DVS Congress | DVS Expo

PROGRAM

CCH - Congress Center Hamburg / Germany
September 26 – 29, 2011

International Thermal Spray Conference & Exposition

September 27 – 29, 2011 as part of
DVS Congress and DVS Expo 2011

www.dvs-congress.de/ITSC2011
www.dvs-expo.de

Organizers

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A&M Thermal Spray Society
iiw

Media Sponsors

International Thermal Spray & Surface Engineering
DVS – The German Welding Society is pleased to announce the following sponsors of ITSC 2011:

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Hamburg extends an invitation to attend the worldwide unique Expert Congress and Exposition of the Joining, Cutting and Coating Technology (September 26 to 29, 2011, Hamburg, Germany). Bundled expert knowledge, renowned professional conferences and research colloquiums, worldwide contacts and an extensive range of products and services – all this is part of this extraordinary event which will unite a total of eight important national and international conferences and research colloquiums under the same roof as part of the DVS Congress 2011:

- International Thermal Spray Conference and Exposition (ITSC 2011)
- DVS Annual Welding Conference (GST)
- DVS Student Congress 2011
- 12th Special Conference Welding in Shipbuilding and Civil Engineering
- Special Conference Underwater Technology 2011
- Robotics 2011 – Economical production by joining technology automation
- Final Colloquium on the AiF/DFG-Research Cluster “Arc Welding – Physics and Tools”
- Final Colloquium on the AiF/DFG-Research Cluster “Thermal Spraying”

To complete the DVS Congress, the DVS Expo will take place for the first time in 2011. This trade exhibition, to be held together with the DVS Congress, offers industry specialists the opportunity of presenting themselves within a unique environment. Here, an ideal platform is being made available to the industry, where to profit from the different disciplines of the DVS Congress and to meet other members of a highly skilled and international trade audience. The ITSC Exposition is integrated in the DVS Expo. Until now, the DVS Expo is nearly sold out by over 100 national and international companies. This very positive response exceeds all positive assumptions in total and shows that the concept of the DVS Congress and DVS Expo corresponds with the excellent worldwide economical situation and the need for an international interdisciplinary technical exchange of goods, products and information.

Frank Thorwirth, Chairman and CEO of Messe Essen, will open the DVS Expo on September 27, 2011, 12:40. DVS really appreciates the support of the team of Messe Essen for organizing the first DVS Expo.

The DVS Expo will be accompanied by a permanent Industrial Forum which is also located on the expo floor. Exhibitors and other experts will present their latest products and services. The Industrial Forum will give practical information directly to workers and other experts. September 28, 2011 the Industrial Forum will be focussed on thermal spray aspects.

The DVS Expo is also the venue for the 9th National DVS Young Welders Competition which offers young people between 16 and 21 years the possibility to compete against each other in four different disciplines in total.

DVS – The German Welding Society, the ASM Thermal Spray Society (TSS) and the International Institute of Welding (IIW) are proud to invite all experts to come to Hamburg for the International Thermal Spray Conference (ITSC) to exchange their experts’ knowledge.

ITSC 2011 offers with nearly 200 lectures and over 160 poster presentations a new superlative for thermal spray information transfer activities.

With its interlinking of the related, renowned conferences and exhibitions from the field of joining, cutting and surfacing technology, the ITSC subscribes to a state of the art concept, in order to identify and address novel applications and new users for thermal spray coatings.

Here, the DVS Congress 2011, in conjunction with ITSC 2011, is at internationally renowned level in the areas of user orientation, conveying industry knowledge and the exchange of experiences and up-to-date specialized trade information. Altogether the DVS Congress offers a three day state of the art information highlight with over 500 technical presentations.

The essential focus of the event, here, is not only a practically oriented coupling of research, technology and qualification/training, but in particular on generating interest among the various enterprises for an integrated kind of technical-scientific information exchange.

To reinforce the position of Thermal Spray in its existing and future markets, the ITSC offers very use-oriented “Application Highlights” for growing and upcoming applications:

- Automotive Industry
- Aviation Industry
- Industrial Gas Turbines
- Medical Industry
- Metals Processing
- Tribological Coatings

With the “Young Professionals” session ITSC 2011 offers a brilliant stage for promising young talents, both from industry and universities.

We hope that this event will meet your expectations and we look forward to welcoming you at the Hamburg event 2011!

Klaus Middeldorf
General Manager
DVS – German Welding Society
Designing more efficient jet engines - aerospace engineers partner with Sulzer.

Higher operating temperatures of jet engines drive greater fuel burn efficiency. Enabling these goals are Sulzer’s thermal barrier coatings for hot section components. Sulzer teams up with the world’s leading engine manufacturers, pioneering and continuously optimizing materials and application processes for these coatings. The benefits are impressive: For a fleet the size of the A320 family, 2½ million liters of fuel, the volume of an Olympic size swimming pool, are saved every day avoiding 1800 tonnes of CO2. Partner with Sulzer and we’ll combat global warming together!

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ITSC 2011

Different days, different markets – for this kind of intensive exchange of expert knowledge, an invitation is being issued to all experts to come to Hamburg for the ITSC 2011 as part of DVS Congress and DVS Expo.

To reinforce the position of Thermal Spray in its existing and future markets, the ITSC offers very use-oriented “Application Highlights” among other subjects.

To complement the technical program the DVS Expo, the Industrial Forum and as well a Poster Session will take place.

A USB stick with manuscripts of all conferences of DVS Congress will give a complete overview of the entire technical program.

In addition to all these technical information ITSC will also offer an interesting framework program (social events, industrial tours and excursions).

Please mark your calendar

General Opening DVS Congress and DVS Expo
Monday, September 26, 2011, 18:00, Hall 4

Welcoming Party DVS Congress and DVS Expo
Monday, September 26, 2011, 19:00, Hall 3

Opening of ITSC 2011
Tuesday, September 27, 2011, 9:00, Hall G 1

Opening of DVS Expo
Tuesday, September 27, 2011, 12:40
(DVS Expo September 27 – 29, 2011), Expo Hall H

Exhibitor Reception
Tuesday, September 27, 2011, 17:30, Expo Hall H

Contact

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P.O. Box 10 19 65
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www.dvs-congress.de/itsc2011
www.dvs-expo.de

Conference Location

CCH – Congress Center Hamburg and Expo Hall H
Am Dammtor / Marseiller Str. 1
20355 Hamburg/Germany
### COMMITtees and ENDorsing Sponsors

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- C.M. Kay: ASB Industries (US)

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- W. Tillmann: University of Dortmund (DE)
- R. Vaßen: Forschungszentrum Jülich GmbH (DE)
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- J. Wilden: Technical University of Berlin (DE)

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- A. Kay: ASB Industries, Inc. (US)
- C.M. Kay: ASB Industries, Inc. (US)
- K. Laporte: Sulzer Metco (US) Inc. (US)
- R.S. Lima: National Research Council Canada (CA)
- B. Marple: National Research Council Canada (CA)
- C. Moureau: National Research Council Canada (CA)
- N. Nemec: ASM International (US)
- K. Ogawa: Tohoku University (JP)
- L. Pouliot: TECNAR Automation Ltd. (CA)
- R.C. Tucker: The Tucker Group, LCC (US)
- J. Villafuerte: Centerline Ltd. (CA)
- P. Vuoristo: Tampere University of Technology (FI)
- G. Wuest: Sulzer Metco (US) Inc. (US)
- D. Zhu: NASA-Glenn Research Center (US)

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- L. Pouliot: TECNAR Automation Ltd. (CA)

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- Asian Surface Technologies, PTE. Ltd. (SG)
- BIL Belgisch Instituut voor Lastechniek (BE)
- CEREM/CEA (FR)
- Commission of the European Community (BE)
- DGO - Deutsche Gesellschaft für Galvano- und Oberflächentechnik e. V. (DE)
- DGK - Deutsche Keramische Gesellschaft e. V. (DE)
- DVS - Research Association (DE)
- DGS - Gesellschaft Thermischer Spritzten e. V. (DE)
- HTS - High Temperature Society of Japan (JP)
- International Thermal Spray Association (US)
- Japan Thermal Sprayers Association (JP)
- JTSS - Japanese Thermal Spray Society (JP)
- TSSE - Thermal Spraying and Surface Engineering Association (GB)
- TWI The Welding Institute (GB)
- VDI Verein Deutscher Ingenieure (DE)
- Werkstoff-Forum RWTH Aachen (DE)
**TIME SCHEDULE**

ITSC 2011 as part of DVS Congress and DVS Expo

### Monday, September 26, 2011

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<tr>
<th>Time</th>
<th>Event</th>
<th>Hall</th>
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<tbody>
<tr>
<td>15:30</td>
<td>64th DVS ANNUAL ASSEMBLY</td>
<td>HALL 6</td>
</tr>
<tr>
<td>16:00</td>
<td>GENERAL OPENING DVS CONGRESS AND DVS EXPO 2011</td>
<td>HALL 4</td>
</tr>
<tr>
<td>18:00</td>
<td>WELCOMING PARTY DVS CONGRESS AND DVS EXPO 2011</td>
<td>HALL 3</td>
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### Tuesday, September 27, 2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Hall</th>
<th>Event</th>
<th>Details</th>
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<tbody>
<tr>
<td>09:00</td>
<td>HALL A</td>
<td>COFFEE BREAK, FOYER GROUND FLOOR</td>
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<tr>
<td>10:40</td>
<td>HALL B 2.1</td>
<td>Aviation Industry 1</td>
<td></td>
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<tr>
<td>11:00</td>
<td>HALL B 2.2</td>
<td>HVOF &amp; Flame Spraying 1</td>
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<tr>
<td></td>
<td>HALL C 2.1</td>
<td>Modeling &amp; Simulation 1</td>
<td></td>
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<tr>
<td>12:00</td>
<td>HALL C 2.2</td>
<td>Wear Protection 1</td>
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<tr>
<td>12:40</td>
<td>HALL D</td>
<td>Powders, Wires &amp; Suspensions</td>
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<tr>
<td>13:00</td>
<td>HALL E</td>
<td>Strahlverfahren</td>
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<tr>
<td>13:30</td>
<td>HALL F</td>
<td>Qualitatsgerechte Fertigung</td>
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<tr>
<td>14:00</td>
<td>HALL G 1</td>
<td>Robotertechnik in der praktischen Anwendung 1</td>
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<tr>
<td>15:40</td>
<td></td>
<td>REGELWERKE UND QUALITATSSICHERUNG 1</td>
<td>Opening of ITSC 2011 Awards Ceremony, Plenary Lecture</td>
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<tr>
<td>16:00</td>
<td>HALL A</td>
<td>OPENING OF DVS EXPO, EXPO HALL H</td>
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<tr>
<td>17:15</td>
<td>HALL B 2.1</td>
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<tr>
<td>18:00</td>
<td>HALL B 2.2</td>
<td>NATIONAL DVS YOUNG WELDERS' COMPETITION, EXPO HALL H</td>
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<td>19:00</td>
<td>HALL C 2.1</td>
<td>LUNCH BREAK, EXPO HALL H</td>
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<td></td>
<td>HALL C 2.2</td>
<td>Metals Processing 1</td>
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<td>HALL C 2.2</td>
<td>Cold Spraying 1</td>
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<td>HALL C 2.2</td>
<td>Tribological Coatings 1</td>
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<td>HALL C 2.2</td>
<td>Nanomaterial Coatings 1</td>
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<tr>
<td>20:00</td>
<td>HALL D</td>
<td>Characterization &amp; Testing 1</td>
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<tr>
<td>21:00</td>
<td>HALL E</td>
<td>Leichtbau</td>
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<tr>
<td>22:00</td>
<td>HALL F</td>
<td>Windenergie</td>
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<tr>
<td>23:00</td>
<td>HALL G 1</td>
<td>Werkstattpraktiker</td>
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**TIME SCHEDULE**

DVS Congress and DVS Expo 2011
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<th>Hall C 2.1</th>
<th>Hall C 2.2</th>
<th>Hall D</th>
<th>Hall E</th>
<th>Hall F</th>
<th>Hall G 1</th>
</tr>
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<tbody>
<tr>
<td>09:00</td>
<td>Aviation Industry 2</td>
<td>Cold Spraying 3</td>
<td>Fuel Cells 2</td>
<td>Nanomaterial Coatings 2</td>
<td>Characterization &amp; Testing 3</td>
<td>F &amp; E Mischverbindungen</td>
<td>Tauchtechnik</td>
<td>Programmieren und Simulation</td>
<td>Interessante fügetechnische Konstruktionen</td>
</tr>
<tr>
<td>10:40</td>
<td>COFFEE BREAK, EXPO HALL H</td>
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<tr>
<td>11:00</td>
<td>Industrial Gas Turbines 1</td>
<td>Alternative Power Generation</td>
<td>New Processes 1</td>
<td>Automotive Industry</td>
<td>Final Colloquium “Thermal Spraying”</td>
<td>F &amp; E Fugeverfahren</td>
<td>Verfahrenstechnik unter Wasser</td>
<td>Laseranlagen</td>
<td>Regelwerke und Qualitätsicherung 2</td>
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<tr>
<td>13:05</td>
<td>LUNCH BREAK, EXPO HALL H</td>
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<tr>
<td>14:00</td>
<td>New Processes 2</td>
<td>Cold Spraying 4</td>
<td>Quality &amp; Qualification</td>
<td>Modeling &amp; Simulation 2</td>
<td>Final Colloquium “Thermal Spraying”</td>
<td>F &amp; E Werkstoffverhalten</td>
<td>Qualitätsicherung und Sensorik</td>
<td>Moderne Lichtbogenfügeverfahren 1</td>
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<tr>
<td>15:40</td>
<td>COFFEE BREAK, EXPO HALL H</td>
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<tr>
<td>16:00</td>
<td>Aviation Industry 3</td>
<td>Plasma Spraying 1</td>
<td>Process Diagnostics, Sensors, &amp; Controls 1</td>
<td>Medical Industry 1</td>
<td>Pre- &amp; Post-Treatment 1</td>
<td>F &amp; E Ruhreimbewegen</td>
<td>Schadensfälle und Reparatur</td>
<td>Wirtschaftlichkeit und Produktivität</td>
<td>Moderne Lichtbogenfügeverfahren 2</td>
</tr>
<tr>
<td>17:30</td>
<td>17:30-18:30 ITSC POSTER SESSION EVENING, FOYER 1ST FLOOR</td>
<td>JTST AWARD</td>
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### Thursday, September 29, 2011

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<th>Hall C 2.2</th>
<th>Hall D</th>
<th>Hall E</th>
<th>Hall F</th>
<th>Hall G 1</th>
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</thead>
<tbody>
<tr>
<td>09:00</td>
<td>Industrial Gas Turbines 2</td>
<td>Modeling &amp; Simulation 3</td>
<td>HVOf &amp; Rame Spraying 2</td>
<td>Tribological Coatings 2</td>
<td>Pre- &amp; Post-Treatment 1</td>
<td>Korrosions- und Verschleißschutz</td>
<td>Final Colloquium “Arc Welding”</td>
<td>Prüftechnik</td>
<td>Stahlbau</td>
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<td>10:40</td>
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<tr>
<td>11:00</td>
<td>“YOUNG PROFESSIONALS” SULZER METCO YOUNG PROFESSIONALS AWARD HALL G 2</td>
<td>Arbeits schutz und Qualifizierung</td>
<td>Final Colloquium “Arc Welding”</td>
<td>Fahrzeugbau</td>
<td>Rohrleitungs-, Anlagen- und Kraftwerksbau</td>
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<tr>
<td>13:05</td>
<td>LUNCH BREAK, EXPO HALL H</td>
<td>13:05-14:00 ITSC POSTER SESSION, FOYER 1ST FLOOR</td>
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<tr>
<td>14:00</td>
<td>Aviation Industry 4</td>
<td>Plasma Spraying 2</td>
<td>Characterization &amp; Testing 4</td>
<td>Corrosion Protection 2</td>
<td>Pre- &amp; Post-Treatment 3</td>
<td>Final Colloquium “Arc Welding”</td>
<td>Kranbau</td>
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<tr>
<td>16:00</td>
<td>Wear Protection 2</td>
<td>Plasma Spraying 3</td>
<td>Process Diagnostics, Sensors, &amp; Controls 2</td>
<td>Medical Industry 2</td>
<td>Corrosion Protection 3</td>
<td>Final Colloquium “Arc Welding”</td>
<td>Maschinenbau</td>
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</table>

The complete Technical Program of ITSC - see attachment.
The complete Technical Program of all other conferences of DVS Congress (only held in German language) is available under: www.dvs-congress.de/2011
There will be an update of all technical programs onsite at the registration desk in Hamburg.
The AiF/DFG-Research Cluster “Thermal Spraying” was based on results of a survey of the Research Association on Welding and Allied Processes of the DVS (German Welding Society) together with the Association of Thermal Sprayers (GTS). About 100 companies (mainly small and medium sized enterprises) and research institutions formulated important fields of research and future needs for surface protection applications. General aspects were cost reduction for materials/processes, quality assurance for products/processes as well as environmental protection (alternatives to harmful materials).

These topics were covered by eight projects of the Research Cluster, divided into three fields:

- **Materials**
  - (Fe-based alloys, Zn-based alloys for Cold Spraying)
- **Processes**
  - (HVOF – APS – Cold Spraying, Simulation)
- **Quality**
  - (process diagnostics, online NDT)

The projects, coordinated by the Surface Engineering Institute (IOT, RWTH Aachen University) and the Institute of Materials Science and Engineering (IWW, TU Chemnitz), started with a kick-off meeting in Aachen in February 2008. Five projects were near-application IGF-projects funded by the Federal Ministry of Economics and Technology. These projects were conducted in close collaboration with the industry (project monitoring committee). The three remaining projects were funded by the DFG and worked out basics for the technology understanding. This knowledge was transferred to the five IGF-projects and provided a scientific corroboration. For demonstration purposes, applications from paper and printing industry were chosen, but the results are also transferable to other industrial applications. The duration of each project was 3 years.

The structure of the Research Cluster was build up in such a way that all projects were linked together and a gain of information within one project benefited the results of the other projects. Each project was capable of working independently and had a special objective which contributed to the objectives of the Research Cluster.

**Participating Institutes**

- AiF
- DFG
- DVS
- Bundesministerium für Wirtschaft und Technologie
- RWTH Aachen University
- IWW Chemnitz
- MI
- TU Dortmund
- LPT
- HSU Hamburg

**FINAL COLLOQUIUM ON THE AiF/DFG-RESEARCH CLUSTER “THERMAL SPRAYING”**
Research Cluster Structure

Colloquium Program

Overview of the AiF/DFG-Research Cluster “Thermal Spraying” – history, projects, facts
T. Warda*

W1: Development of nanostructured iron-based alloys with enhanced corrosion resistance for thermal spray applications
M. Erne*

P1: Abrasion resistant thermally sprayed iron-based nanostructured composite coatings for application in paper industry
C. Rupprecht*

W2: A novel approach to manufacture fine-grained Fe-based powders for wear and corrosion protection applications
B. Rüther*

P2: Development and characterization of thermally sprayed fine Fe-based materials for wear and corrosion applications
T. Warda*

Q2: Process diagnostics - tools for experimental investigation and verification of simulation results in the research cluster "Thermal Spraying"
S. Zimmermann*

P3: Optimization of a HVOF-process by simulation methods
M. Schäfer*

Q1: Limits of defect detection during lock-in thermography on thermal spray coatings
T. Grund*

W3: Cold Spraying of modified Zn-alloy coatings for print application
K. Onizawa*

* Presenters
During the ITSC event a Poster Session will be held in the Foyer 1st Floor of the CCH (Congress Center Hamburg). The poster presenters will be available for discussion scheduled as follows:

**ITSC Poster Session Evening**

*Wednesday, September 28, 2011, 17:30-19:30*

All ITSC registrants are invited to join the ITSC Poster Session. A snack and drinks will be offered.

**ITSC Poster Session**

*Thursday, September 29, 2011, 13:05-14:00*

All ITSC registrants are invited to join the ITSC Poster Session. In addition further contacts with the authors can be arranged.

The USB stick with manuscripts of all conferences of DVS Congress will give a complete overview (poster presentations included).
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Automotive Industry

2. Investigation of heat treatment on cold sprayed aluminum coatings on magnesium substrates  
   H. Bu*, B. Jodoin, M. Yandouzi, C. Lu

3. Sliding wear behavior of HVOF sprayed coatings, suitable for piston rings application  
   S. Houdkova*, M. Kasparova, F. Zahalka

Aviation Industry

4. Applications of cold gas spraying compared to manual laser welding in connection with a repair contract in the aerospace field  
   P. Lutz*

5. High thickness A-357 aluminum alloy coatings deposited by cold spray for the repair of aeronautical components  
   S. Vezzù*, S. Rech, A. Trentin, G. Zanon

6. Study of oxidation behavior of TBCs with APS and HVOF CoNiCrAlY bond coatings  

7. Thermal barrier coatings on novel high temperature cobalt rhenium substrates  
   P. Seller*, M. Bäker, J. Rösler

8. Potential of cold gas dynamic spraying process in the restoration of damaged alclad layer of aircraft skin  
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9. Synthesis of Y₂SiO₅ powder by solid liquid sintering and coating produced by plasma spray technique on the SiC substrate  
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10. Restoration of titanium parts using commercial cold spray  
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11. Restoration of aluminum parts and coatings using commercial cold spray  
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12. Thermal barrier coatings for rocket engines  
    J. Schloesser*, M. Bäker, J. Rösler

13. Development of thermal barrier coatings with fine columnar crystal structure deposited by supersonic atmospheric plasma spraying  
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14. Effect of bond coat material and heat treatment on adhesion strength and characteristics of thermal spray barrier coating system with CGDS, HVOF and APS techniques  

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16. Preparation and thermophysical properties of La₂(Zr₀.₇Ce₀.₃)₂O₇ ceramic material  
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18. Advanced thermal barrier coatings from Ti-doped YSZ systems  
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ITSC Exposition as part of DVS Expo

Concurrent with the DVS Congress, the ITSC Exposition will take place in the DVS Expo, held in the Expo Hall H. Industry specialists will have the opportunity of presenting themselves within a unique environment.

Exposition hours are from:

Tuesday, September 27, 2011 12:30-17:30
Opening 12:30
Exhibitor Reception 17:30

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Expo Only

Day-Ticket EUR 20
Unlimited Pass EUR 46

Expo Guide

You will find a catalogue (free of charge) with all information about DVS Expo (exhibitor information, contacts, booth numbers) at the booth of DVS Media in Expo Hall H and at the registration desk in the foyer.

Contact DVS Expo 2011

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<th>Exhibition Name</th>
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<td>AMT AG, Switzerland</td>
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<td>Panasonic Industrial Europe Gmbh, Germany</td>
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<td>Photron (Europe) Ltd., United Kingdom</td>
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During the exposition hours there will be an application oriented forum. This forum provides exhibiting companies the opportunity to inform visitors about their companies’ portfolio.

The special ITSC forum day will be September 28, 2011. Invited companies will present industry related topics to the audience. The lectures are given in English or German language with simultaneous translation and are limited to 25 min. including discussion. Location is the so called “Industrial Forum” in the Expo Hall H.

The final program of the industrial forum will be available onsite at the registration desk in Hamburg.

INDUSTRIAL FORUM
Forum for New Ideas in the DVS Expo
September 27 – 29, 2011, Expo Hall H

NATIONAL DVS YOUNG WELDERS COMPETITION
September 27 – 29, 2011, Expo Hall H

The 9th National DVS Young Welders Competition will also be a highlight of DVS Congress and DVS Expo. Young people, all between 16 and 21 years of age, compete against each other in four different disciplines in total – Gas Welding (G), Tungsten-Inert Gas Welding (TIG), Manual Metal-Arc Welding (E) and Metal-Active Gas Welding (MAG). Beforehand they had already won through against their rivals at the regional and state levels. The items during the coming days in Hamburg will establish the national winners in the individual disciplines, to select the most successful state branch!
Thermal Spray Technology, Processing and Evaluation
September 24 – 26, 2011, 08:00-17:00

Location
Radisson Blu Hotel
Hamburg/Germany
(next door to CCH)

Instructors
Christopher C. Berndt, PhD, FASM, HoF
Professor, Swinburne University of Technology
Melbourne, Victoria, Australia

Douglas G. Puerta
Laboratory Director, IMR Test Labs
Portland, Oregon, United States of America
Thermal spray technology and coatings solve critical problems in demanding environments. They provide “solutions” to problems involving repair; wear; high temperature and aqueous corrosion; and thermal protection. Thermal spray can also be used to manufacture net-shapes, advanced sensors and materials for the biomedical and energy/environmental sectors. These and other emerging applications take advantage of the rapid and cost-effective capabilities of thermal spray technology in the OEM and repair industries.

Thermal spray processes - twin wire-arc, combustion, high velocity oxy-fuel (HVOF), cold spray and plasma spray, and associated technologies, can deposit virtually any material as a surface coating onto a wide range of other materials. Coating reliability and effectiveness requires that these overlay coatings be selected, engineered and applied correctly. In addition, the accurate evaluation of these coatings ensures that specifications are met.

This course (i) provides a thorough grounding and understanding of thermal spray processes, (ii) presents the complex scientific concepts in terms of simple physical models, and (iii) integrates this knowledge to practical applications and accepted thermal spray practices. While this is not a laboratory course, detailed instruction for the evaluation of thermal spray coating will be covered. Particular attention will be paid to metallographic preparation, and the methods used to ensure rigorous and practical evaluation. NO mathematics is used to explain the processes or materials/mechanical engineering.

Participants are encouraged to contact the instructors prior to the course so that any particular application or problem can be discussed as a case history. Each registrant receives the Handbook of Thermal Spray Technology and a comprehension set of notes that include the presentation slides.

Learning Objectives
Upon completion of this course, participants will:

• Determine the historical basis for thermal spray technology and have detailed knowledge regarding the development of equipment and materials as related to present-day technology.
• Recognize the terminology, principles and underlying theory of thermal spray technology.
• Compare and contrast thermal spray technologies with respect to competing coating technologies - PVD, CVD, hardfacing, electroplating etc.
• Explain how materials and feedstocks are designed and manufactured and how to select them for different spray processes.
• Identify applicable testing methods and currently accepted industrial practices used for quality control of coatings.
• Understand the relationship between metallographic preparation and coating appearance, and be able to predict other properties (such as adhesive strength) based on coating appearance.

Who Should Enroll?

• Technologists
• Engineers
• Technicians
• Technical marketing personnel
• Graduate students and other professionals entering the thermal spray field or who wish to update their knowledge.

Course Outline
1. Surface Science
2. Equipment & Theory
3. Processing & Design
4. Materials
5. Applications
6. Testing & Characterization
ABOUT THE INSTRUCTORS

Chris Berndt earned his Ph.D. from Monash University, Melbourne in the area of “The Adhesion of Flame and Plasma Sprayed Coatings”. See <http://www.swinburne.edu.au/feis/iris/staff/cberndt.html> He took on several post-doc fellowships in the U.S. before returning to Monash. He then joined the faculty at Stony Brook University in 1990 and he was appointed Associate Dean for Undergraduate Studies in 2001.

In 2005, Berndt returned to Australia as the founding Professor of Surface and Interface Engineering at James Cook University, Queensland. He moved to Swinburne University of Technology, Melbourne in 2008 as the founding Professor of Surface Science and Interface Engineering. He also serves as Director of the Industrial Research Institute Swinburne (aka ‘IRIS’). Berndt also remains as an Adjunct Professor at Stony Brook.

Berndt has served as President of the ASM Thermal Spray Society and as an ASM Trustee, and he was inducted into the Thermal Spray Hall of Fame in 2007. He has more than 400 publications in the field of materials science and engineering, and has served as editor for 10 conference proceedings on thermal spray.

Doug Puerta earned his B.A. from Franklin and Marshall College in Chemistry, and his M.S. in Materials Science and Engineering from Lehigh University. His graduate research focused on electrophoretic methods for the deposition of metallic and ceramic coatings. Following graduate school, Doug spent several years in the heat treat industry before joining IMR Test Labs.

Doug has over 20 years experience in surface enhancement and quality control. He is a member of the ASM Thermal Spray Society (TSS) Board of Directors, and a previous Chairman of the TSS Accepted Practices Committee on Metallography and Mechanical Testing. He has also taught thermal spray processing and evaluation for the past six years to aerospace OEMs and suppliers across the globe.

REGISTRATION

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<tr>
<th>Reg. Fee</th>
<th>Before August 8, 2011</th>
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<td>Member fee (TSS/DVS/IIW)</td>
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<td>Non-Member fee</td>
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<td>Student fee</td>
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To register for the course or for any questions, please contact the ASM Member Service Center: memberservicecenter@asminternational.org or natalie.nemec@asminternational.org (Product Code: 253081911)
SOCIAL EVENTS

64th DVS Annual Assembly

Monday, September 26, 2011, 15:30, Hall 6
All registrants are invited to take part in the DVS Annual Assembly (only in German, free of charge)

General Opening of DVS Congress and DVS Expo

Monday, September 26, 2011, 18:00, Hall 4
All registrants are invited to take part in the General Opening (with simultaneous translation, free of charge)

Welcoming Party
DVS Congress and DVS Expo

Monday, September 26, 2011, 19:00, Hall 3
All registrants are invited by DVS for a snack and drinks. Please order a special ticket

Opening of ITSC 2011

Tuesday, September 27, 2011, 09:00, Hall G 1
All registrants are invited to take part in the ITSC Opening. The Opening is included in the conference tickets

Opening of DVS Expo

Tuesday, September 27, 2011, 12:40, Expo Hall H
All registrants are invited to take part in a short Opening of the Exposition (with translation, conference or expo ticket needed)

Exhibitor Reception

Tuesday, September 27, 2011, 17:30, Expo Hall H
All registrants are invited by DVS and Messe Essen for a snack and drinks. Please order a special ticket

INDUSTRIAL TOURS

Daimler AG, Hamburg

Monday, September 26, 2011, 13:00-16:30
EUR 20 / pers. (Limited number of registrants)
Introduction of the Hamburg - Berlin - Untertürkheim factory network with the name of Powertrain. This will be followed by a presentation of the innovative welding technologies at Mercedes-Benz. The production halls of the smart rear axle and of the rear axle of the A, B and C classes will be visited.

Lufthansa Technik AG

Monday, September 26, 2011, 13:00-17:30
EUR 20 / pers. (Limited number of registrants)
Lufthansa Technik’s headquarter is based in Hamburg, Germany. Almost 7,000 employees work on the premises which are spread out over more than 750,000 square meters in the western part of the airport Hamburg Fuhlsbüttel. Are you tempted by aircraft technology? Why not taking a look behind the hangar doors of Lufthansa Technik and follow us to get in touch with maintenance, repair and overhaul of transport category aircrafts. In short: experience Lufthansa Technik first-hand!
You will experience how Lufthansa produces the maximum degree of aircraft safety directly in touching distance.

Please note for both Industrial Tours:
A valid passport is necessary!
Departure: CCH (please watch information board)
Limited number of registrants (first come-basis)
Participation is only valid with a registration for the conference. Please indicate on the registration form. Registrants should be present at 10 minutes before departure of the buses. Do not forget the voucher for the tour. The tour includes transportation and English-speaking guide. Closing date for booking the industrial tours is September 10, 2011. If a minimum number of registrants for the tour is not reached, the tour can be cancelled.
EXCURSIONS

A - Historical Warehouse City & modern Hafencity (busride)

Tuesday, September 27, 2011, 10:00-12:00   (EUR 25 / pers.)
Departure: 10:00 by bus from the CCH to the harbor area. Please watch information board.

During this guided walking tour you will learn a lot of the historical part and the futuristic new Hafencity.

We start with the historical warehouse complex – a very typical part of Hamburg.

When Hamburg joined the German Customs Union in 1881, the storehouse quarter formed the first Hamburg free port area. These useful storehouses and loading facilities were inaugurated in 1888. The gothic-like red-brick stone type of the warehouses ties on to the architecture of the medieval Hanseatic cities.

Nowadays the new and modern quarter “Hafencity” is under construction right next to the old warehouse city. The future is meeting the past and the border of the free port area has to be relocated. But in some historical warehouses you can still find coffee, tea, spices or oriental carpets stored by the residents of the quarter according to tradition.

The first construction sections of the Hafencity are ready and this new district of Hamburg is becoming more lively. Some important companies have inaugurated their new office buildings and the citizen of Hamburg has started to move into the new apartment-towers. Even the school is opened now – in direct neighborhood to the cruise terminal, museums and restaurants. The architecture is very innovative and futuristic and includes the typical maritime character of this area.

Last but not least you will get an impression of Hamburg’s new landmark – the Elbphilharmonie – the concert hall of the future. The inauguration is planned for 2013 but even today the glass façade on top of an old historical storehouse is very impressing.

Limited number of registrants (first come-basis). Please indicate on the registration form. Registrants should be presented 10 minutes before departure of the bus. Do not forget the voucher for the excursion. The excursion includes transportation and English-speaking guide. Closing date for booking the excursion is September 10, 2011. If a minimum number of registrants is not reached, the excursion can be cancelled.
B – City and Alster [walk]

Tuesday, September 27, 2011, 14:00-17:45  (EUR 30 / pers.)
Departure: 14:00 at the CCH. Please watch information board.

Departure at the congress center for a little guided walk through the city center. You will learn a bit about the history of the town as well as the modern shopping world around the Inner Alster Lake.

Embarkment at the landing stage Jungfernstieg on a modern launch of the white Alster-fleet. The Alster lakes and canals are the heart of the city and offer a recreation area right next to the city center.

This cruise along the Alster canals shows Hamburg from a completely different perspective: beautifully kept villas and parks, modern residential buildings, allotment gardens and natural river banks glide past you - so close you can almost reach out and touch them. Not far from the city centre you can enjoy the idyllic greenery of the residential areas around the Alster.

The cruise will end at the landing stage Jungfernstieg. Individual return to the hotel or the congress center. – The city invites you to an individual shopping tour.

Limited number of registrants (first come-basis). Please indicate on the registration form. Registrants should be presented 10 minutes before starting the walk. Do not forget the voucher for the excursion. The excursion includes an English-speaking guide. Closing date for booking the excursion is September 10, 2011. If a minimum number of registrants is not reached, the excursion can be cancelled.

C – Organ Recital

Wednesday, September 28, 2011, 19:00  (EUR 20 / pers.)
Location: Main Church St. Michaelis Hamburg (Hamburger Michel), Englische Planke 1a, 20459 Hamburg/Germany
Meetingpoint: 18:45 in front of the main entrance of “Hamburg Michel” (without transport)

Program:

Carl Philipp Emanuel Bach Organ
Girolamo Frescobaldi (1583–1643)
Capriccio sopra la Bassa Fiamenga

Great Organ

Johann Sebastian Bach (1685–1750)
Prelude and fugue in D major, BWV 532

Concert Organ

Felix Mendelssohn Bartholdy (1809–1847)
Theme with variations in D major (1844)

Central Console
Franz Liszt (1811–1886)
“Saint Francis of Paola Crossing the Straits of Messina”
Charles-Marie Widor (1844–1937)
Toccata in F major from the 5th organ symphony

Christoph Schoener, Church Music Director, Organ

Please indicate on the registration form. Registrants should be presented 15 minutes before the start of the Organ Recital in front of the main entrance of the Hamburger Michel. Do not forget the voucher for the excursion. The excursion does not include transportation. Closing date for booking the excursion is September 10, 2011.
Location
CCH Congress Center Hamburg and Expo Hall H, Am Dammtor / Marseiller Straße 1, 20355 Hamburg/Germany

Information
The conference will take place as a discussion event. The names of the lecturers are followed by an asterisk. The language of the ITSC is English. All other conferences at DVS Congress will be held in German.

All ITSC registrants are allowed to take part in the complete program of DVS Congress and DVS Expo (depending on the ticket you book).

Interested ITSC attendees can also participate in the 64th DVS Annual Assembly, Monday, September 26, 2011, 15:30, CCH Hall 6 (free of charge).

Complete Registration includes:
- 3-Day Technical Conference including all conferences September 27 – 29, 2011
- 3-Day Exposition
- General Opening of DVS Congress and DVS Expo September 26, 2011, 18:00
- Welcoming Party DVS Congress and DVS Expo September 26, 2011, 19:00
- Exhibitor Reception September 27, 2011, 17:30
- ITSC Poster Session Evening September 28, 2011, 17:30-19:30
- USB stick with manuscripts of all conferences of DVS Congress
- Coffee Breaks

One-Day Ticket possible
REGISTRATION

Advance Registration

E-mail, fax
Send your complete registration form to:
DVS – German Welding Society
P.O. Box 10 19 65
40010 Düsseldorf, Germany
phone +49 (0) 211 1591-302/-303
fax +49 (0) 211 1591-300
e-mail tagungen@dvs-hg.de

Online
You can also use the online registration:
www.dvs-congress.de/itsc2011

All information and details on the ITSC 2011 are on the website:
www.dvs-congress.de/itsc2011

Registration received without payment will not be processed. If your registration form and payment have not been received by DVS by September 10, 2011 you have to pay a late registration fee of EUR 60. This applies also to on-site registration.

A confirmation will be faxed to you within 10 business days of receiving your registration and payment.

Payment

By credit transfer:
DVS – German Welding Society
Commerzbank AG, Düsseldorf
account no. 212 601 100
bank sorting code 300 800 00
IBAN-code: DE82 3008 0000 0212 6011 00
Swift-code: DRESDEFF300

Any banking charges which may be incurred will be borne by the attendees. Keyword for credit transfer (please do not forget): ITSC 2011, name of registrant

By credit card:
MasterCard, Visa (accepted)

Cancellations

Cancellations must be in writing to the DVS. In case of cancellation after September 10, 2011 DVS will take a processing fee of EUR 70.

On-Site Registration and Check In at the Conference Desk

Registered attendees should check in and pick up their conference documents at the conference desk. The conference desk is located in the CCH Foyer (ground floor), phone +49 (0) 40 3569-5300

The Conference Desk is open from:
September 26, 2011 11:00-18:30
September 27, 2011 07:30-17:00
September 28, 2011 07:30-17:00
September 29, 2011 07:30-17:00
EVENT DOCUMENTS

Expo Guide
You will find a catalogue (free of charge) with all information about DVS Expo (exhibitor information, contacts, booth numbers) at the booth of DVS Media in Expo Hall H and at the registration desk in the foyer.

USB stick
The USB stick with manuscripts of all conferences of DVS Congress will be produced in advance with illustrations and tables. You will receive it at your check in. Additional USB sticks as well as a printed version of each conference proceedings (ITSC: abstract book with CD) can be bought at the desk of DVS Media in Hamburg. Sales of the USB sticks and the proceedings in the name and to the account of the DVS Media.

List of Registrants
All attendees who have registered until September 10, 2011 will be listed. You can get this list with your conference documents.

TRANSPORTATION

By Plane and S-Bahn
From Hamburg Airport, 69 airlines fly directly to 18 national and 98 international destinations. It is situated to the north of the city in Fuhlsbüttel. The CCH – Congress Center Hamburg can be reached from here by S-Bahn (S1) and taxi. The journey time to CCH by car is about 20 minutes, by public transport about 25 minutes. For more information: http://www.cch.de/en/visit/travel-and-accommodation/

By Car
You can use the CCH garage (EUR 14/day).

Special Offer “Deutsche Bahn”
To the DVS Congress as well as to the DVS Expo and the ITSC 2011 by rail as from EUR 99

With the offer made by Messe Essen and its partners, DVS and Deutsche Bahn, you can save on your participation in the DVS Congress as well as in the DVS Expo and the International Thermal Spray Conference and Exposition (ITSC)! Take up this offer and profit from attractive prices and conditions.

The price of your event ticket for the return journey* to Hamburg:
• 2nd class: EUR 99
• 1st class: EUR 159

Your ticket will be valid for the travel period from September 24 to October 1, 2011.

Book your trip by telephone at the service number +49 (0) 1805 311153** with the keywords “DVS Congress”, “DVS Expo” or “ITSC” and have your credit card ready for payment.

Your price advantages compared with the normal price in the 2nd class***:

<table>
<thead>
<tr>
<th>For example, on the route (return journey)</th>
<th>Normal price</th>
<th>Price of the event ticket</th>
<th>Price advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munich - Hamburg</td>
<td>EUR 258</td>
<td>EUR 99</td>
<td>EUR 159</td>
</tr>
<tr>
<td>Frankfurt - Hamburg</td>
<td>EUR 218</td>
<td>EUR 99</td>
<td>EUR 119</td>
</tr>
<tr>
<td>Düsseldorf - Hamburg</td>
<td>EUR 168</td>
<td>EUR 99</td>
<td>EUR 69</td>
</tr>
<tr>
<td>Berlin - Hamburg</td>
<td>EUR 140</td>
<td>EUR 99</td>
<td>EUR 41</td>
</tr>
</tbody>
</table>

* Advanced booking period: min. 3 days. Valid for just one train and on sale while stocks last. Exchange and refund - before the 1st day of validity: EUR 15 and as from the 1st day of validity: excluded. Fully flexible tickets (valid for more than one train) for travelling on Monday to Thursday are also available at a surcharge of EUR 20.

** The hotline can be reached from 08:00 to 21:00 on Monday to Saturday. The telephone costs amount to EUR 0.14 per minute from the German landline network and to max. EUR 0.42 per minute from the mobile phone networks.

*** Subject to price changes. Information without guarantee.
CATERING

Coffee Breaks, Expo Hall H
During the coffee breaks (not during lunch break) coffee and tea will be served free of charge.

Restaurant Facilities, Expo Hall H
There are several sales stalls in the Expo Hall H.

TIPS FOR GERMANY

Passports and Visas
All foreign visitors entering Germany must have a valid passport. For detailed information about visas, please contact your nearest German Embassy or Consulate.

Currency
EURO (EUR) is the currency of Germany. Foreign currencies can be exchanged at the banks and in the major hotels.

Electricity
The voltage in Germany is 230 volts. Travellers are advised to bring a power converter and an adapter.

Time
CET (Central European Time)

Hamburg Information
If you want more information about Hamburg you can contact: http://english.hamburg.de/
HOTEL INFORMATION

Hotel reservation can be made by filling in the enclosed registration form. Please return it to

INTERPLAN AG Büro Hamburg
Kaiser-Wilhelm-Str. 93
20355 Hamburg/Germany
phone +49 (0) 40 3250 9230
fax +49 (0) 40 3250 9244
e-mail dvs11@interplan.de

Online-registration:
http://interplan.de/reg/2011/hhdvs11

A hotel list is available.

We recommend the Radisson Blu Hotel (4 star) next to the CCH as the Headquarter Hotel for ITSC 2011!

HOTEL LIST

[Map showing hotel locations with numbers from 1 to 21]
<table>
<thead>
<tr>
<th>5 stars hotels</th>
<th>single room</th>
<th>double room</th>
<th>breakfast</th>
<th>location / public transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAST Hotel Hamburg</td>
<td>EUR 195</td>
<td>---</td>
<td>incl.</td>
<td>Bus 112 or 36 St. Pauli → Stephansplatz (incl. walk 20 min. to CCH)</td>
</tr>
<tr>
<td>Grand Elysée Hotel Rothenbaumchaussee 10</td>
<td>EUR 220</td>
<td>EUR 240</td>
<td>EUR 20</td>
<td>5 min. walk to CCH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4 stars hotels</th>
<th>single room</th>
<th>double room</th>
<th>breakfast</th>
<th>location / public transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambassador</td>
<td>EUR 99</td>
<td>EUR 149</td>
<td>EUR 14</td>
<td>S21 Berliner Tor → Dammtor (incl. walk 15 min. to CCH)</td>
</tr>
<tr>
<td>Baseler Hof</td>
<td>EUR 99</td>
<td>EUR 145</td>
<td>incl.</td>
<td>5 min. walk to CCH</td>
</tr>
<tr>
<td>Empire Riverside</td>
<td>EUR 189</td>
<td>EUR 189</td>
<td>EUR 18</td>
<td>Bus 112 St. Pauli Hafenstr. → Stephansplatz (incl. walk 20 min. to CCH)</td>
</tr>
<tr>
<td>InterCity Hauptbahnhof</td>
<td>EUR 163</td>
<td>EUR 193</td>
<td>incl.</td>
<td>Bus 112 Ferdinandstr. → Stephansplatz (incl. walk 15 min. to CCH)</td>
</tr>
<tr>
<td>Maritim Hotel Reichshof Kirchenallee 34 - 36</td>
<td>EUR 172</td>
<td>EUR 214</td>
<td>incl.</td>
<td>S31 / S21 main station → Dammtor (incl. walk 10 min. to CCH)</td>
</tr>
<tr>
<td>Mercure Hamburg City</td>
<td>EUR 129</td>
<td>EUR 129</td>
<td>EUR 20</td>
<td>S31 Hammelbrook → Dammtor (incl. walk 20 min. to CCH)</td>
</tr>
<tr>
<td>Mövenpick Hotel Sternschanze 6</td>
<td>EUR 180</td>
<td>EUR 200</td>
<td>incl.</td>
<td>10 – 15 min. walk to CCH</td>
</tr>
<tr>
<td>NH Hamburg City Feldstr. 58</td>
<td>EUR 159</td>
<td>EUR 159</td>
<td>EUR 16</td>
<td>10 – 15 min. walk to CCH</td>
</tr>
<tr>
<td>NH Norge Schäferkampsallee 49</td>
<td>EUR 149</td>
<td>EUR 149</td>
<td>EUR 16</td>
<td>Bus 4 Schlump → Dammtor (incl. walk 20 min. to CCH)</td>
</tr>
<tr>
<td>Radisson Blu</td>
<td>EUR 265</td>
<td>EUR 285</td>
<td>incl.</td>
<td>next to CCH</td>
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</table>

<table>
<thead>
<tr>
<th>3 stars hotels</th>
<th>single room</th>
<th>double room</th>
<th>breakfast</th>
<th>location / public transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alster-Hof</td>
<td>EUR 95</td>
<td>EUR 125</td>
<td>incl.</td>
<td>5 min. walk to CCH</td>
</tr>
<tr>
<td>Grand City Hotel Berlin</td>
<td>EUR 110</td>
<td>EUR 115</td>
<td>EUR 15</td>
<td>S21 Berliner Tor → Dammtor (incl. walk 15 min. to CCH)</td>
</tr>
<tr>
<td>Hotel Hafen Hamburg</td>
<td>EUR 160</td>
<td>EUR 160</td>
<td>EUR 16</td>
<td>Bus 112 Landungsbrücken → Stephansplatz (incl. walk 20 min. to CCH)</td>
</tr>
<tr>
<td>Ibis Hamburg Alster Holzdamm 4-6</td>
<td>EUR 119</td>
<td>EUR 149</td>
<td>incl.</td>
<td>Bus 112 Ferdinandstr. → Stephansplatz (incl. walk 15 min. to CCH)</td>
</tr>
<tr>
<td>Mercure an der Messe Schröderstiftstr. 3</td>
<td>EUR 160</td>
<td>EUR 188</td>
<td>incl.</td>
<td>5-10 min. walk to CCH</td>
</tr>
<tr>
<td>Motel One Hamburg-Alster*</td>
<td>EUR 76,50</td>
<td>EUR 99</td>
<td>incl.</td>
<td>U1 Lohmühlenstraße → Stephansplatz (incl. walk 15 – 20 min. to CCH)</td>
</tr>
<tr>
<td>Suite Novotel Hamburg City Lübeckertordamm 2</td>
<td>EUR 109</td>
<td>EUR 109</td>
<td>EUR 13</td>
<td>U1 Lohmühlenstraße → Stephansplatz (incl. walk 15 – 20 min. to CCH)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 stars hotels</th>
<th>single room</th>
<th>double room</th>
<th>breakfast</th>
<th>location / public transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam Moorweidenstr. 34</td>
<td>EUR 119</td>
<td>EUR 129</td>
<td>EUR 8</td>
<td>5 min. walk to CCH</td>
</tr>
<tr>
<td>Apartment-Hotel Hamburg Hamm Borstelmannsweg 133</td>
<td>EUR 86</td>
<td>EUR 102</td>
<td>incl.</td>
<td>Bus 112 → S Hammelbrook, S31 → Dammtor (incl. walk 25 min. to CCH)</td>
</tr>
<tr>
<td>Bellmoor Moorweidenstr. 34</td>
<td>EUR 95</td>
<td>EUR 140</td>
<td>incl.</td>
<td>5 min. walk to CCH</td>
</tr>
<tr>
<td>Hotel St. Annen Annenstr. 5</td>
<td>EUR 98</td>
<td>EUR 125</td>
<td>incl.</td>
<td>20 – 25 min. walk to CCH</td>
</tr>
</tbody>
</table>

All rates per room and night including German VAT. Breakfast per person and day. Descriptions on the hotels can be found on the congress website www.dvs-congress.de/itsc2011. *Bookings at the Motel One Hamburg-Alster are only possible with credit card guarantee.
ACTING EXPERTS
PRESENTING AUTHORS, POSTER PRESENTERS AND SESSION CHAIRMEN ITSC 2011

A
Abdulgader, M. University of Dortmund, Dortmund/Germany
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Ageorges, H. University of Limoges, Limoges/France
Aghaee, M. Isfahan University, Isfahan/Iran
 Aguier, L. Technological Federal University of Paraná, Curitiba/Brazil
Akgün Kayral, S. Celal Bayar University, Manisa/Turkey
Akuh, M. Air Products GmbH, Hattingen/Germany
Alamara, K. Swinburne University of Technology, Melbourne/Australia
Alaya, M. University of Limoges, Limoges/France
Alishir, F. Tarbiat Modares University, Tehran/Iran
Altun, O. Sakarya University, Sakarya/Turkey
Altuncu, E. Kocaeli University, Kocaeli/Turkey
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Arai, M. Central Research Institute of Electric Power Industry, Kanagawa/Japan
Armada, S. SINTEF, Trondheim/Norway
Arnold, J. German Aerospace Center, Stuttgart/Germany
Assaad, J. University of Ottawa, Ottawa/Canada
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Azarni, F. North Dakota State University, Fargo/United States of America

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Bala, N. Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib/India
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Bu, H. School of Materials Sciences and Engineering, Shanghai/P.R. China

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Chavan, N. International Advanced Research Center for Powder, Hyderabad/India
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Cheng-Sheng, Y. China Steel Corporation, Kaohsiung/Taiwan
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Chivel, Y. Institute of Applied Physical Problems, Minsk/Belarus
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Trache, R. Fraunhofer Institute IWS, Dresden/Germany
Trenkle, F. obz innovation gmbh, Bad Krozingen/Germany
Trentin, A. Associazione CIVEN, Venice/Italy
Trice, R. Purdue University, West Lafayette/United States of America
Tyrin, Y. E.O. Paton Electric Welding Institute, Kiev/Ukraine

V
Valarezo, A. University San Francisco de Quito, Quito/Ecuador
Vardelle, A. University of Limoges, Limoges/France
Varis, T. VTT Technical Research Centre of Finland, Espoo/Finland
Vaßen, R. Forschungszentrum Jülich GmbH, Jülich/Germany
Verpoort, C. Ford Research & Advanced Engineering Europe, Aachen/Germany
Vert, R. CEA, DAM, Monts/France
Vezzù, S. Associazione CIVEN, Venice/Italy
Vliemova, M. Institute of Plasma Physics, Prague/Czech Republic
Villa, M. CPT Thermal Spray Centre, Barcelona/Spain
Villafuerte, J. Centerline Ltd., Windsor/Canada
Vuoristo, P. Tampere University of Technology, Tampere/Finland

W
Wang, H. JiuJiang Key Laboratory for Green Remanufacturing, JiuJiang/P.R. China
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Wang, Y. National Research Council Canada, Boucherville/Canada
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Wasserman, C. TLS Terlab Surface Group SA, Lausanne/Switzerland
Watanabe, M. National Institute for Materials Science, Ibaraki/Japan
Weissenfels, G. IBEDA Sicherheitsgeräte und Gastechnik GmbH & Co. KG, Neustadt/Germany
Wielage, B. Chemnitz University of Technology, Chemnitz/Germany
Wilden, J. Technical University of Berlin, Berlin/Germany
Wilken, J. Carpenter Powder Products GmbH, Düsseldorf/Germany
Wilson, S. Sulzer Metco AG (Switzerland), Wohlen/Switzerland
Winkler, R. Chemnitz University of Technology, Chemnitz/Germany

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X
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Xu, S.

Y
Yamada, M.
Yandouzi, M.
Yang, D.
Yang, G.
Yang, H.
Yıldırım, S.
Yin, S.
Yin, Z.
Yong, W.
Yu, M.

Z
Zabransky, T.
Zahalka, F.
Zeng, Z.
Zhang, N.
Zhong, X.
Zhong, Y.
Zhou, K.
Zhou, L.
Zhou, Z.
Zierhut, J.
Zimmermann, S.
Zimmermann, S.
Zórawski, W.
Zotov, N.
Zou, Y.
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