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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FINAL 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**
Presented by partners of the European Project XPRESS – ***Open to all seminar participants***

12:00 – 13:00 **Lunch**

Workshop on SORPAS® and User Group Meeting – ***Open to all seminar participants***

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 – ***Open to all seminar participants***

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 – 10:25 **Future Body Structure by Steel and Sophisticated Joining Technologies**
Dr. Kiyoyuki Fukui, Sumitomo Metal Industiries,Japan
10:25 – 10:50 **Resistance Spot Welding – Simulation of Welding Triple Layer Sheet Metal**
André Marx, Robert Laurenz, ThyssenKrupp Steel Europe AG, Germany
10:50 – 11:15 **Resistance Spot Welding of Zinc-Coated, Press-Hardened Components with Tailored Properties**
Thomas Manzenreiter, Robert Sierlinger, Voestalpine Stahl GmbH, Austria
11:15 – 11:40 **Resistance Spot Welding of Advanced High Strength Steel of Complex Welding Program**
Dr. Zygmunt Mikno (Institute of Welding), Dr. Zbiginiew Bartnik (Wroclaw University of Technology), Szymon Kowieski (Institute of Welding), Poland
11:40 – 12:00 **Resistance spot welding of a complicated joint in new advanced high strength steel**
Nick den Uijl, Tata Steel RD&T (CORUS), Netherlands

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 **Weld Planning with Optimal Welding Parameters by Computer Simulations and Optimizations**
Dr. Wenqi Zhang, SWANTEC, Denmark

17:00 – 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. Doebbelin, 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, EJ. 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 then 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.

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:

Hotel Waldhaus Reinbek is now fully booked with registered participants to the seminar. Two alternative hotels are available nearby:

Sachsenwald Hotel Reinbek
Hamburger Straße 4-8
21465 Reinbek
Tel: +49 40 727610
Fax: +49 40 72761 215
info@sachsenwaldhotel.de
www.sachsenwaldhotel.de

Hotel Alt Lohbrügger Hof
Leuschnerstraße 76
D-21031 Hamburg
Tel: +49 40 739 600-0
Fax: +49 40 739 00 10
hotel@altlohbrueggerhof.de
www.altlohbrueggerhof.de

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REGISTRATION

Participant:

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

Participation:

	Registration before September 10th, 2010	**Registration after September 10th, 2010**
☐ Seminar	*€395*	*€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 (Please book directly with the hotel. Check below only if need help from the Organizers):

☐ Three (3) nights arriving on September 21st, 2010.

☐ Other (please specify number of nights and arriving date): ___ nights arriving on: _____

Please return to:

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