

The complete Conference Program

Tuesday, June 8, 2010

- 9.00 a.m. Welcome and Opening of the
9th International Symposium on Combustion Diagnostics
Prof. H. List
AVL List GmbH, Graz, Austria
Prof. Dr. G. Hohenberg
IVD Prof. Hohenberg GmbH, Graz, Austria
- Section 1.1*
High Performance Engines
Chairman: Prof. Dr. G. Hohenberg
IVD Prof. Hohenberg GmbH, Graz, Austria
- 9.15 a.m. Application of Methodology to Petrol Engine Thermodynamics Development
from an OEM's Point of View
P. Langen
BMW AG, Munich
- 9.45 a.m. Influence of Stroke-Bore Ratio and Intake Port Geometry on Charge Motion
and Mixture Preparation of GDI-Engines
Dr. S. Schmidt, Prof. Dr. R. Kirchberger, A. Trattner, M. Abart, Prof. Dr. H. Eichlseder,
O. Schögl
*Institut für Verbrennungskraftmaschinen und Thermodynamik,
Technische Universität Graz, Austria*
- 10.15 a.m. Combustion Analysis in Small, High Speed Two-Stroke SI-Engines
Dr. T. Gegg, Dr. A. Kölmel
Andreas Stihl AG & Co. KG, Waiblingen
K. Beck, Prof. Dr. U. Spicher
Karlsruher Institut für Technologie (KIT) – Institut für Kolbenmaschinen, Karlsruhe
- 10.45 a.m. Coffee Break
- Section 1.2*
Measurement technologies
Chairman: Prof. Dr. G. P. Merker – *University of Hannover*
- 11.30 a.m. Cold-start optimisation with ethanol fuels on a PFI-engine using high resolution
indicating and exhaust gas measurement technology beginning from the first
engine cycle
F. Holub, Prof. Dr. B. Geringer, Dr. P. Hofmann
Institut für Fahrzeugantriebe & Automobiltechnik, Technische Universität Wien, Austria
A. Posselt
Robert Bosch GmbH, Stuttgart
- 12.00 p.m. Analysis of the Start-Up Sequence of a DI-SI Internal Combustion Engine
for Start Stop System Optimization
Dr. S. Müller, Prof. Dr. techn. C. Beidl
TU Darmstadt, Institut für Verbrennungskraftmaschinen, Darmstadt
- 12.30 p.m. Stoichiometric full load operation of SI engines –
development techniques to exploit thermal engine stability
Dr. E. Winklhofer, Dr. P. Kapus, Dr. H. Philipp
AVL List GmbH, Graz, Austria
- 1.00 p.m. Lunch
- Section 1.3*
Gasoline-DI
Chairman: Prof. Dr. U. Spicher
Universität Karlsruhe (TH)
- 2.30 p.m. Identification of sources of ignition instabilities in a spray-guided
SIDI engine using high-speed flow and fuel imaging
Prof. Dr. V. Sick, B. Peterson
Department of Mechanical Engineering, University of Michigan, Ann Arbor, MI, USA
- 3.00 p.m. Stratified Ignition Processes in Spray-Guided SIDI Engines
M. C. Drake, T. D. Fansler
General Motors Research and Development Center, Warren, MI, USA
K. H. Peterson
University of Michigan, Ann Arbor, MI, USA
- 3.30 p.m. Reduction of Soot Emissions by Increasing Injection Pressure up to 1000 bar
in a DISI Engine in Stratified Operation
S. Buri, C. Dahnz, Dr. H. Kubach, Prof. Dr. U. Spicher
Karlsruher Institut für Technologie (KIT) – Institut für Kolbenmaschinen, Karlsruhe
- 4.00 p.m. Coffee Break
- Section 1.4*
Variable Valve Train Gasoline
Chairman: Prof. Dr. H. Eichlseder
Technische Universität Graz, Austria
- 4.45 p.m. TVDI Fuel Efficiency Technology for Worldwide Operation:
Injector Design and Combustion System Development
A. Storch, Dr. A. Kufferath, U. Fischer – *Robert Bosch GmbH, Stuttgart*
Dr. M. Selder, Dr. E. Schünemann – *BMW Group, München*
- 5.15 p.m. Model-based approach for Control and Calibration on MultiAir Engine
F. Borean, M. Lucatello, C. Venezia, F. Gustinetti
FTP Research & Technologies, Orbassano, Italy
- 5.45 p.m. Potentials of the TVDI Combustion System for Achieving Lowest Exhaust Gas Emission
Standards
M. Miklautschitsch, Dr. J. Becker, R. Eigenschenk, E. Schünemann
BMW Group, München
- 6.30 p.m. Bus Transfer to Evening Event
Departure from the front of the Kurhaus
- 7.00 p.m. Cocktail-Reception followed by Dinner

Approx.

11.00 p.m. Return of buses

* Discussion after each presentation

Wednesday, June 9, 2010

Section 2.1*

Start phenomenon

Chairman: Prof. Dr. C. Schwarz

BMW Group, München

9.00 a.m. **Analysis of Engine Start-Stop Events by In-Cylinder Pressure Measurement**

Dr. A. Bertola, J. Stadler, J. Höwing
Kistler Instrumente AG, Winterthur, Switzerland
D. Boland, H.-J. Berner, Dr. U. Philipp
Forschungsinstitut für Kraftfahrwesen und Fahrzeugmotoren, Stuttgart

9.30 a.m. **Advanced injection strategies for modern passenger car diesel engines under cold start conditions**

Dr. O. Kastner, Dr. F. Atzler, A. Weigand, Dr. R. Rotondi
Continental Automotive GmbH, Regensburg

10.00 a.m. **Analysis of the soot formation with optical measurement and CFD simulation on a turbocharged gasoline engine with direct injection**

A. Kaden, Dr. F. Altenschmidt, H. Gildein, Dr. E. Kraus, U. Schaupp, H. Prilop
Daimler AG, Stuttgart

10.30 a.m. Coffee Break

Section 2.2*

Diesel Combustion

Chairman: Dr. K. Jogun

Daimler AG, Stuttgart

11.15 a.m. **Combustion and Emissions Modelling on Heavy Duty Engines of Daimler AG**

Dr. P. Kožuch, Dr. K. Maderthaner
Daimler AG, Truck Group, Stuttgart
Dr. M. Grill, A. Schmid
FKFS Forschungsinstitut für Kraftfahrwesen und Fahrzeugmotoren, Stuttgart

11.45 a.m. **Effects of Reduced Spray Hole Diameters on Mixture Formation, Combustion and Emissions of a Diesel Engine**

Dr. S.-F. Haas, K. Gabel, I. Kutschera
Audi AG, Neckarsulm
S. Kuhnert, Prof. Dr. U. Spicher
Karlsruher Institut für Technologie (KIT) – Institut für Kolbenmaschinen, Karlsruhe

12.15 p.m. **Elimination of Sensors in the Gas-Exchange Path of Combustion Engines using the Cylinder Pressure Signal of the Pressure Sensor Glow Plug**

Dr. W. Wenzel, Dr. M. Becker
BorgWarner Engine Systems Group, Ludwigsburg
Dr. B. Last, Dr. O. Toedter, D. Kienzle
BorgWarner Beru Systems GmbH, Ludwigsburg

12.45 p.m. Lunch

Section 2.3*

Combustion anomalies

Chairman: Dr. R. Teichmann

AVL List GmbH, Graz, Austria

2.15 p.m. **Methodology for the Improvement of Engine Knock in Large Gas Engines**

P. Christiner, Dr. G. Kogler, Prof. Dr. A. Wimmer
Large Engines Center der Technischen Universität Graz, Graz, Austria
Dr. T. Jauk
Institut für Verbrennungskraftmaschinen und Thermodynamik,
Technische Universität Graz, Graz, Austria

2.45 p.m. **Higher specific load – increasing knock risk
Evaluation of measures for knock reduction using multiple pressure indication**

A. Hettinger, Dr. A. Kulzer
Robert Bosch GmbH, Schwieberdingen
Prof. Dr. U. Spicher
Karlsruher Institut für Technologie (KIT) – Institut für Kolbenmaschinen, Karlsruhe

3.15 p.m. **Automated measurement strategy for generation of high quality data in the model based knock calibration process**

R. Leithgöb, R. Vögl
AVL List GmbH, Graz, Austria

3.45 p.m. **Status and optimization needs of CFD and optical diagnostics in transparent engines for development of state of the art combustion concepts**

Dr. C. Krüger, Dr. F. Otto
Daimler AG, Stuttgart
Prof. Dr. G. P. Merker
Leibniz Universität Hannover

4.15 p.m. **Prize-Giving Ceremony and Closing Remarks**

Prof. Dr. G. Hohenberg
IVD Prof. Hohenberg GmbH, Graz, Austria
D. Zuther
AVL Deutschland GmbH, Mainz-Kastel

4.45 p.m. **End of conference**

* Discussion after each presentation

Conference Office in Kurhaus Baden-Baden

Phone 0170 9080121

Tuesday, June 8, 2010

Open from 8.00 a.m. until 6.30 p.m.

Wednesday, June 9, 2010

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