



C-XI: Pressure Vessels, Boilers and Pipelines

78th Annual Assembly Genoa 2025

Monday, 23rd– Wednesday, 25th June 2025

Chair: Prof. SuJun Wu

Agenda – 23 June 2025

Time	Agenda Item	Responsibility	Action
09.15	Administrative affairs of C-XI	Prof. Sujun Wu	Information
11.45	Adjournment for the day	Prof. Sujun Wu	Information

Agenda – 24 June 2025

Time	Agenda Item	Responsibility	Action
08.30	Author presentations---morning session	Authors	Information
12.15	Lunch time	Authors	Information
14.00	Author presentations---afternoon session	Authors	Information
18.15	Adjournment for the Day		Information

Agenda – 25 June 2025

Time	Agenda Item	Responsibility	Action
08.30	Author presentations---morning session	Authors	Information
12.15	Lunch time		
14.00	C-XI and ASME IWG Joint Meeting	L. Costa , Su Jun Wu , D. Dinelli Raimander	Information
18.20	Adjournment of the Meeting of Commission XI		Information



Members' List (C-XI Leadership)

First name	Last name	Role	IIW user/E-mail	Country
Sujun	Wu	C-XI Chair	wusj@buaa.edu.cn	China
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Sujun	Wu	SC-XI-H Chair	wusj@buaa.edu.cn	China

Appendix (Schedule of Activities and Presentations)

78th Annual Assembly Genoa 2025

Venue: Centro Congressi Porto Antico

C-XI: Pressure Vessels, Boilers and Pipelines, June 23-25, 2025

Room: Listed by day of meeting

Day 1 (23rd) : Administrative Affairs Monday 23 June 2025

Session1: C-XI Administrative Affairs 09.15-11.45

Chair: Prof. Su Jun Wu

Room: Ex-Novu 3(mod 7 1°) 80 pax banchi

09.15 – 09:45

- Opening of the meeting
- Identification of C-XI delegates
- Request fellow member volunteer to draft the Minutes of the Meeting
- News from the IIW Secretariat (Dr Elisabetta Sciacaluga, IIW Technical Manager)
- Video presentation of 'Welding in the World' status – WitW Editor-in-Chief

09:45 – 10:15

- Summary of the C-XI work and Election of Vice Chair for Sb-commission SC-XI-H. By C-XI Chair Professor Su Jun WU.

10:15 – 10:45 Coffee and Break

10:45 – 11:15

- Introduction to the Intermediate Meeting-1 organised by Subcommittee SC-XI-HT (High Temperature pressure vessels, boilers and pipes): and general overview. By SC-XI-HT Chair Lianying Xu & Vice Chair Prof. Ninshu Ma.
- Introduction to the Intermediate Meeting-2 held at LUT University, Finland. By Professor Masoud Moshtaghi.

11:15 – 11:45

➤ Discussions of C-XI Future Work. Participants: The Chairs and Vice Chairs of C-XI and its Sub-commissions; Members who are interested in the topic.

Close of Day 1 Activities

Day 2 (24th): Author Presentations Tuesday 24 June 2025

Session 2: Pipeline Detection & Evaluation 08.45-12.30

Chair: Prof. SuJun Wu, Prof. Ninshu Ma

Room: Ex-Novo 3(mod 7 1°) 80 pax banchi

[01] Keynote talk 1

08.30-09.00: Closed-form weld residual stress solutions for pressure vessel and piping components – a preview of API 579 RP-1/ASME FFS-1 revisions

Pingsha Dong

The University of Michigan, USA

XI-1189-2025

[02] Keynote talk 2

09.00-09.30: Master E-N curve method for fatigue evaluation of welds in pipe and pressure vessel components: a preview of API 579 RP-1/ASME FFS-1 revisions

Pingsha Dong

The University of Michigan, USA

XI-1190-2025

[03] Invited talk

09.30-09.55: Safety Margins in Fatigue Design for the Components with High Mean Stress and A Structural Fatigue-Damage Evaluation Diagram (SFED)

S. Hao

Guangxi University, China

XI-1199-2025

[04] 09.55-10.15: Neural Network-Based Evaluation Methods for Welded Pipelines with Multiple Corrosive Regions

Zhiwei Zhang*, Songling Li, Huajie Wang

Harbin Institute of Technology at Weihai, China

XI-1187-2025

10.15-10.45: Coffee and break

[05] **Keynote talk 3:**

10.45-11.15: Development of Non-Metallic Composite Flexible Pipelines and the Welding/Joining Technology

Xin Li, Tongshen Zheng, Chen Sun, Chong Cui, SuJun Wu*

State Power Investment Corporation Research Institute Co., Ltd.

XI-1194-2025

[06] **11.15-11.35: Recent Developments in Laser Texturing for Enhancing Metallic Surfaces**

Guan Yingchun

Beihang University, China

XI-1180-2025

[07] **11.35-11.55: Recent developments and innovation in welding and additive manufacturing for pressure vessels**

Wojciech Suder, Graeme Barritte, Supriyo Ganguly, Stewart Williams

Cranfield University, UK

XI-1204-2025

[08] **11.55-12.15: Experimental and numerical study on residual stress and deformation caused by repair welding of girth-welded thin pipes**

Yong Liu, Ze Chen, Ping Wang*, Hongliang Qian

Harbin Institute of Technology at Weihai, China

XI-1186-2025

12.15: Lunch time

Session3: Welding & Serving in Harsh Environment or at High Temperature 14.15-18.00

Chair: Prof. Lianyong Xu, Prof. Chuanbao Jia

Room: Ex-Novu 2 (mod 7 2°) 80 pax banchi

[09] **Keynote talk 1:**

14.00-14.30: Features of the formation of welded joints in an aquatic environment using external electromagnetic influence

S. Maksymov, O. Prilipko

E.O. Paton Electric Welding Institute, Ukraine

XI-1201-2025

[10] **Keynote talk 2:**

14.30-15.00: Intelligent Recognition and Measurement of Saddle Weld Bevels with Laser Vision in Tubular Joint

Lianyong Xu

Tianjin University, China

[11] Invited talk

15.00-15.25: Investigations on Welded Joints of High-Manganese Steels ($Mn \geq 15$ wt-%) for Cryogenic Applications in Pressure Vessel and Shipbuilding

Christoph Reppin*, Kai Treutler, Andreas Gericke, Oliver Brätz, Knuth-Michael Henkel, Volker Wesling

Fraunhofer Institute for Large Structures in Production Technology IGP, Germany

XI-1203-2025

[12] 15.25-15.45: Evaluation of carbon equivalent formulas for underwater wet welding and approach to a dedicated formula

Leandro Vaccari, Thomas Hassel, Hans Jürgen Maier

Leibniz University of Hanover, Germany

XI-1183-2025

15.45-16.15: Coffee and break

[13] 16.15-16.35: Investigation on metal transfer and cavity evolution mechanism in underwater submerged arc welding

Yanfei Han, Chuanbao Jia*, Chuansong Wu

Shandong University, China

XI-1191-2025

[14] 16.35-16.55: Pulsed SMAW for Underwater Wet Welding: Process Performance

Orlando M. Castellanos-Gonzalez, Andrés M. Moreno-Urbe*, Eduardo J. Sanchez-Lobo, Ariel Rodriguez Arias, Régis H. Gonçalves e Silva, Thomas Hassel

Federal University of Minas Gerais, Brazil

XI-1193-2025

[15] 16.55-17.15: A fully coupled 3D model for simulating bubble–arc–droplet interactions in underwater wet FCAW

Shichang Xu, Chuanbao Jia*, Chuansong Wu

Shandong University

XI-1196-2025

[16] 17.15-17.35: Physical simulation of flame straightening thermal cycles on S1100M steel

Marcell Gáspár, Raghawendra P. S. Sisodia, Sahm Alden, László Gyura

XI-1197-2025

[17] **17.35-17.55:** High Temperature Mechanical Behavior of Dissimilar Steel A-TIG Weld Joint

Gaurav Sharma*, Dheerendra Kumar Dwivedi, Pratishtha Sharma

KIET Group of Institutions

XI-1198-2025

[18] **17.55-18.15:** Additively manufactured heterogeneous precipitation-strengthened high-entropy alloys with high strength and ductility

Bo Xiao*, Tao Yang, Lei Zhao, Yongdian Han, Lianyong Xu

Tianjin University

Close of Day 2 Activities

Day 3 (25th) : Presentations and Joint Meeting

Wednesday 25 June 2025, 08.45 – 18.20

Session4: Hydrogen Relevant research 08.45-12.05

Chair: Prof. Wojciech Suder, Prof. Masoud Moshtaghi

Room: Ex-Novo 3(mod 7 1°) 80 pax banchi

[19] **Keynote talk 1:**

**08.30-09.00: Advancing Welding Instruction for Hydrogen Pipelines: A Need Analysis
Validation Approach**

Georgia Kolyva (C.E.O., Welding Greek Institute)

XI-1178-2025

[20] **09.00-09.20:** Compatibility of welded austenitic stainless steel (316L) tube for green hydrogen applications: Burst pressure testing

Sam Shaanika, Thomas Alweendo, Oded Sobol, Thomas Böllinghaus, Oluwagbenga

Johnson, Sathith Ravi

University of Namibia

XI-1202-2025

[21] **09.20-09.40:** Effect of Electrochemical Hydrogen Charging Parameters on Hydrogen Uptake in Welded X70 Pipelines

Donát Horváth, Mahdieh Safyari, Masoud Moshtaghi

LUT University

XI-1181-2025

[22] **09.40-10.00:** Fracture Mechanics Approach in Air and Hydrogen for Welded X65 Steel Pipeline

Mahdieh.safyari

XI-1182-2025

[23] **10.00-10.20: Coating Application Delay to Mitigate Hydrogen Outgassing – A Practical Study**

Nairn Barnes

University of Alberta, Canada

XI-1184-2025

10.20-10.45: Coffee and break

[24] **Keynote talk 2:**

10.45-11.15: Recent Advances in Understanding and Predicting Hydrogen Embrittlement in Hydrogen Pipelines and Storage Systems: Novel HEENT Mechanism as an Umbrella for HELP, HEDE, and HESIV

Masoud Moshtaghi

LUT University, Finland

XI-1179-2025

[25] **11.15-11.35: Effect of Hydrogen on the Fracture Toughness of X65 Pipeline Steel**

Welded Joints in High-pressure Natural Gas/Hydrogen Mixture

Yongdian Han *, Xue Liu, Youfu Xiao, Yun Cheng, Lei Zhao, Lianyong Xu

Tianjin University, China

XI-1192-2025

[26] **11.35-11.55: Fracture Toughness of an API 5L X65 Linepipe and the Girth Welds under High-Pressure Hydrogen Gas Environment**

Shusuke Fujita

NIPPON STEEL Pipeline & Engineering Co.Ltd, Japan

XI-1200-2025

[27] **11.55-12.15: The effect of microstructure on the tensile and fatigue behavior of 300 series stainless steels and their welded joints in the hydrogen environment**

Liu Xingyang

XI-1188-2025

12.15: Lunch time

Session5: C-XI & ASME IWG 14.00-18.20

Chair:

Room: Levante 40 pax banchi

[28] **14.00-14.20:** Introduction and opening

L. Costa (CEO IIW), **Su Jun Wu** (Chair C XI), **D. Dinelli Raimander** (Chair Italy IWG BPV IX - REIMANDI)

[29] **14.20-14.40:** Key topics in ASME BPVC IX

M. Pischke (Chair ASME BPV Section IX – Assistant Executive Director, National Board)

[30] **14.40-15.00:** Overview of Pressure Equipment Manufacturing in Italy

P. Campi (ASME BPV Italy IWG Secretary and representative of AIPE)

[31] **15.00-15.20:** Acceptance of Additively Manufactured components in ASME BPVC

T. Melfi (Chair ASME BPV Section IX SG Qualifications - Lincoln Electric Company)

[32] **15.20-15.40:** Research progress on the mechanical behavior of pipeline steels and welds in hydrogen environment

Su Jun Wu (Chair IIW C XI. Professor, Beihang University, China)

15.40-16.10: Coffee and break

[33] **16.10-16.30:** Presentation from ASME IWG “Hydrogen in ASME codes”

D. Dinelli Raimander (REIMANDI)

[34] **16.30-16.50:** Selected presentation from Commission XI, “Enhancing Welding Instruction for Hydrogen Pipelines”

Georgia Kolyva (C.E.O., Welding Greek Institute)

[35] **16.50-17.10:** Presentation from ASME IWG Section III, “Proposed changes to ASME BPVC Section III NB-2573.2 Repair by Welding for castings: Examples of cast access hole closure by welding with and without insert”

F. Ferrarese (SAFAS) and **D. Dinelli Raimander** (REIMANDI)

[36] **17.10-17.30:** Selected presentation from Commission XI, “Microstructural factors affecting the hydrogen embrittlement sensitivity of line pipe steels”

Wenyue Zheng (Professor, BUST, China)

[37] **17.30-17.50:** Presentation from ASME IWG Section IX / ASME SG Materials, “Parent Numbers Explained”

M. Bernasek (Chair ASME BPV Section IX SG Materials, CEO C-Spec)

17.50-18.20 Questions and Answers

Adjournment of the 2025 C-XI Meeting