



Fraunhofer Institut
Chemische Technologie



8th International Symposium
and Exhibition on Sophisticated
Car Occupant Safety Systems

Karlsruhe, Germany
Congress Center

2006,
December 4 – December 6



8th International Symposium and Exhibition on Sophisticated Car Occupant Safety Systems

Program Committee

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Welcome

Sophisticated car occupant systems like airbags and belt restraint systems are the most increasing safety devices in recent times. Although the benefits are well-known by experts, a need of close cooperation between all interested parties is undoubtedly necessary.

The 8th Airbag Symposium in 2006 will again be the market place for engineers, scientists, legislators, managers and marketing people to exchange information, to get and to improve contacts, to stimulate further progress and to promote advanced car passenger safety systems on a neutral stage.

The Fraunhofer Institute for Chemical Technology ICT is the leading independent research and development facility on airbag technology and testing. As a division of Fraunhofer, Europe's largest organization for applied and contract research Fraunhofer ICT offers a unique and neutral event for automobil industry suppliers and public authorities.

**Welcome again in Karlsruhe,
Germany, meeting the world of
Airbag 2006.**

Dr.-Ing. Karl-Friedrich Ziegahn
Chairman of the Symposium



Fraunhofer Institut
Chemische Technologie

Registration

Please return the enclosed registration form. You will then receive an **invoice**.

Registration fees (including proceedings, coffee breaks, lunch, evening receptions), depending on arrival of the registration at ICT

*** up to November 13, 2006**

EURO 950,-- (incl. 16% VAT)

*** up to November 24, 2006**

EURO 1.050,-- (incl. 16% VAT)

Participation cannot be guaranteed for registrations arriving after November 24, 2006.

A fee of EURO 500,-- will be charged for cancellations after November 24, 2006. No-shows will be charged with the complete fee.

Accommodation

will be managed by **HORE Hotel Reservation**, Weingartener Str. 70, D-76229 Karlsruhe, Phone (07 21) 48 23 56, Fax (07 21) 48 26 14 e-mail horehotelreservation@t-online.de An application form is enclosed.

Conference Office

located in the **foyer of the Stadthalle** and may be reached **from December 4 to December 6** by

Phone (07 21) 37 20 - 44 43

or (07 21) 37 20 - 44 41

Fax (07 21) 37 20 - 59 50

(International access: +49)

Check in / Welcome Reception

Please check in at the conference office on **Monday, December 4 between 13.00 and 20.00 h.** All participants are cordially invited to the **Welcome Reception** in the foyer of the Stadthalle on **Monday, December 4, 18.00 - 20.30 h.**

Conference Languages

English, German - **Simultaneous Interpretation**

Proceedings

One copy of the proceedings is **included** in the registration fee.

(Additional copies EURO 150,--, subscription price during the Symposium EURO 130,--)



EXHIBITORS
(registered up to publishing date)

ACS INDUSTRIES, INC.	Woonsocket, USA
ALT B.V. (A Sentega Group Company)	Utrecht, NL
Airbag Disposal & Recycling Services LTD.	Hinckley, Leicestershire, UK
Autoliv B.V. & Co KG	Dachau, D
Berstscheiben Schlesinger GmbH	Schalksmühle, D
Continental Automotive Systems Division	Nürnberg/Ingolstadt, D
DaimlerChrysler AG	Sindelfingen, D
Davey Bickford	Héry, F
DELPHI Delco Electronics Europe GmbH	Wuppertal, D
ELECTROVAC Hacht & Huber GmbH	Salzweg, D
Fraunhofer-Institut für Chemische Technologie ICT	Pfinztal, D
Harris Interactive Automotive & Transportation Research	Rochester, NY, USA
Hirtenberger Automotive Safety GmbH & Co KG	Hirtenberg, A Luxembourg, L
IEE S.A.	
imeco AM GmbH & Co. KG Automotive nonwoven fabric products	Hösbach, D
Infineon Technologies AG	München, D
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iSi Automotive GmbH & Co KG	Wien, A
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LIMESS Messtechnik und Software GmbH	Pforzheim, D
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SIOEN FABRICS S.A.	Mouscron, B
TAKATA-PETRI AG	Aschaffenburg, D
TechnologieRegion Karlsruhe GdB	Karlsruhe, D
TRW Automotive GmbH	Alfdorf, D
TASS (TNO Automotive Safety Solutions)	Delft, NL
Umfotec GmbH	Northeim, D
voestalpine HTI GmbH & Co. KG	Annweiler, D
Zodiac Automotive Division	Pusignan, F



Program

Monday, December 4, 2006

Tuesday, December 5, 2006

Monday, December 4, 2006

- 11.30 – 13.00 **Press Meeting (registered journalists only)**
- 13.00 **Opening of the Exhibition**
- 14.30 – 18.00 **Workshop "Igniter Technique"
Specification and Standardization (Interfaces,
Components, Tests for Reliability)**
(Participation on separate invitation)
- 18.00 – 21.00 **Welcome Reception**
for all participants
(Symposium, Workshop, Exhibition)

Tuesday, December 5, 2006

- Opening Session**
- 09.30 - 09.45 **Welcome and Opening**
K.-F. Ziegahn
Chairman of the Symposium
- 09.45 - 10.05 **Greeting addresses**
- 10.05 - 10.35 **V 1 Key Lecture**
**25 Years of Airbag -
Today's Limits and Future Potential of a Key
Technology**
R. Schöneburg, U. Tschäschke, K.-H. Baumann
DaimlerChrysler AG, Sindelfingen, D
- 10.35 - 11.00 **Coffee Break**



Program

Tuesday, December 5, 2006

1. Session

General Issues

Session Chair: Ulrich Tschäschke

DaimlerChrysler AG, Sindelfingen, D

- | | | |
|---------------|-----|--|
| 11.00 - 11.25 | V 2 | Airbag and Occupant Protection - A View from North America
R. Medford
NHTSA, Washington, USA |
| 11.25 - 11.50 | V 3 | Airbags: Yesterday, Today and Tomorrow
B. O'Neill
(former IHHS) Falls Church, USA |
| 11.50 - 12.15 | V 4 | International Product Liability Law and e-Discovery: An Update
T. Smith
Lungershausen & Smith, Böblingen, D |
| 12.15 - 14.00 | | Lunch Break |
| | | 2. Session |
| | | R&D Challenges |
| | | Session Chair: Alexander Heilig
TRW Automotive GmbH, Alfdorf, D |
| 14.00 - 14.25 | V 5 | Integrated Safety: Linking Active and Passive Safety
S. Nitsche,
Autoliv B.V. & Co.KG, Dachau, D |
| 14.25 - 14.50 | V 6 | Adaptive Restraint Systems - The Restraint Systems of the Future
C. Schramm, F. Fürst, M. van den Hove
AUDI AG, Ingolstadt, D
M. Gonter
Volkswagen AG, Wolfsburg, D |
| 14.50 - 15.15 | V 7 | Potential of Pre-Crash Restraints in Frontal Collisions
T. Wohllebe, M. Gonter, M.-M. Meinecke
Volkswagen AG, Wolfsburg, D |
| 15.15 - 15.40 | V 8 | AIRBAG 200X - How the Largest Technical Community Meeting has influenced R&D
K.-F. Ziegahn
Forschungszentrum FZK, Karlsruhe, D |
| 15.40 | | Coffee Break |

3. Session

Gas Generators

Session Chair: Paul Blauburger

BMW AG, D

- | | | |
|----------------------|-------------|---|
| 16.10 - 16.35 | V 9 | Modelling of Pyrotechnic Pretensioners
K. Elsäßer, R. Kotzschmar, H. Zecha
TRW Automotive GmbH, Alfdorf, D |
| 16.35 - 17.00 | V 10 | Comparison of some Gas Generator Formulations for Application in Airbag Systems
J. Neutz, H. Ebeling, W. Hill, P. Scholz
Fraunhofer ICT, Pfinztal, D,
M. Winterhalder, P. Lehniger
Delphi Occupant Restraint Systems, Fürth, D |
| 17.15 | | Evening Reception
Visit of the Exhibition |



4. Session

Sensor Systems and Electronics

Session Chair: Michael Bischoff

TAKATA PETRI AG, Aschaffenburg, D

08.30 - 08.55 **V 11** **New Architectures in Crash Sensing: Merging Active and Passive Safety Systems with ABplus**
M. Bunse, M. Kröninger, T. Huber
Robert Bosch GmbH, Stuttgart, D

08.55 - 09.20 **V 12** **FMVSS 208 Low-Risk Deployment Certification: Trends and Options**
T. Mousel
IEE S.A., Contern, L

09.20 - 09.45 **V 13** **Active and Passive Safety Integration for Advanced Rollover Protection**
J. Paggel, M. Feser
Siemens AG, Regensburg, D
C. Lauerer, P. Spannaus, T. Brandmeier
FH Ingolstadt IAF, Ingolstadt, D

09.45 - 10.15 **Coffee Break**

5. Session

Development and Simulation

Session Chair: Christian Schramm

Audi AG, Ingolstadt, D

10.15 - 10.40 **V 14** **The Practical and Simulated Development and Delivery of Lower Risk Airbag Systems at Jaguar and Land Rover**
J. Longland, B. Feng, D. Coleman
Jaguar Cars, Whitley, GB

10.40 - 11.05 **V 15** **Optical Sensors for Active and Passive Safety Systems**
T. Görnig
Conti Temic microelectronics GmbH, Ingolstadt, D

11.05 - 11.30 **V 16** **Potential Passenger Restraint System Improvement by the Application of a Multi Surface Airbag**
J. Hoffmann, M. Freisinger
Toyota Gosei Europe NV, Saarbrücken, D
M. Sakamoto, I. Shiga
Toyota Gosei Ltd., Inazawa-City, JAP





Program

Wednesday, December 6, 2006

11.30 - 12.20

6. Session

POSTER

Session Chair: Hans Spies

Ingenieurbüro Spies, Hohenwart, D

12.20

Lunch Break

7. Session

Future of Occupant Protection

Session Chair: Stefan Brock

Autoliv B.V. & Co. KG, Dachau, D

14.00 - 14.25

V 17

Motorcycle Airbag

S. Iijima

Honda R&D Co. Ltd., Asaka-Shi Saitama, JAP

14.25 - 14.50

V 18

Adaptive Car Front End Structure

B. Pipkorn, J. Olsson, Y. Haland

Autoliv Research, Vargarda, SE

14.50 - 15.15

V 19

CAPS - A Question of Milliseconds

M. Fausten, M. Kröninger

Robert Bosch GmbH, Stuttgart, D

15.15 - 15.40

V 20

Advanced Sensor Technology Boosts Passenger Safety to New System Designs

H. Spies, M. Spies

Ingenieurbüro Spies, Hohenwart, D

15.40

Airbag Award

15.50

Closing Remarks

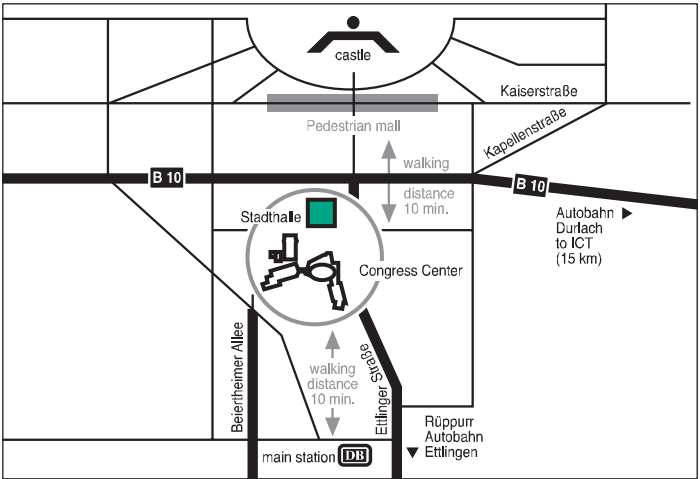
Posters will be presented in the Foyer during the Symposium. A special POSTER SESSION will be held on Wednesday, December 6, 11.30 h - 12.20 h

Chairman:
Hans Spies
Ingenieurbüro Spies, Hohenwart, D

- P 21 Motorcycle Airbag – An Option?**
A. Berg
DEKRA Automobil GmbH, Stuttgart, D
- P 22 Airbag Disposal and Recycling – the Industry Status in the UK**
R. Morris, A. Crooks
MIRA Ltd., Nuneaton, GB
- P 23 Efficient Optimization of Airbags by the Measurement of the Time Resolved Strain Distribution on Airbag Covers**
R. Lichtenberger
LIMESS GmbH, Pforzheim, D
- P 24 Why Control Air-Bags?**
A.F. Charles
ACE Consultancy, Winsford, GB
- P 25 Advanced ESD/EMI Protection of Pyrotechnic Systems**
H.-U. Müller, J.G. Urbanek
Amphenol-Tuchel Electronics GmbH, Heilbronn, D
- P 26 Silicone Coating Materials with Low Friction and Non-Blocking Properties for Airbag**
T. Miyao, A. Yaginuma
Shin-Etsu Chemical Co. Ltd., Annaka City
Gunma, JAP

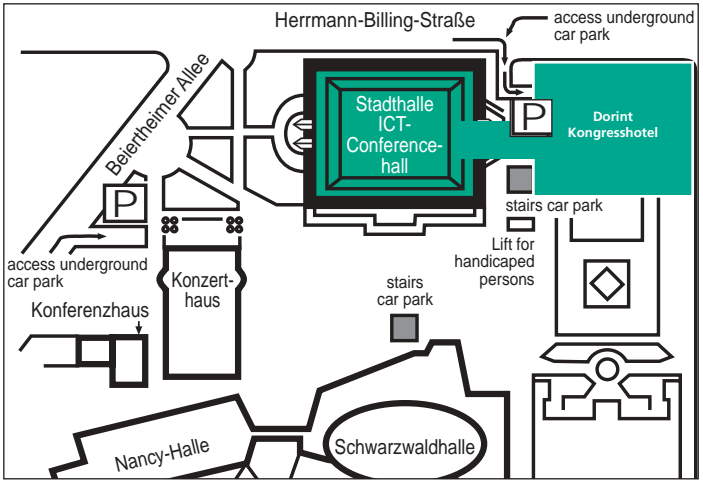
- P 27 A Pyrotechnic Fire Extinguishing System in Vehicles**
L.Y. Yuan, J.P. Wang, C.W. Wong
Chung-Shan Institute of Science and Technology,
Taoyuan, Taiwan, ROC
H.M. Huang
Tung-Nan Institute of Technology, Taipei, Taiwan,
ROC
- P 28 A CAN-BUS-Based Smart Airbag Controller with a Monolithic Smart Igniter**
Sau-Mou Wu, Chien-Chang Huang
Yuan Ze University, Taiwan, ROC
Liang-Yann Yuan, Kuang-Tso Luo
Chung-Shan Institute of Science and Technology,
Taiwan, ROC
- P 29 Innovating Technology for Airbag Cushion's Assembly**
H. Matura, S. Rolland, J.-M. Obadia
Zodiac Automotive, Caudebec les Elbeuf, F
- P 30 Parallax-Free Time-Resolved Radiographic Imaging of High-Speed Events**
S. Nau, P. Helberg, K. Thoma
Fraunhofer EMI, Efringen-Kirchen, D
- P 31 Temperature and Velocity Measurements of Airbag Gas Generator Flows**
T. Kisters, G. Popko, V. Aust
Fraunhofer EMI, Efringen-Kirchen, D
- P 32 Dynamic Tank Test Analysis**
G. Schliecker
Takata-Petri AG, Berlin, D
- P 33 Polymer-Bonded Propellant Approach – from Seat Belt Pretensioners towards Airbag Applications**
H. Andres, J. Rebetez, C. Wagner, A. Skriver,
B. Stucki
Nitrochemie Wimmis AG, Wimmis, CH

- P 34 Inflatable Head Restraint for Side Impact**
J.Y.M. Pan
InnoBrain Technology Co. Ltd., Taipei, Taiwan, ROC
- P 35 Continuous Production of Spherical Ammonium Nitrate Particles**
I. Fuhr, C. Birke, K. Leisinger, W. Reinhard, T. Heintz
Fraunhofer ICT, Pfinztal, D
- P 36 Comparison of Inflatable Curtain Coatings, Silicone, Polyurethane, Silicone Co-Polymers**
G.D. Budden
Dow Corning Ltd., Barry, GB
W.R. Blackwood
Dow Corning Corp., Midland, USA
- P 37 Vision Processing to Enhance Automotive Safety**
C. Cordoba
NEC Electronics, Paris, F



Karlsruhe is located some 120 km (80 miles) south of Frankfurt/Frankfurt International Airport just beside the Autobahn A5 and also connected to Frankfurt via Express train »Intercity« or ICE.

*Convenient airports are also:
Strasbourg (F) (approx. 100 km) and Stuttgart (D) (approx. 90 km)*



By tram:

from the

Linie / route

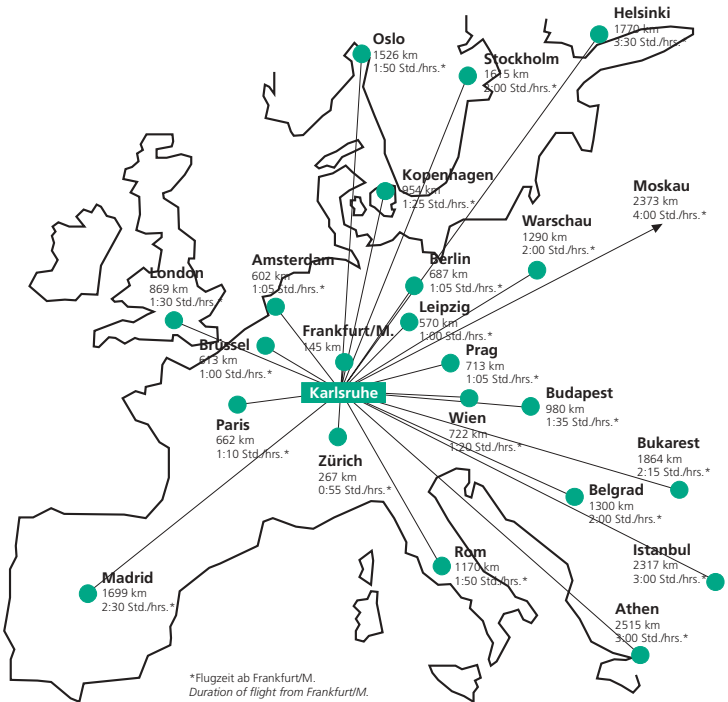
- Main station (Hauptbahnhof) S 1, S 4, S 11, 2
- City center (Stadtmitte) S 1, S 4, S 11, 2
- »Durlacher Tor« S 4, 2

By car:

Follow direction signs to the »Kongreßzentrum«



Karlsruhe is located approximately 1 hour south of Frankfurt Airport via Expressway (Autobahn) or Express Train (IC or ICE).



Conference Management

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Exhibition Management

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