Silesian University of Technology

SWANTEC

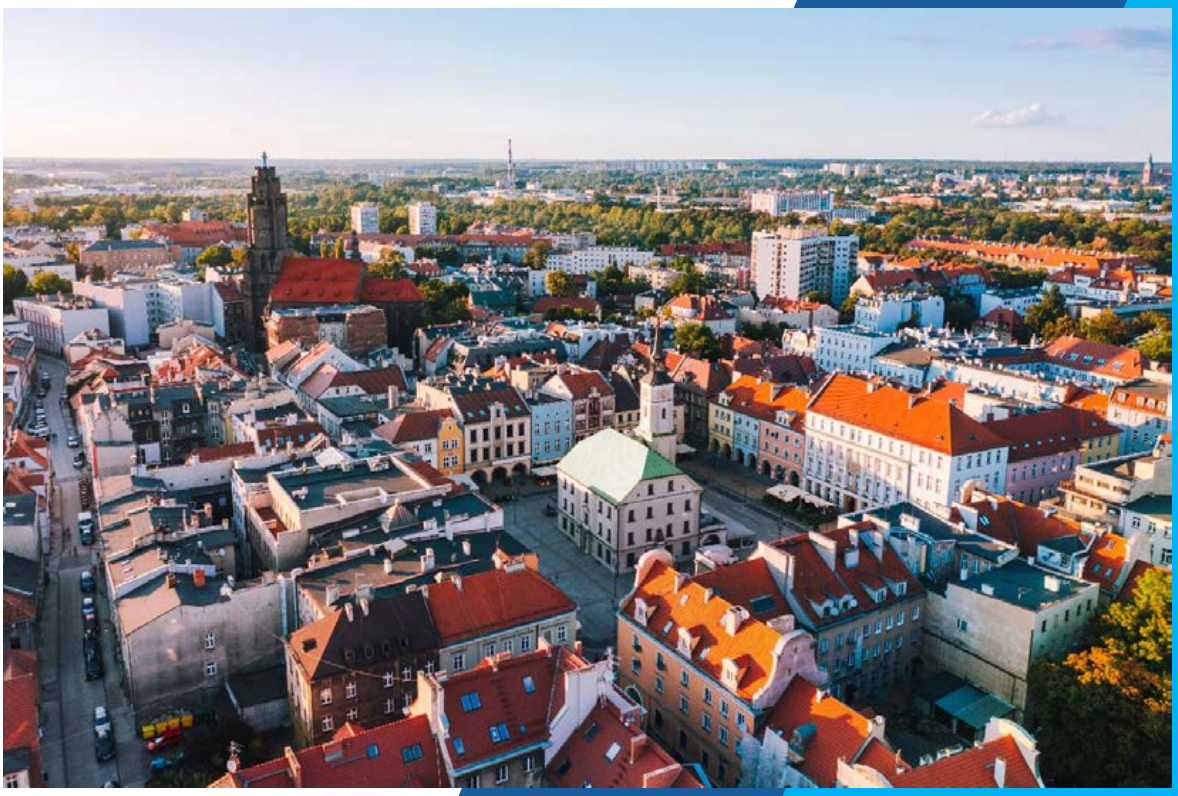
Polish Welding Society

The 12th International Seminar & Conference on

ADVANCES IN RESISTANCE WELDING AND MECHANICAL JOINING

25-27 November 2026 | Gliwice, Poland

https://www.swantec.com/2026-seminar/



12th ARWMJ
25-27 November 2026
Gliwice, Poland

ANNOUNCEMENT

Organizers

- SWANTEC Software and Engineering ApS, Denmark
- Silesian University of Technology - SUT, Poland
- Polish Welding Society (Polskie Towarzystwo Spawalnicze - PTS), Poland

Introduction

Resistance welding and mechanical joining remain among the most productive and cost-effective joining technologies for a wide range of applications in automotive, aerospace, electrical and other industries.

Continuous innovations and inventions in manufacturing industry especially the EV transition in recent years have driven rapid developments in the production and applications of new materials such as advanced high strength steels, aluminum alloys, copper alloys and other new materials. These developments and revolutions have led to great progress in performance, cost-effectiveness and sustainability, but also brought challenges to the welding and joining of new materials and dissimilar materials, which further promote technological advancements in welding and joining with more intelligent welding controls, smarter monitoring technologies and digitalization.

This series of biennial international seminars and conferences has been successfully organized for 11 events since 2000 by SWANTEC and co-organizing partners in Europe, North America and Asia. It has become a leading international platform for industry and welding experts to showcase and share their research, expertise, experiences and outlooks on cutting-edge technological advances in resistance welding and mechanical joining. The 12th conference will be held in Gliwice, Poland on 25-27 November 2026.

Topics

- State of the art and outlook in resistance welding and mechanical joining.
- Challenges in welding and assemblies with new materials, AHSS, aluminums etc.
- Welding and joining of dissimilar materials.
- Welding process and micro resistance welding applications.
- Intelligent welding process control and monitoring and weld quality assessments.
- Digitalization of welding and joining, simulations, optimizations, digital twins and AI.

Language

All presentations will be in English.

Important dates

Workshop:	- **25 November 2026**
Seminar and Conference:	- **26-27 November 2026**

12th ARWMJ
25-27 November 2026
Gliwice, Poland

PROGRAM

Wednesday, 25 November 2026

12:30 – 13:30	**Registration** (Faculty of Electrical Engineering, Building A, SUT, B. Krzywoustego Str. 2, Gliwice)
13:30 – 15:00	**SORPAS® Workshop 1 – Simulations and Optimizations** *Focus: Pre-Production* – Get Weld Designs and Welding Processes Right Before Production
15:00 – 15:30	***Coffee break***
15:30 – 17:00	**SORPAS® Workshop 2 – Optimizations and Production Solutions** *Focus: Production and Post-Production* – Improve Production Stability and Ensure Weld Quality
18:00 – 20:00	***Welcome Reception***

Thursday, 26 November 2026

08:00 – 09:00	**Registration** (The Education and Congress Centre, SUT, ul. Konarskiego 18 B, Gliwice)
09:00 – 09:15	**Welcome:** Prof. Dr. Janusz Adamiec, President of Polish Welding Society
09:15 – 09:50	**Keynote:** Recent Developments and Future Trends in Resistance Welding Technology Prof. Dr. Zygmunt Mikno, Sieć Badawcza Łukasiewicz – GIT Welding Center, Poland
09:50 – 10:30	**Keynote:** Numerical and Experimental Perspectives on Wire Arc Additive Manufacturing and Hybridization with Metal Forming Prof. Dr. Paulo Martins, University of Lisbon, Portugal
10:30 – 11:00	***Coffee break – (Exhibitions and Posters)***
	Session 1: Resistance Welding of AHSS and Dissimilar Materials
11:00 – 11:30	Thermal History Analysis of Spot Welding Process for Concurrent Suppression of LME Cracking and Enhancement of Joint Strength Steel Sheets Shinsuke Komine, Tomomi Kanazawa, Chikaumi Sawanishi, and Koichi Taniguchi, JFE Steel Corporation, Japan
11:30 – 12:00	A Methodological Approach for Predicting the Resistance Spot Weldability of Giga-Grade Advance High Strength Steel Sheets Dr. Duyoul Choi, and Sangho Uhm, POSCO, Korea
12:00 – 12:30	Numerical Prediction of Joint Formation in Two-Stage Resistance Element Welding of Three-Sheet Steel-Aluminium Joints Marcel Heitmann, Paderborn University, Germany
12:30 – 13:30	***Lunch – (Exhibitions and Posters)***
	Session 2: Resistance Welding of Aluminums and Dissimilar Materials
13:30 – 14:00	Estimative of solidification parameters by RSW of AW-7075 based on FEM simulation Pedro Bamberg, RWTH - Aachen University, Germany
14:00 – 14:30	Resistance Spot Welding in Automotive Lightweighting: Joint Performance from High Strength Steels to Aluminium Sheets Dr. Sahm Alden, Á. Meilinger, M. F. Cserépi, M. Gáspár, University of Miskolc, Hungary
14:30 – 15:00	High-Speed Resistance Projection Welding of thin CuNiSiP Alloys Dr. Tobias Broda, Harms & Wende GmbH & Co. KG, Germany
15:00 – 15:30	***Coffee break – (Exhibitions and Posters)***

Session 3: Digitalization, Machine Learning and AI

15:30 – 16:00 AI-enhanced Digital Optimizations and Digtal Twins for Spot Welding Processes
Dr. Wenqi Zhang, SWANTEC Software and Engineering ApS, Denmark

16:00 – 16:30 Deep Learning-Based Splashing Detection of Resistance Spot Welding
Dr. Xiaolei Chen, ArcellorMittal Maizieres Research, France

16:30 – 17:00 Numerical and Experimental Analysis of Projection Welding Process for Training Advanced AI-Based Ultrasonic Quality Control Systems.
Pawel Kustron, Wroclaw University of Science and Technology, Poland

17:00 – 18:00 **Exhibitions and Poster Presentations**

18:30 – 21:30 ***Conference Dinner***

Friday, 27 November 2026

08:00 – 08:30 **Registration** (The Education and Congress Centre, SUT, ul. Konarskiego 18 B, Gliwice)

Session 4: Resistance Welding Process and Micro Resistance Welding

08:30 – 09:00 Power Electronics for Supplying and Controlling the Resistance Welding Process
Prof. Dr. Mariusz Stepien, Silesian University of Technology, Poland

09:00 – 09:30 One Technology, Many Challenges: Advanced Micro Resistance Welding for Medical Applications
Dr. Marcin Alexy, AMADA WELD TECH GmbH, Germany

09:30 – 10:00 Different Scale, Different Rules: The Specifics and Physics of the Micro-Resistance Welding Process
Bartosz Apanasewicz, APWELD / Harms+Wende, Poland

10:00 – 10:30 Latest Developments on Micro Resistance Welding
Neven Micic, Huys Industries Limited, Canada

10:30 – 11:00 ***Coffee break – (Exhibitions and Posters)***

Session 5: New Technologies and Weld Quality Assessments

11:00 – 11:30 Phased Array Ultrasonic Empowering Spot Weld Quality Inspection: A Technical Leap from "Blind Inspection" to "Visualization"
Tong Zhou, Zhou Wang, Wuhan ZHONGKE Innovation Technology Co., Ltd., China

11:30 – 12:00 Analysis of the Effect of Resistance Spot Welding Parameters on the Properties of Joints Made of High Strength Materials
Slawomir Parzych, Wiktoria Zbyrad-Kolodziej, Rafał Dziurka, Zbigniew Mikno, Krakow University of Technology, Poland

12:00 – 12:30 Robust and Calibrated Machine Learning for Weld-Quality Assessment under Variable Measurement Conditions
Przemysław Frankiewicz, AGH University of Krakow, Poland

12:30 – 13.30 ***Lunch and Closing Remarks***

14:00 – 15:30 **Visit to the GIT Welding Center Laboratories**

Saturday, 28 November 2026

Post Conference Social Activity

09:00 – 12:00 **Guido Coal Mine Tour**
Visit the coal mine at the level of 320 meters underground

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EXHIBITORS

1. **AMADA WELD TECH GmbH, Germany**
   Welding Equipment and Systems

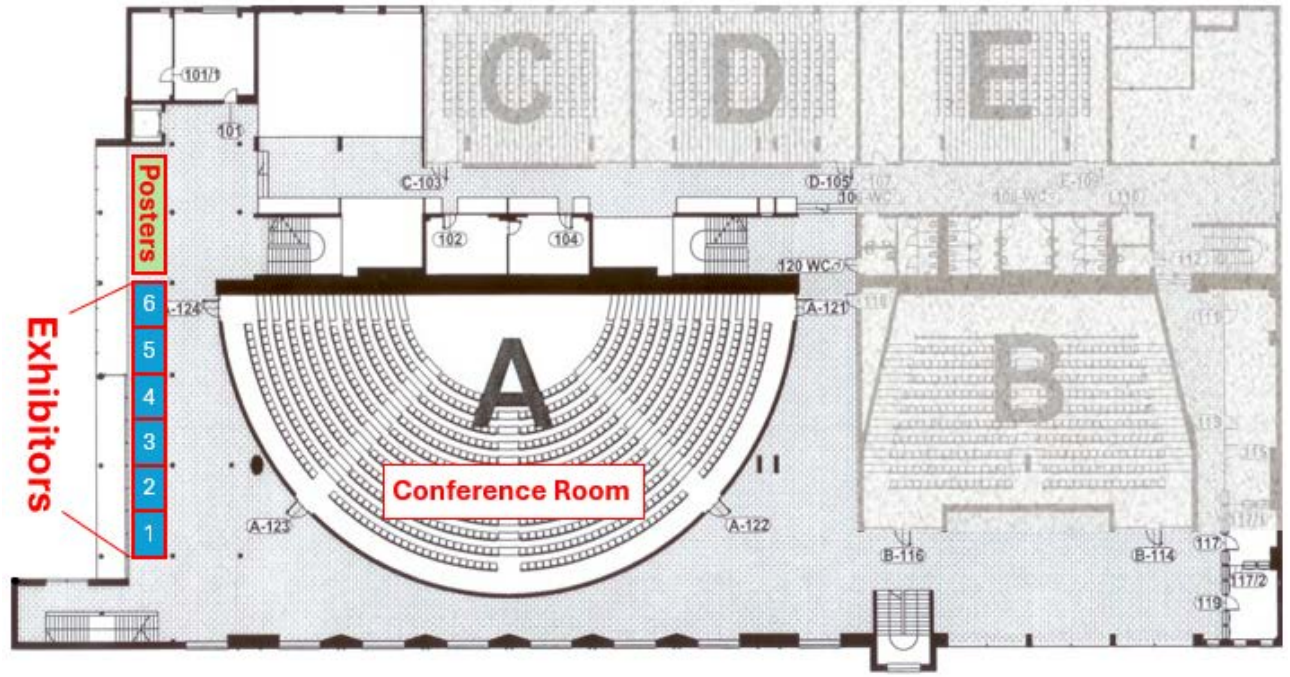
2. **SWANTEC Software and Engineering ApS, Denmark**
   Welding Software for Simulations, Optimizations and Digital Twins

3. **Huys Industries Ltd., Canada**
   Electrodes & Micro Welding Solutions

4. **Wuhan ZHONGKE Innovation Technology Co., Ltd., China**
   Non-destructive Testing Equipment

5. **Tolomatic Europe GmbH, Germany**
   Innovative Automation Components (actuators, servos, sensors)

6. **Silesian University of Technology, Poland**
   Electromagnetic Electrode Clamping System



The Education and Congress Centre of Silesian University of Technology
ul. Konarskiego 18 B, 44-100 Gliwice, Poland

POSTERS

P1: Hybrid spot welding of MPC materials with aluminum outer skins
Tomasz Rzadkosz, Paweł Kustroń and Tomasz Piwowarczyk
Wrocław University of Science and Technology, Poland

P2: Method of Welding Fence Panels, especially from Metal Rods
Zygmunt Mikno, Janusz Pikuła
Łukasiewicz - Upper Silesian Institute of Technology, Poland

P3: Numerical Analysis of Resistance Spot Welding of Galvanized Steel Sheets with Respect to Zinc Coating Thickness
Zygmunt Mikno, Janusz Pikuła
Łukasiewicz - Upper Silesian Institute of Technology, Poland

P4: Digital Twin in Welding Processes: State of the Art and the Future
Wiktor Lacki
Częstochowa University of Technology, Poland

P5: Applying Artificial Intelligence to Laser Hardening Process Optimization
Michał Lacki
Częstochowa University of Technology, Poland

P6: Influence of Pulse Count on the Quality of Resistance Spot-Welded S500MC Steel Joints
Wiktoria Zbyrad-Kołodziej [1], Rafał Dziurka [2], Adam Kokosza [2], Sławomir Parzych [3], Piotr Bała [1,4]
1 Faculty of Mechanics and Technology, Rzeszów University of Technology, Poland
2 Faculty of Metals Engineering and Computer Science, AGH University of Krakow, Poland
3 Faculty of Materials Science and Physics, Cracow University of Technology Tadeusz Kosciuszko
4 Academic Centre for Materials and Nanotechnology, AGH University of Krakow, Poland

P7: From Phase Transformations to Weld Characterisation: An Integrated Approach to the Analysis and Process Optimisation of Resistance-Welded Joints
Rafał Dziurka [1], Wiktoria Zbyrad-Kołodziej [2], Adam Kokosza [1], Sławomir Parzych [3], Piotr Bała [1,4]
1 Faculty of Metals Engineering and Computer Science, AGH University of Krakow, Poland
2 Faculty of Mechanics and Technology, Rzeszów University of Technology, Poland
3 Faculty of Materials Science and Physics, Cracow University of Technology Tadeusz Kosciuszko
4 Academic Centre for Materials and Nanotechnology, AGH University of Krakow, Poland

P8: Electromagnetic control of electrode clamping force in resistance welding with electromechanical control of electrode position
Mateusz Czechowski, Wiktor Czornik, Dominik Mikołajczyk, Jan Zygadlewicz, Natan Siekierka, Grzegorz Jarek, Mariusz Stępień
Silesian University of Technology, Gliwice, Poland

P9: Design and examination of power electronic inverter for low current resistance welding machine
Jan Zygadlewicz, Wiktor Czornik, Mateusz Czechowski, Natan Siekierka, Marcin Zygmanowski, Mariusz Stępień
Silesian University of Technology, Gliwice, Poland

P10: EV-RC PowerBench: A Programmable Electric-Drive Research Platform
Kamil Gruszczyk, Piotr Kałużyński, Jan Baszczok, Jakub Janyga, Juliusz Szweda, Adrian Morgała, Maciej Cycoń, Filip Simon, Maciej Ziajka, Artur Greiner
Silesian University of Technology, Gliwice, Poland

CONFERENCE VENUE



The Education and Congress Centre of Silesian University of Technology

ul. Konarskiego 18 B

44-100 Gliwice, Poland

https://www.polsl.pl/rju2-cek/en/

Contact Organizing Team, Prof. Mariusz Stepien:
+48 32 237-12-47

Accommodation:

Main conference hotel:

- **Hotel Diament Plaza Gliwice** (★★★★)
  Special discount -15% with code "SORPAS".

Other hotels within walking distance:

- Hotel Silvia Gold Gliwice (★★★)
- Qubus Hotel Gliwice (★★★)
- Hotel Royal (★★★)
- Hotel Malinowski Business (★★★)

- Park Hotel Diament Zabrze (★★★★)
  Special discount -15% with code "SORPAS".

There are additional accommodations and other budget apartments in Gliwice.

Transportation

By plane

- Katowice Airport (KTW) ~40 km
- Krakow Airport (KRK) ~100 km
- Warsaw Airport (WAW) ~350 km

By train

Gliwice Train Station (~1.5 km to venue).

By car

Gliwice is located in southern Poland at the crossing of A1 and A4 highways.

Public transport is widely available. Short and long-distance trains and buses are operating daily.

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HISTORY SINCE 2000

- **1st: Oct 2000, Copenhagen, Denmark**
  (SWANTEC, Institute for Joining of Materials)
- **2nd: Nov 2002, Aachen, Germany**
  (SWANTEC, ISF-RWTH Aachen University)
- **3rd: Nov 2004, Berlin, Germany**
  (SWANTEC, BAM Institute)
- **4th: Nov 2006, Wels, Austria**
  (SWANTEC, Fronius)
- **5th: Sept 2008, Toronto, Canada**
  (SWANTEC, HUYS Industries)
- **6th: Sept 2010, Hamburg, Germany**
  (SWANTEC, Harms-Wende)
- **7th: Sept 2012, Busan, Korea**
  (SWANTEC, I S Korea, Dong-Eui University)
- **8th: Sept 2014, Baveno, Italy**
  (SWANTEC, SINTERLEGHE)
- **9th: Apr 2016, Miami, USA**
  (SWANTEC, HUYS Industries, American Welding Society (AWS))
- **10th: Sept 2018, Esslingen, Germany**
  (SWANTEC, University of Esslingen)
- **11th: Oct 2024, Shanghai, China**
  (SWANTEC, Shanghai Jiao Tong University, INFOMASS)











Previous Participants:

- Aachen University (RWTH, Germany)
- ArcelorMittal (France, USA)
- BMW (Germany)
- Danfoss (Denmark)
- Ford (USA)
- Harms-Wende (Germany)
- JFE Steel (Japan)
- Ohio State University (USA)
- Shanghai Jiao Tong University (China)
- SSAB (Sweden)
- The Welding Institute (TWI-UK)
- University of Lisbon (Portugal)
- Volkswagen (Germany)
- Amada (Germany)
- Audi (Germany)
- BOSCH (Germany)
- Dong-Eui University (Korea)
- Fronius (Austria)
- Hyundai (Korea)
- KUKA (Germany)
- Opel (Germany)
- Silesian University of Technology (Poland)
- TATA Steel Europe (NL)
- ThyssenKrupp Steel (Germany)
- University of Waterloo (Canada)
- Volvo (Sweden)
- American Welding Society (AWS-US)
- BaoSteel (China)
- Daimler (Germany)
- FIAT (Italy)
- GM (USA)
- Infomass Information Sci. & Tech. (China)
- Nippon Steel (Japan)
- POSCO (Korea)
- SLV Duisburg (Germany)
- Technical University of Denmark
- Toyota (Japan)
- US Steel (USA)
- Welding Institute (Poland)

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25-27 November 2026
Gliwice, Poland

The 12th International Seminar & Conference on

Advances in Resistance Welding and Mechanical Joining

25-27 November 2026, Gliwice, Poland

REGISTRATION

Participant:

Name: _____ ☐ Ms. ☐ Mr. ☐ Dr. ☐ Prof.

Organization: _____

Address: _____

Postal or Zip: _____ City: _____

Country: _____

Phone: _____

E-mail: _____

Participation:

	Registration before 10th November 2026	Registration after 10th November 2026
☐ **Seminar & Conference** *(26-27 November 2026)*	**€395** (Euro)	**€435** (Euro)

☐ **SORPAS® Workshop** *(Wednesday, 25 November 2026)*: **Free**

☐ **Guido Coal Mine Tour** *(Saturday, 28 November 2026)*: **€50 (Euro)**

All prices are exclusive of any applicable taxes and/or fees.

Payment:

☐ **Bank transfer**
Danske Bank, Erhverv Direkte, Holmens Kanal 2-12, 1092 Copenhagen, Denmark
IBAN: DK6530004260599852. SWIFT: DABADKKK
Notice: Your name in the transfer reference is necessary for identification.

☐ **Send invoice to me** (*VAT number for companies in EU countries:* _____)

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