C-XII Arc Welding Processes and Production Systems

Draft Agenda Annual Assembly 2026

XII-2807-2026

Author: Satoshi YAMANE

Comments: [Comments]

1. Agenda for the meetings

Monday 13 July 2026

Time	Item	Resp.	Action
14:00	1. Introduction	S. YAMANE	
	1.1. Opening of the Meeting	S. YAMANE	Information
	1.1. Attendees and Apologies, Identification of C-XII delegates	S. YAMANE	Information
	1.2. Adoption and Agreement of Agenda	S. YAMANE	**Motion required**
	1.3. Approval of the minutes from the last annual assembly in Genova	S. YAMANE	**Motion required**
	1.4. Brief report of Joint Intermediate Meeting in Linerace, Spain	S. YAMANE	Information
	1.5. Direction and topics of Comm.XII	S. YAMANE	**Motion required**
14:15	2. Presentation of documents	Authors	Information
14:15	2.1. Session I	A. PITTNER	
16.25	2.2. Session II	T. Ungethüm	
18:05	Close of Day 1 Activities		

Tuesday 14 July 2026

Time	Item	Resp.	Action
8:30	3. Opening of Joint Session with C-I, C-IV, C-XII and C-XIC	Authors	Information
8:30	3.1. Session 1	S. YAMANE	Information
	3.2. Session 2	P. HOCHANADEL	Information
	3.3. Session 3	D. KAUTZ	Information
	3.4. Session 4,	I. CHOQET	Information
17:55	Close of Day 2 Activities	I. CHOQET	Information

Wensday 15 July 2026

Time	Item	Resp.	Action
14:00	4. Presentation of documents	Authors	Information
14:00	4.1. Session III	Sven-F. GOECKE	Information

16:10	**4.2. Session VI**	ChuanSong WU	Information
18:10	**Close of Day 3 Activities**		Information

Thursday 15 July 2026

Time	Item	Resp.	Action
8:30	**5. Presentation of documents**	Authors	Information
8:30	**5.1. Session V**	S. YAMANE	Information
11:00	**6. Recommendation of submission to IIW Journal "Welding in the World"**	S. YAMANE	**Motion required**
	7. Structure of Commission XII	S. YAMANE	**Motion required**
	8. Date and place of next meeting	S. YAMANE	**Motion required**
11:20	**Close Out of Commission XII**	S. YAMANE	Information

2. Structure of Commission XII

Chair : Prof. Satoshi YAMANE
Vice-chair: Dr. Andreas PITTNER

Sub commission	Name	Role	First name	Last name
A	Sensors and control	Chair	Zengxi	PAN
B	Arc welding processes	Chair	Tim	Ungethüm
		Vice Chair	Kaue C.	RIFFEL
C	Production systems and applications	Chair	Sven-Frithjof	GOECKE
E	Quality and safety in welding	Chair	Chuan Song	WU

Delegate :

Delegate Name	Country
Stephan EGERLAND	AUSTRIA
Wim VERLINDE	BELGIUM
Patricio MENDEZ	CANADA
Xueming HUA	CHINA
Ivica GARASIC	CROATIA
Jesper SKOVFO	DENMARK
Mika SIREN	FINLAND
Sven-Frithjof GOECKE	GERMANY
Akos MEILINGER	HUNGARY
Deepak ACHARYA	INDIA
Alan AVON	ITALY
Satoru ASAI	JAPAN
Dae-won CHO	REPUBLIC OF KOREA
Arpad KOVES	SLOVENIA
Kristian KRUGER	SOUTH AFRICA
Paul KAH	SWEDEN

Delegate Name	Country
Savas DILIBAL	TURKEY
Marcello CONSONNI	UK
Sergey MAKSIMOV	UKRAINE
Yuming ZHANG	USA

Appendix : Presentation of Documents

Annual Assembly, Saltzburg, Austria

Salzburg CongressAuerspergstraße 6

5020 Salzburg, Austria

C-XII: Arc Welding Processes and Production Systems
July 13 - 16, 2026
Room: Karajan 1, 2, 3

Monday 13 June 2026, 1400 – 1800

CommissionXII Meeting

1415: Session I

Chair: Dr. Andreas PITTNER (Vice chair)

[01] 1415: A Point Cloud-Based Framework for Welding Automation of Shipbuilding Lifting Lugs via Seam Extraction and Path Generation
KwangSik Kim, Edam Kim , JangHyun Lee (Korea)
Doc. XII-2808 -2026

[02] 1435: A Data-Driven Approach for Weld Defect Detection in Gas Metal Arc Welding Using Controlled Defect Provocation and Statistical Analysis of Electrical Signals
Prathamesh Jayant Phadnis, André Hälsig, Tim Bernd Eßbach, Jonas Hensel (Germany)
Doc. XII-2809-2026

[03] 1455: Study on lack of penetration measurement method in laser welded butt joints using laser ultrasonic
Kazufumi Nomura, Takumi Nuno,Keiji Kadota, Seiya Nitta, Tetsuo Era ,Satoru Asai, Toshimitsu Maeda (Japan)
Doc. XII-2810-2026

[04] 1515: Development of in-situ internal defect detection for multi-layer welds using laser ultrasonic robotic system
Seiya Nitta, Keiji Kadota, Kazufumi Nomura, Tetsuo Era , Satoru Asai (Japan)
Doc. XII-2811-2026

[05] 1535: Predicting the 3D temperature fields in gas metal arc welding using a molten pool-guided physics-informed neural networks
Hwani Hwang, Jaeheon Lee, Gyuchan Lee, Young-Hoon Lee, Seung Hwan Lee (Korea)
Doc. XII-2812-2024

1555-1625: Coffee break

1625: Session II:

Chair: Dr. Tim Ungethüm (Chair of Sub-Comm. B)

[06] 1625: Experimental Validation of a Real-Time Method for Measuring t8/5 Cooling Time for Arc Welding and Additive Manufacturing
Dmytro Havrylov, Hana Šebestová, Libor Mrňa, Alessio Bazurro, Matteo Pedemonte, Lyle Moroz , Alessandro Bauce, Fabio Rossi (Canada)
Doc.XII-2813-2026

[07] 1645: Development of a Methodology for Examination and thereafter Minimization of Filler Wire Curvature
Paul Schilling, Franz Wenzel , Matthias Schäfer , Tim Ungethüm ,Hans Christian Schmale (Germany)
Doc. XII-2814-2026

[08] 1705: High-speed video analysis to study arc characteristics and metal transfer in GMAW using a vision transformer with temporal memory
Lucas Taipe, Gabriela Pinheiro, J. Eduardo Alvarez-Rocha , Xingyu Li , Patricio F. Mendez (Canada)
Doc. XII-2853-2026

[09] 1725:Progress in productivity, energy efficiency and sustainability using Tandem-GMAW with advanced process modes
Çağtay Fabry , Prashant Kumar Chaurasia, Andreas Pittner, Michael Rethmeier (Germany)
Doc. XII-2815-2026

[10] 1745: Stabilization of High-Heat-Input Submerged Arc Welding
Hayato Baba, Reo Honda, Futoshi Nishisaka, Tetsuo Era, Hisaya Komen, Manabu Tanaka (Japan)
Doc. XII-2816-2026

Tuesday July 14, 2026, 0830 -1800
Joint Meeting of C-I, C-IV, C-XII, and C-XIX

Morning Session, 0830-1300
Session 1, Chair: Professor Satoshi Yamane

0830: Opening of Joint Meeting of C-I, C-IV, and C-XII – Professor Satoshi Yamane

[J1] 0830: Fundamental energy-material interaction framework for process harmonisation and transferability in fusion based additive manufacturing and welding.
Stewart Williams (UK)
I-1732-2026/IV-1743-2026/XII-2834-2026/XIX-0048-2026

[J2] 0850: Experimental study of different multi-camera configurations for in-situ monitoring of the DED-arc process
Akshay Manoj Shahane, Götz-Friedrich Gottschalk, Sven-Frithjof Goecke (Germany)
I-1733-2026/IV-1744-2026/XII-2835-2026/XIX-0049-2026

[J3] 0910: Influence of Environmental Pressure on Microstructure and Mechanical Properties of Wire-Arc Directed Energy Deposited Al-Cu Alloy
Ji Chen, Hairui Wang , Dongsheng Wu, Hao Su , Shengli Li, Chuansong Wu (China)
I-1734-2026/IV-1745-2026/XII-2836-2026/XIX-0050-2026

[J4] 0930: Overhang Structure Fabrication in Wire Arc Directed Energy Deposition Using Sand-Printed Supports
Chang Young Choi, Hwi Jon Son, Yeong Jae Kim, Young Tae Cho (Korea)
I-1735-2026/IV-1746-2026/XII-2837-2026/XIX-0051-2026

[J5] 0950: Combination of laser-MIG hybrid welding and submerged arc welding processes for medium to thick EH36 plates welding
Chen Shen, Xueming Hua, Yuelong Zhang, Fang Li, Xiaopeng Wei (China)
I-1736-2026/IV-1744-2026/XII-2838-2026/XIX-0052-2026

1010: Presentation by IIW Staff/Elisabetta Sciaccaluga (IIW)

Coffee Break (1015– 1045)

Session 2, Chair: Dr. Patrick Hochanadel

[J6] 1045: Dissimilar copper-stainless steel welding by blue laser in heat pumps manufacturing
António Pereira, Miriam Tavares, Dina Silva, Catarina Bastos, Nélia Silva, Bernardo Mascate (Portugal)
I-1694-2026/IV-1748-2026/XII-2339-2026/XIX-0053-2026

[J7] 1105: Fundamental mechanisms of spatter formation during full penetration laser welding revealed by high-speed synchrotron X-ray imaging
Christian Diegel, Leander ScFcohmidt, Klaus Schricker, Marc Seibold, Hannes Friedmann, Peter Hellwig, Fabian Fröhlich, Falk Nagel, Alexander Rack, Herwig Requardt, Yunhui Chen (Germany)
I-xxxx-2026/IV-1749-2026/XII-2840-2026/XIX-xxxx-2026

[J8] 1125: 6kW High-power and High-brightness Blue Laser using Wavelength Beam Combining Technology
Kazuya Hatakeyama, Norihiro Dejima, Yoshio Okamoto, Yasuo Tanahashi, Yuto Oki, Takuya Tsujimoto, Nao Senga, Yoshihiro Kimura, Ryohei Hirose, Yojiro Ichiraku, Tsutomu Yamada, Kaname Saito, Masaki Omori (Japan)
I-1696-2026/IV-1750-2026/XII-2841-2026/XIX-0055-2026

[J9] 1145: Numerical and experimental investigation of metal vapour dynamics in electron beam welding for in-orbit manufacturing
Federico Faustini, Tiberiu Minea, Adrien Revel, Guillaume Mohara (France)
I-1697-2026/IV-1751-2026/XII-2842-2026/XIX-0056-2026

[J10] 1205: Modeling Temperature Dependence of Laser Absorptivity for Copper in Laser Additive Manufacturing
Susumu Kato, Haruhisa Koguchi, Tetsuji Shimizu, Keisuke Takenaka, Yuji Sato, Masahiro Tsukamoto, (Japan)
I-1698-2026/IV-1752-2026/XII-2843-2026/XIX-0057-2026

Afternoon Session, 1400-1800
Session 3, Chair: Mr. Doug Kautz

1400: Opening of Afternoon Session of C-I, C-IV, and C-XII – Dr. Patrick Hochanadel

[J11] 1405: Development of net-shape wire based additive manufacturing for the International Space Station
Goncalo Pardal, Xin Chen, Stewart Williams, Anthony Lecossais, Batiste Allilaire, Sebastien Girault, Mathieu Chevalier, Advenit Makaya, Caterina Lantaffi, Rob Postema (United Kingdom)
I-1699-2026/IV-1753-2026/XII-2844-2026/XIX-0058-2026
[J12] 1425: Wire Arc Directed Energy Deposition of High-Strength Steels: Initial Results and Future Directions
Ruslan Kim, Kaue C. Riffel, Antonio J. Ramirez (United States)
I-1700-2026/IV-1754-2026/XII-2845-2026/XIX-0059-2026

[J13] 1445: Analysis of Mechanical and Metallurgical Properties of ER110S-G HSLA Steel Parts Manufactured by Wire Arc Additive Manufacturing (WAAM)
Bruno Cota, Matheus Miranda, Valdemar Duarte, Telmo Santos, Tarcísio Brito, Gustavo Carvalho (Brazil)
I-1701-2026/IV-1755-2026/XII-2846-2026/XIX-0060-2026

[J14] 1505: Geometrical and mechanical properties of mild steel DED-Arc plates
Max Mierzwa, Erhan Özel, Mirco Olesch, Rahul Sharma, Nils Rittich, Helen Bartsch, Markus Feldmann (Germany)
I-1702-2026/IV-1756-2026/XII-2847-2026/XIX-xxxx-2026

[J15] 1525: Experimental Investigation and Process Window Development for Bead Geometry Control in SS316L SI DED-Arc Additive Manufacturing
Antti Salminen, Ashish Ganvir, Mohsen Amraei, Shafi Uddin (Finland)
I-1703-2026/IV-1757-2026/XII-2397-2026/XIX-0062-2026

1545:Presentation by *Welding in the World* (Editor in Chief – Prof. Norbert Enzinger – confirmed)

Coffee Break (1600 – 1615)

Session 4, 1615-1800
Chair: Prof. Isabelle Choqet

[J16] 1615: Influence of Ultrasonic Frequency Pulsing on Arc Characteristics, Droplet Transfer, and Melt Flow in GMAW
Yuan Zhao, Zewu Qi, Bojin Qi (China)
I-1737-2026/IV-1758-2026/XII-2848-2026/XIX-0063-2026

[J17] 1635: Influence of the electromagnetic weld pool support on arc stability
F. Akyel, Ö. Üstündag, N. Bakir, C. Brunner-Schwer (Germany)
I-1738-2026/IV-1759-2026/XII-2849-2026/XIX-0064-2026

[J18] 1655: Predicting and Mitigating Distortion in Wire L DED Using Thermomechanical Simulations and Experimental Validation
Dik Baas, Björn Nijhuis, Christiaan Kok, Constantinos Goulas (Germany)
I-1739-2026/IV-1760-2026/XII-2850-2026/XIX-0065-2026

[J19] 1715:Tailoring Microstructure and Mechanical Properties in Deep-Penetration Vacuum Laser Welding of Inconel 718 via High-Frequency Beam Oscillation
Meng Jiang, Lijun Yang, Xi Chen, Yanbin Chen (China)
I-1740-2026/IV-1761-2026/XII-2851-2026/XIX-0066-2026

[J20] 1735: Hot cracking in welding: A multiscale simulation study
Fang Han, Zhihang Zhang, Zhibo Dong (China)
I-1741-2026/IV-1762-2026/XII-2852-2026/XIX-0067-2026

1755: Close Out of First Day Joint Meeting of C-I, C-IV, C-XII, and C-XIX – Dr. Isabelle Choqet

Wednesday 15 July 2026, 1600 – 1800

CommissionXII Meeting

1400: Session III:

Chair: Prof. Sven-F. Goecke (Chairman of Sub-Comm.C)

[11] 1400: Study on highly conductive slag control on weld slag in lap weld joints with thin steel sheets
Kazuma Kumagai, Kazuya Ikai (Japan)
Doc. XII-2817-2026

[12] 1420: Hot Wire–Assisted Submerged Arc Welding for Enhanced Deposition Rate
Judah Henry, Daniel Fleming (USA)
Doc. XII-2818-2026

[13] 1440: AI-Empowered Groove Tracking and Adaptive Control System for Vertical-Up Welding in LNG Tank Construction
Takahito Nakamura, Masaki ARAI, Takuya NAGAI, Keito ISHIZAKI ,Satoshi YAMANE (Japan)
Doc. XII-2819-2026

[14] 1500: Enhancing Stretch-Flangeability of AA5182-H111 via Controlled Microplasma Edge Modification
AYYAPPADAS CHANDRAN PILLAI, AVANISH KUMAR SINGH, MURUGAIYAN AMIRTHALINGAM, UDAY CHAKKINGAL(India)
Doc. XII-2820-2026

[15]1520:Controlling Compressive Residual Stress Redistribution via Arc Weld Reinforcement Beads for Fatigue Life Enhancement at Stress Concentration Regions
Hyeon-Do Jeon, Su-Min Park, Savyasachi Nellikode, Si-Young Park, Dae-Won Kimb, Yeong-Do Park(Korea)
Doc. XII-2821-2026

1540-1610: Coffee break

1610: Session VI:

Chair: Prof. ChuanSong Wu (Chair of Sub-Comm.E)

[16]1610:Effect of Welding Condition on Porosity in Plasma-MIG Hybrid Welds of Al-Mg alloy
Hee-Keun Lee(Korea)
Doc. XII-2822-2026

[17] 1630:Arc Behavior, Droplet Transfer and Weld Formation in Thick-Wire GMA Welding
Robin Grunert, Stefan Brumm ,Sebastian Weis (Germany)
Doc. XII-2823-2026

[18] 1650: Coaxial multi-laser-assisted CMT heat source for high-efficiency welding and additive manufacturing of aluminum alloys
Bolun Dong, Sanbao Lin,Xiaoyu Cai ,Ziqiang Wei,Cheng Li, Quan Li (China)
Doc. XII-2824-2026

[19] 1710: Defect-Free Automated MAG Refilling Using Real-Time Adaptive welding Supported by AI
MAHJOUB EL MOUNTASSIR ,Alexis FERRARI (France)
Doc. XII-2825-2026

[20] 1730:In-Process Weld Quality Assessment in GMAW through Integrated Advanced Sensors
Rafael Nunes, Koen Faes, Vincent Laroy, Negin Javanbakht. Brian Booth , Mathieu Vandecasteele, Jorge Velasco Manrique, Marta Ingelmo Gomez (Belgium)
Doc. XII-2826-2026

[21] 1750: Physics-Informed DeepONet for Real-Time 3D Temperature Field Prediction in Arc Welding Processes
Taehwan Ko, Juyeong Lee ,Seung Hwan Lee (Korea)
Doc. XII-2827-2026

Thursday 16 July 2026, 0830 – 1230

CommissionXII Meeting

0830: Session V:

Chair:Prof. Satoshi Yamane

[22] 0830: Investigating Shielding Gas Effects in Multi-Sensor Robotic GMAW of Ultra-High-Strength Steels
Humza Wali, Tuomas Skriko ,Sakari Penttilä, Hannu Lund , Shahriar Afkhami, Eino-Pekka Kanto (Finland.)
Doc. XII-2828-2026

[23] 0850:Mechanical and Microstructural Characterization of Vibration-Induced GTAW Process for P91 steel/IN617 Alloy Dissimilar Welded Joint
Karan Yadav, Chandan Pandey (India)
Doc. XII-2829-2026

[24] 0910: AI-assisted finite element modelling of the electron beam and TIG welding processes of low-cost titanium alloys
Roman Selin, Serhiy Akhonin,Valeriy Bilous (Ukraine)
Doc. XII-2830-2026

[25] 0930: Traveling Steady Pool Model for Predicting Microstructure Distribution and Deformation Characteristics Across Various Welding Positions
Sang-Hyun Ahn, Inyoung Song, Gwang-Ho Jeong , Dae-Won Cho, Young Whan Park (Korea)
Doc. XII-2831-2026

[26] 0950:A mechanistic map for high strength gas metal arc-brazed lap joints in Zn coated advanced high strength steels
Muhammad Shehryar Khan (University of Calgary), Y.(Norman) Zhou (Canada)
Doc. XII-2832-2026

[27] 1010:Predicting GMAW Weld Bead Geometry in AHSS Lap Joints Using Physics-Informed Neural Networks
HASAN HABIB (Canada)
Doc. XII-2833-2026

Coffee Break (1030– 1100)