

**The 6th International Seminar on
Advances in Resistance Welding
22-24 September 2010, Hamburg, Germany**

ANNOUNCEMENT

Organisers:

[SWANTEC Software and Engineering ApS](#), Denmark
[Harms & Wende GmbH & Co KG](#), Germany

Background:

New inventions and innovative developments in recent years have enabled new possibilities for joining challenging materials such as advanced high strength steels, aluminium alloys and magnesium alloys. These advances have drawn greater attention from manufacturers towards new applications of resistance welding techniques. With extensive research and development by material suppliers, welding equipment manufacturers and industrial end users, it is obvious to see that resistance welding remains one of the most efficient and competitive joining technologies in automotive, aerospace, electrical, electronics, white goods and other metal processing industries.

There have been great demands from industry to follow through with the recent advances and to update users with the technology available in the field of resistance welding. In order to meet the demands of industry, a series of international seminars on Advances in Resistance Welding have been initiated by SWANTEC since 2000 and now organised as a biennial event. The 1st seminar was held in October 2000 in Copenhagen, Denmark; the 2nd was held in November 2002 in Aachen, Germany; the 3rd was held in November 2004 in Berlin, Germany; the 4th seminar was held in 2006 in Wels, Austria; while the 5th was held in September 2008 in Toronto, Canada.

All lectures at the seminars were given by well-known experts specially invited from leading institutes and companies in the field of resistance welding with full coverage of all important topics on materials, welding equipment, innovations and the latest industrial applications. The seminars have been well attended, with over 80 participants in 2008 and more than 80% coming from industry.

The 6th seminar will be organized by SWANTEC and Harms-Wende on September 22nd -24th 2010 in Hamburg, Germany. Approximately 20 lectures will be given by invited experts in the field of resistance welding from leading institutes and companies to cover the latest inventions and developments in resistance welding with special emphasis on adaptive welding controls and applications for challenging materials which are difficult to weld *e.g.* aluminium alloys and advanced high strength steels, etc.

Objectives:

- To bring up the latest innovations and developments on industrial applications of resistance welding.
- To provide an opportunity for industrialists and specialists in resistance welding to share their expertise and experiences at an international level.

Topics:

- Challenges to resistance welding for applications of new materials and complex joints.
- Innovations and advances in resistance welding machines/guns and control technologies.
- Applications and optimisations of resistance welding with the support of computer technology.

Proceedings:

Proceedings of all lectures will be written in English and distributed to participants at the seminar. Presentations will be presented in English.

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PROGRAMME

Wednesday, September 22nd, 2010:

09:00 – 12:00 **Registration**

The XPRESS Welding Expert System (www.xpress-project.eu)

09:30 – 12:00 **Presentations and Interactive Exploration of Expert Knowledge in Resistance Welding**
Partners of the European Project XPRESS

12:00 – 13:00 **Lunch**

Workshop on SORPAS[®] and User Group Meeting

13:00 – 13:45 **The Key Functions and Industrial Applications of SORPAS**

Dr. Wenqi Zhang, SWANTEC, Denmark

13:45 – 14:15 **Sensitivity Analysis of SORPAS Simulations on Material and Geometric Model Related Factors**

Kim Pedersen, SWANTEC, Denmark

14:15 – 14:45 **Estimation of SORPAS Results Scatter due to Numerical Parameters**

Dr. Thomas Dupuy, ArcelorMittal, France

14:45 – 15:30 **Open Discussions**

SORPAS users and all participants

Demonstration at Harms-Wende: Adaptive Control Systems

16:00 – 17:00 **Presentation of Latest Developments on Adaptive Control Techniques**
Harms-Wende

18:00 – 20:00 **Reception and Buffet**

Thursday, September 23rd, 2010:

08:15 – 08:30 **Welcome by Mr. Ralf Bothfeld, Managing Director, Harms-Wende**

08:30 – 09:15 **Keynote Speech: The Wonderful World of Resistance Welding**

Prof. Dr. Martin Greitmann, Hochschule Esslingen, Germany

09:15 – 09:45 **State of the Art and Prospects of Advanced High Strength Steels and Resistance Spot Welding in Korea**

Prof. Dr. Yeong-do Park (Dong-Eui University), DuYoul Choi (posco), Dr. Yongjoon Cho (Hyundai Motor Company), Korea

09:45 – 10:00 **Coffee Break**

Session 1: Resistance Welding of Challenging Materials – Advanced High Strength Steels (AHSS)

10:00 – 10:30 **Future Body Structure by Steel and Sophisticated Joining Technologies**

Dr. Kiyoyuki Fukui, Sumitomo Metal Industries, Japan

10:30 – 11:00 **Resistance Spot Welding – Simulation of Welding Triple Layer Sheet Metal**

André Marx, Robert Laurenz, ThyssenKrupp Steel Europe AG, Germany

11:00 – 11:30 **Resistance Spot Welding of Zinc-Coated, Press-Hardened Components with Tailored Properties**

Thomas Manzenreiter, Robert Sierlinger, Voestalpine Stahl GmbH, Austria

11:30 – 12:00 **Resistance Spot Welding of Advanced High Strength Steel of Complex Welding Program**

Dr. Zygmunt Mikno (Institute of Welding), Dr. Zbigniew Bartnik (Wroclaw University of Technology), Szymon Kowieski (Institute of Welding), Poland

12:00 – 13:00 **Lunch**

Session 2: Resistance Welding of Challenging Materials – Aluminium Alloys

- 13:00 – 13:30 **Development of Resistance Spot Welding Aluminium for Light Weight Vehicle Manufacture**
Dr. Li Han, University of Warwick, UK
- 13:30 – 14:00 **Advantages of DeltaSpot when Welding Aluminium Alloys and the Experiences with SORPAS Simulation**
Almedin Bećirović, Fronius International, Austria
- 14:00 – 14:30 **Welding of Aluminium with a New Profile Welding Method**
Jörg Eggers, Stephan Fiebag, Ralf Bothfeld, Harms & Wende GmbH & Co. KG, Germany
- 14:30 – 15:00 **RoboSpin Technology for Spot Welding of Aluminium**
Thomas Eberhardt, Andreas Strobl, KUKA, Germany
- 15:00 – 15:15 **Coffee Break**

Session 3: Adaptive Welding Control and Production Configuration Techniques

- 15:15 – 15:45 **Adaptive Welding Control and Production Configuration Techniques**
Prof. Dr. Norbert Link, Universität Karlsruhe, Germany
- 15:45 – 16:15 **Optimizing the Next Generation Resistance Welding Cell – A Global View**
Nigel Scotchmer, Javier Duran (México), Kevin Chan, Huys Industries Ltd., Canada
- 16:15 – 16:45 **Optimizing Adaptive Resistance Spot Welding Processes**
Staffan Pettersson, SCANIA, Sweden
- 16:45 – 17:15 **Weld Planning with Optimal Welding Parameters by Computer Simulations and Optimizations**
Dr. Wenqi Zhang, SWANTEC, Denmark
- 17:30 – 19:00 Guided Bus Tour of Hamburg City
- 19:00 – 20:00 Guided Tour at the Automobile Museum
- 20:00 – 23:00 Dinner (address of the restaurant will be available at the seminar)

Friday, September 24th, 2010:

Session 4: Welding Equipment and Testing Techniques

- 08:00 – 08:25 **Modular Welding Guns and Their Advantages**
Torben Laumann, NIMAK, Germany
- 08:25 – 08:50 **Influence of Welding Current on RW Machine Follow-up Behaviour, a Practical Test Method**
Dr. Patrick Van Rymenant, Cranfield University, UK
- 08:50 – 09:15 **Magnetic Spot Weld Testing Using Fast High Resolution MagCam Magnetic Field Mapping**
Koen Vervaeke, MagCam NV, Belgium
- 09:15 – 09:40 **Analysis and Modelling Electrode Wear in Resistance Spot Welding**
A. Madsen, K. R. Pedersen, K. S. Friis, N. Bay, Technical University of Denmark, Denmark
- 09:40 – 10:05 **Predicting Electrode Life with FEM Software**
Kevin Chan (Huys Welding Strategies), Nigel Scotchmer (Huys Industries), Canada
- 10:05 – 10:25 **Coffee Break**

Session 5: Welding Processes and Micro Welding Applications

- 10:25 – 10:50 **Practical Resistance Welding - Sometimes Things Go Wrong**
Stefan Schreiber, Steffen Keitel, Rainhard Winkler, Peter Zak, SLV Duisburg, Germany
- 10:50 – 11:15 **The Challenge of Micro Spot Welding**
Beat Fehlmann, RESISTRONIC, Switzerland
- 11:15 – 11:40 **Exposure Assessment Concerning Environmental Magnetic Fields of Resistance Welding Equipment**
Dr. R. Doeberlin, Dr. Th. Winkler, Prof. Dr. A. Lindemann, Otto-von-Guericke Universität Magdeburg, Germany
- 11:40 – 12:05 **Weld Applications in Market and Practice**
Anton Weertman, E.J. Drewes, AWL Techniek, Netherlands
- 12:05 – 12:30 **Friction Spot Welding**
Fritz Luidhardt, Harms & Wende GmbH & Co. KG, Germany
- 12:30 – 14:00 **Closing remarks and Lunch**

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PRACTICAL INFORMATION

Venue for Reception, Workshop, Seminar and User Group Meeting, Sept. 22nd - 24th:



Hotel Waldhaus Reinbek
(<http://www.waldhaus.de>)

Hotel Waldhaus Reinbek
Loddenallee
21465 Reinbek
Phone: +49 40 727 520
e-mail: waldhaus@waldhaus.de

Directions:

By car from Hamburg Airport (about 25km):
Take Ring 2 via Horn, towards Billstedt. In Billstedt you exit on the B5 – towards Bergedorf. After about 4 km turn left at the second crossroad on Reinbeker Redder and drive straight on until you arrive at Reinbek. After about 1 km you will see the sign-board WALDHAUS REINBEK on the right side and turn into the Loddenallee.



then

Arrival by train: Take the commuter railway system S 21 (direction Aumühle) at the central station Hamburg. Leave the train in Reinbek. Thence its 15 minutes walking distance or 3 minutes taxi distance to the Loddenallee.

Hotel Room Reservation:

A number of rooms have been pre-reserved at Hotel Waldhaus Reinbek with special rate at EUR 95 per night for the nights of September 22nd and 23rd (the rate for the night of September 21st is EUR 109 plus EUR 15 breakfast). Please book directly at the hotel by mentioning the code “Harms-Wende”. The special rates are only available until **July 31st, 2010**.

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REGISTRATION

Participant:

Name: _____ Ms. Mr. Dr. Prof.
Organization: _____
Address: _____
Postal or Zip: _____ City: _____
Country: _____
Phone: _____
Fax: _____
E-mail: _____

Participation:

Seminar

**Registration before
September 10th, 2010**

€395

**Registration after
September 10th, 2010**

€425

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

Payment:

- Bank transfer to **SWANTEC Software and Engineering ApS:**
Danske Bank, Lyngby Branch, 2800 Kgs. Lyngby, Denmark.
SWIFT: DABA DK KK. IBAN: DK3630004263877810
Notice: Your name in the transfer is necessary for identification.
- Check/cheque enclosed.
Please make check payable to **SWANTEC Software and Engineering ApS.**
- Send me an Invoice.

Hotel Room Reservation at Hotel Waldhaus Reinbek:

- Two (2) nights arriving on September 22nd, 2010.
- Other (please specify number of nights and arriving date): ___ nights arriving on: _____

Please return to:

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