The 8th International Seminar on
Advances in Resistance Welding
10-12 September 2014, Baveno, Lake Maggiore, Italy

ANNOUNCEMENT

Organisers:

SWANTEC Software and Engineering ApS, Denmark
SINTERLEGHE s.r.l., Italy

Background:

New inventions and innovative developments in recent years have enabled new possibilities for joining challenging materials such as aluminium alloys, advanced high strength steels and with adhesives. Through constant research and development by material suppliers, welding equipment manufacturers and industrial end users, it is remarkable to see that resistance welding still remains one of the most efficient and competitive joining technologies in automotive, aerospace, electrical, electronics, white goods and other metal processing industries.

In order to meet the demands of industry to follow the recent advances in the technology available in the field of resistance welding, a series of international seminars on Advances in Resistance Welding have been initiated by SWANTEC since 2000 and now organised as a biennial international event. The 1st seminar was held in October 2000 in Copenhagen, Denmark; the 2nd in November 2002 in Aachen, Germany; the 3rd in November 2004 in Berlin, Germany; the 4th in November 2006 in Wels, Austria; the 5th in September 2008 in Toronto, Canada; the 6th in September 2010 in Hamburg, Germany, while the 7th in September 2012 in Busan, Korea.

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

The 8th seminar will be organized by SWANTEC and SINTERLEGHE on 10-12 September 2014 in Baveno, Italy. Specially invited lectures will be given by well-known experts and welding professionals from leading institutes and companies. The topics will cover the latest inventions and developments in resistance welding with special emphasis on adaptive control technologies and applications for welding of challenging materials *e.g.* aluminium alloys and advanced high strength steels etc, as well as new achievements on inspection of weld quality and assessment of electromagnetic fields.

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.
All presentations will be presented in English during the event.

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FINAL PROGRAMME

Wednesday, 10 September 2014:

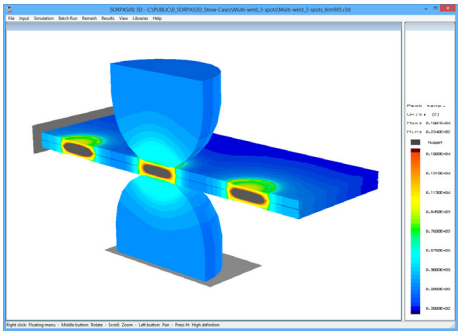
11:00 – 12:00 Registration

12:00 – 13:00 Lunch

13:00 – 14:10 **Workshop on SORPAS® 2D and 3D and User Group Meeting**
Dr. W. Zhang and Dr. C.V. Nielsen
SWANTEC Software and Engineering ApS, Denmark

14:10 – 14:30 **DeltaSpot Tapes in SORPAS**
A. Becirovic, Fronius International GmbH, Austria

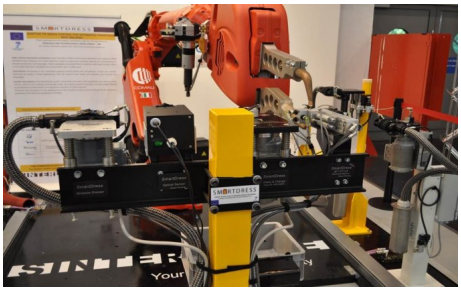
- *Open to all seminar participants*



14:30 – 15:30 Coffee break and transportation

15:30 – 17:00 **Demonstration of "SmartDress" System**
Partners of the EU Project "SmartDress" on "Adaptive Tip dress Control for Automated Resistance Spot Welding"

- *Open to all seminar participants*



18:00 – 20:00 Reception and buffet

Thursday, 11 September 2014:

09:00 – 09:10 **Welcome** *by Mr. Eugenio Tedeschi, General Manager, Sinterleghe s.r.l.*

09:10 – 09:50 Keynote speech: **Eco-sustainability in welding environment: application of green and lean methodologies to body welding lines**
Dr. Valeria Serpi, Comau S.p.A., Italy

09:50 – 10:30 **Application of spot welding simulation by AUDI AG**
Dr. W. Perret[1] and A. Kindsvater[2], [1]AUDI AG, Germany, [2]Audi Planung GmbH, Germany

10:30 – 11:00 Coffee break

Session 1: Resistance Welding of Challenging Materials

11:00 – 11:30 **Resistance spot welding with punching element for automotive applications in multi-material-design**
C. Kotschote[1], M. Korte[1], C. Neudel[1], Prof. J.P. Bergmann[2] and Prof. H. Rudolf[3], [1]AUDI AG, Germany, [2]Technische Universität Ilmenau, Germany, [3]Hochschule Anhalt, Germany

11:30 – 12:00 **Simulation of spot welding process with weld inlay for the aluminium-steel mixed construction**
Y. Yang[1], M. Hannig[1], H. Rudolf[1] and C. Kotschote[2], [1]Hochschule Anhalt, Germany, [2]AUDI AG, Germany

12:00 – 12:30 **Further approaches in resistance spot welding of aluminium alloys**
R. Bothfeld, J. Eggers and Dr. T. Jansen, Harms & Wende GmbH & Co KG, Germany

12:30 – 13:30 Lunch

Session 2: Resistance Welding of Challenging Materials - Continue

13:30 – 14:00 **Improvement of cross-tension strength using concave electrode in resistance spot welding of high-strength steel sheets**
G. Watanabe, T. Amago, Y. Ishii and H. Takao, TOYOTA Central R&D Labs., Inc., Japan

14:00 – 14:30 **Mastering the nugget position in critical steel-stackups with AHSS and stainless steel**
S. Schreiber, T. Wilhelm and P. Zak, GSImbH - SLV Duisburg, Germany

14:30 – 15:00 **Validation of RSW modeling for hot-stamped vs as-delivered 22MnB5 steel**
J. Hou, D. Saha, Prof. N. Zhou and Prof. A. Gerlich,University of Waterloo, Canada
N. Scotchmer and K. Chan, HUYS Industries Ltd., Canada

15:00 – 15:30 Coffee break

Session 3: New Developments in Resistance Welding Technologies

15:30 – 16:00 **Inspection of resistance welds with a handheld Ultrasonic Scanner**
K.A. Loth, Amsterdam Technology, The Netherlands

16:00 – 16:30 **Comau Welding Machine, the evolution of species**
F. Ferrero, Comau S.p.A., Italy

16:30 – 17:00 **SmartDress, advanced electrode tip dressing technology**
S.M. Smith[1], A Woloszyn[1], E Tedeschi[2], F Bertinato[2] and G Palopoli[2]
[1]TWI Ltd, United Kingdom, [2]Sinterleghe s.r.l., Italy

19:00 – 22:00 Dinner

Friday, 12 September 2014:

Session 4: Resistance Welding Process Optimization and Weld Quality

09:00 – 09:30 **Optimisation of the spot welder electric absorption thus improving the welding process quality and reducing TCO**
Dr. A. Lolli, TECNA S.p.A., Italy

09:30 – 10:00 **Dynamic experimental study of spot welders and its influence on weld quality by Modal Analysis technique**
G.F. Gomes[1,2], P. Vieville[1] and Dr. L. Durrenberger[3], [1]Ecole Nationale d'Ingénieurs de Metz, France,
[2]Universidade Federal de Itajubá, Brazil, [3]ArcelorMittal Research, France

10:00 – 10:30 **Analysis of projection welding in relation to the non-parallelism of electrodes**
Dr. Z. Mikno, Welding Institute, Poland

10:30 – 11:00 **Experimental and simulated strength of spot welds**
Dr. C.V. Nielsen, R. Bennedbaek, M.B. Larsen and Prof. N. Bay, Technical University of Denmark
Dr. Azeddine Chergui, ThyssenKrupp Steel Europe AG, Germany,
Dr. W. Zhang, SWANTEC, Denmark, and Prof. P.A.F. Martins, University of Lisbon, Portugal

11:00 – 11:30 Coffee break

Session 5: Assessment of Electro Magnetic Fields

11:30 – 12:00 **EMFWELD – an assessment of exposure to electromagnetic fields from resistance welding processes**
G. Melton and R. Shaw, TWI Ltd, United Kingdom

12:00 – 12:30 **Method to assess magnetic fields from welding against the EU-directive on electromagnetic fields**
Prof. Y. Hamnerius and Dr. T. Nilsson, Chalmers University of Technology, Sweden

12:30 – 14.00 Lunch and closing remarks

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VENUE INFORMATION

The venue of the event is at Hotel Splendid in Baveno, Lake Maggiore, Italy:

Hotel Splendid
(http://splendid.zaccherahotels.com/en)

Via Sempione 12
28831 Baveno (VB), Italy
Phone: +39-0323-924127
Fax: +39-0323-922200
Email: info@hotelsplendid.com

Hotel Reservation:

A number of rooms have been pre-reserved with special rate at **EUR 100€ + VAT 10%** per night for double room single use and **EUR 130€ + VAT 10%** per night for double room 2 persons.

Please make room reservation directly at the hotel by using the provided **Hotel Accommodation Form** and mentioning the code "**SWANTEC**" or "**SINTERLEGHE**" before **08 August 2014**.

Transportation:

The nearest airport is Milan Malpensa (MXP). The alternative airport is Milan Linate (LIN).

By train: Take a train from Malpensa airport to Busto Arsizio's Trenitalia station, hence another train to Baveno. You can plan your trip with the Trenitalia website: http://www.trenitalia.com	**By bus:** The "**Alibus**" service connects Malpensa to Baveno in about 1 hour 10 minutes. You must reserve a seat latest the previous day before 11:00 am. Here is the time table: http://www.vcoinbus.it/cagnoli/SAF/i_verbania_malpensa.pdf
By taxi: A taxi ride from the airport to Baveno will take less than an hour but cost around 100 to 150 euro.	**By car:** Another option is to rent a car from the airport or drive you own car.

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REGISTRATION

Participant:

Full Name _____ Title _____

Organization _____

Street Address _____

Zip Code _____ City _____

Country _____

Phone _____ Fax _____

E-Mail _____

Participation Fee:

☐ €395 Euro - Registration before 31 July 2014

☐ €425 Euro - Registration after 31 July 2014

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

Payment Method:

☐ Bank transfer to SWANTEC Software and Engineering ApS
Danske Bank, Lyngby Branch, 2800 Lyngby, Denmark
SWIFT: DABA DK KK. IBAN: DK6530004260599852
Notice: Your name in the transfer is necessary for identification

☐ Check/cheque made payable to SWANTEC Software and Engineering ApS

☐ Send invoice* *for EU countries, your VAT reg. no.: _____

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