday July 16, 13:00-16:00 CEST

Joint meeting of C-VII and C-XVII on Brazing, Soldering and Diffusion Bonding with Nanomaterials

1. Opening (0h00'-0h05'), Huaping Xiong (CXVII)

Welcome and Introduction to Commissions VII and XVII

2. Technical presentations (0h05'-2h50')

Chair: Huaping Xiong (C-XVII)

VII-0209-21 XVIIIB-0058-21	Rapid heating combined with low-energy ultrasound for fast and reliable Ag-Sn transient liquid phase bonding	Bastian Rheingans (EMPA, Switzerland)	0h05'-0h20'
VII-0214-21 XVIIA-0213-21	Understanding the residual strain distribution as a function of depth in alumina/ stainless steel brazing joint	Chun Li (Harbin Institute of Technology, China)	0h20'-0h40'
VII-0212-21 XVIIC-0058-21	Low-temperature bonding via cooperative surface activation for heterogeneous integration	Chenxi Wang (Harbin Institute of Technology, China)	0h40'-0h55'
VII-0215-21 XVIIC-0053-21	Fabrication and properties of TLPS joint based on Cu@Sn@Ag core-shell powder for high-temperature applications	Hong Li (Beijing University of Technology, China)	0h55'-1h15'
Break (1h15'-1h25')			

Chair: Guisheng Zou (C-VII)

VII-0213-21 XVIIC-0059-21	Microstructure and strengthening-ductility behavior of Sn1.0Ag0.5Cu composite solders reinforced with modified nano ZrO ₂	Fupeng Huo/ Hiroshi Nishikawa (Osaka University, Japan)	1h25'-1h40'
VII-0216-21 XVIIA-0204-21	Vacuum brazing of iron aluminide-free aluminium-steel-joints	Lukas Wojarski (TU Dortmund University, Germany)	1h40'-2h00'
VII-0211-21 XVIIC-0057-21	Effects of doping trace Ni on interface behaviour of Sn/Ni (Poly-crystal/Single-crystal) joints	Jieshi Chen (Shanghai University of Engineering Science, China)	2h00'-2h15'
VII-0217-21 XVIIA-0205-21	Diffusion of Ti into RB-TiC substrate during brazing	Stephen Liu (Colorado School of Mines, USA)	2h15'-2h35'
VII-021021 XVIIC-0056-21	Laser repatterning of Cu electrodes for device rapid prototyping	Peng Peng (University of Waterloo, Canada)	2h35'-2h50'

3. Discussions and Closing Remarks (2h50'-3h00'), Guisheng Zou (C-VII)

- Submission of documents, recommendation to WitW, etc



Saturday July 17, 13:00-15:50 CEST

1. Introduction to the Agenda on the Fourth Day (0h00'-0h05')

(Chaired by Huaping Xiong)

2. Technical Presentations (Chaired by Huaping Xiong and Hong Li)

XVIIA-0221-21	Comparison of the core-shell and mechanical mixing of the Ni-Cr-P-Cu composite filler metal	Jiafei Tan (Beihang University, China)	0h05'-0h25'
XVIIA-0209-21	Active brazing of C/C composites and single crystal Ni-based superalloy: Interfacial microstructure and formation mechanism	Xiajun Guo (Harbin Institute of Technology, China)	0h25'-0h45'
XVIIC-0054-21	Microstructure and Interfacial evolution of sintered NdFeB permanent magnet/steel joint soldered with Zn-Sn-xBi alloy	Cui Luo (Jilin University, China)	0h45'-1h05'
XVIIB-0057-21	High-quality of diffusion bonding of metals/alloys at ultra-low temperature	Tong Lin (Harbin Institute of Technology, China)	1h05'-1h25'
Break (1h25'-1h35')			
XVIIA-0215-21	Effect of element Zr in Ti-Zr-Ni-Nb system brazing filler alloys on the microstructure and strength of TiAl/TiAl joints	Xinyu Ren (Beijing Institute of Aeronautical Materials, China)	1h35'-1h55'
XVIIA-0220-21	Wetting behavior of 316L stainless steel in vacuum brazing at medium temperature	Xiaomeng Huang (Beijing Non-ferrous Metal and Rare Earth Research Institute, China)	1h55'-2h15'
XVIIA-0208-21	Residual stress relief of the composites-alloy brazing joint modified by the materials of negative thermal expansion	Jin Ba (Harbin Institute of Technology, China)	2h15'-2h35'

3. Discussions and Closing Remarks (2h35'-2h50', Chaired by Huaping Xiong)

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