

International Conference

Transport Fuels: Crucial Factor and Driver towards Sustainable Mobility

R&D-projects, research institutions and
funding programs in Austria, Europe and
global cooperation within the
International Energy Agency

Conference program

May 28th 2008

Federal Ministry for Transport, Innovation and Technology
Radetzkystraße 2, A-1030 Wien, Großer Festsaal



Rethinking Propulsion.

Date

Wednesday, May 28th 2008
9:00 am to 05:00 pm

Venue

Federal Ministry for Transport, Innovation and Technology
Radetzkystraße 2, A-1030 Wien, Großer Festsaal1

Organizer

Austrian Agency for Alternative Propulsion Systems in cooperation with the
Austrian Federal Ministry for Transport, Innovation and Technology - BMVIT

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Program

Plenary Session

- 09:00 Opening address by Ingolf Schädler
Head of Division Innovation at the Austrian Federal Ministry
for Transport, Innovation and Technology (BMVIT)
- 09:30 Austria's Transport Fuel Strategy based on R&D
cooperation between industry, research institutions and
technology policy in the Austrian Agency for Alternative
Propulsion Systems.
Andreas Dorda – BMVIT/A3PS
- 10:00 Conclusions of the Strategic Research Agenda of the
Technology Platform ERTRAC on the future of transport
fuels and corresponding R&D activities at VW.
Wolfgang Steiger – VW, Chairman EU-TP ERTRAC
- 10:30 The European Biofuels Technology Platform Strategic
Research Agenda: main conclusions & focus on fuels
distribution and end use R&D priorities.
Veronique Hervouet – Chairwoman EU-TP Biofuels
- 11:00 R&D-Cooperation in the International Energy Agency
Implementing Agreement “Advanced Motor Fuels” and
corresponding R&D activities at the US-Department of
Energy.
Stephen Goguen – US-DOE, Chairman IEA Advanced
Motor Fuels

11:30 – 11:45 Break

Transport Fuels

Chair: Manfred Klell (HyCentA) / Stefan Herndler (A3PS)

- 11:45 Alternative transport fuels: Market overview and challenges
for the fuel industry
Walter Böhme; OMV AG
- 12:00 Exceptionally Low CO₂ Emissions – Direct (Bio)-Gas
Injection in a Hybrid Powertrain Engine
Harald Stütz; AVL List

12:15 – 13:30 Lunch

Biofuels

Chair: Bernhard Geringer (TU Vienna – IVK) / Heimo Aichmaier (BMVIT/A3PS)

- 13:30 **Biogas as a key technology within Biofuels oriented Biorefinery concepts**
Thomas Amon; Vienna University of Natural Resources and Applied Life Sciences Department of Sustainable Agricultural Systems
- 13:45 **Production of bio-methane and bio-hydrogen from organic by-products using fermentation technology and their applicability as transport fuels**
Werner Ahrer; PROFACTOR GmbH
- 14:00 **Biofuels and Biorefineries at Joanneum Research**
Josef Spitzer; Joanneum Research
- 14:15 **Limits and Opportunities of Transport Biofuels in Austria**
Manfred Wörgetter; FJ-BLT Wieselburg
- 14:30 **Research Activities in the Field of Second Generation Biofuels, Vienna University of Technology – Institute of Chemical Engineering**
Hermann Hofbauer; Vienna University of Technology – Institute of Chemical Engineering

14:45 – 15:15 Break

Alternative Fuels in the ICE

Chair: Werner Ahrer (Profactor) / Bernhard Egger (A3PS)

- 15:15 **Hydrogen, Natural Gas and H2NG mixtures in the ICE**
Manfred Klell; Graz University of Technology – Institute for
Internal Combustion Engines and Thermodynamics
- 15:30 **Alternative Fuels for a Sustainable Mobility**
Peter Hofmann; Vienna University of Technology – Institute
for Internal Combustion Engines and Automotive
Engineering

15:45 Panel Discussion

Chair: Andreas Dorda – BMVIT/A3PS

International trends of transport fuels

Participants:

Wolfgang Steiger	(VW, Chairman EU-TP ERTRAC)
Veronique Hervouet	(Chairwoman EU-TP Biofuels)
Stephen Goguen	(US-DOE, Chairman IEA-AMF)

17:00 End

Speakers

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Andreas Dorda	A3PS / BMVIT
Wolfgang Steiger	VW, Chairman EU-TP ERTRAC
Veronique Hervouet	Chairwoman EU-TP Biofuels
Stephen Gogue	U.S. Department of Energy, Chairman IEA-AMF
Walter Böhme	OMV AG
Harald Stütz	AVL List GmbH
Thomas Amon	Vienna University of Natural Resources and Applied Life Sciences Department of Sustainable Agricultural Systems
Werner Ahrer	PROFACTOR GmbH
Josef Spitzer	Joanneum Research
Manfred Wörgetter	FJ-BLT Wieselburg
Hermann Hofbauer	Vienna University of Technology – Institute of Chemical Engineering
Manfred Klell	Graz University of Technology – Institute for Internal Combustion Engines and Thermodynamics
Peter Hofmann	Vienna University of Technology – Institute for Internal Combustion Engines and Automotive Engineering

Dr. Andreas Dorda

A3PS - Austrian Agency for Alternative Propulsion Systems and
Austrian Federal Ministry for Transport, Innovation and Technology



- Born Dec. 25, 1959
- Studies in Chemistry at University of Vienna (Master 1987, PhD 1992).
- Post Doc at University of California in Berkeley in the field of battery research.
- Assistant professor at the Institute for Physical Chemistry at the University of Vienna.
- Research in the chemical and pharmaceutical industry in France, Switzerland, Argentina and Austria.
- 1992: Project "Technical description and ecological assessment of electric vehicles" at the Austrian Academy of Science.
- 1992-1994: Project leader for the Austrian National Environmental Plan at the Ministry for Environment.
- Since 1994: responsible for R&D funding programs for transport technologies as deputy Head of Unit at the Austrian Ministry for Transport, Innovation and Technology.
- 1997-1999: Technology foresight & assessment studies at the Institute for Prospective Technological Studies of the European Union in Seville in the field of transport technologies and sustainable mobility.
- Since 2002: responsible for the R&D-Program A3 "Austrian Advanced Automotive Technology" funding the development and market introduction of alternative propulsion systems.
- Since 2006: Managing Director of the Austrian Agency for Alternative Propulsion Systems

Dr. Andreas Dorda

Managing Director

A3PS - Austrian Agency for Alternative Propulsion Systems

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Dr. Wolfgang Steiger,
Director Powertrain Research
Volkswagen AG



Wolfgang Steiger is the director of powertrain research for the Volkswagen Group. His skills are in powertrain development and design.

During his career he was involved with Robert Bosch GmbH, Battelle Institute and Adam Opel AG finally there being responsible for diesel engine development and test. In 1997 he joined the Volkswagen AG group research department. He is responsible for powertrain research, including diesel and gasoline engines, transmissions, hybrids, batteries, fuel cells, engine electronics and fuels.

He gave more than 100 publications, presentations and lectures in several Universities including in China. Wolfgang Steiger is member of the scientific research board of the German Car Manufacturers FVV and of the Mineral oil industry DGMK

Wolfgang Steiger is engaged in several European organizations:

- Chairman of the European Road Transport Advisory Council ERTRAC
- Steering team member of the
 - European Biofuels Technology Platform
 - Energy Science Center ETH Zürich
 - Alliance for Synthetic Fuels for Europe

Wolfgang Steiger graduated from the Technical University Darmstadt with a degree in mechanical engineering and holds a PhD (Dr.-Ing.) from the same university.

In 2005 Wolfgang Steiger has been rewarded with the “Prof. Ferdinand Porsche Prize”

Véronique Hervouet

Chairwoman EU-TP Biofuels



Graduate Engineer from Ecole Centrale de Lyon (France), Master of Science in Materials Science & Engineering from Cornell University (USA).

Twenty one years of experience in the oil & gas industry within Elf & Total (Exploration & Production, Refining & Marketing, Petrochemicals, Chemicals) with responsibilities in the areas of Research & Development, Business and Strategy.

Current position: Vice President, Bioenergy, Corporate Strategy & Risk Assessment Division.

Chair of the Steering Committee of the European Biofuels Technology Platform. Member of the Evaluation Committee of the Bioenergy Program of the French National Research Agency and of the Scientific Committee of the Tuck/ENERBIO foundation.

Dipl.-Ing. Dr. Walter Böhme, MSc, MBA

OMV AG ; Innovation Manager



Date of Birth: 07.10.1956

Nationality : Austria

Educational Background

- Study of mechanical engineering at Technical University of Vienna, Degree Dipl.-Ing.
- PhD thesis about diesel fuel and emissions of diesel engines, Institut of Internal Combustion, Technical University of Vienna.
- MSc, MBA, Professional Finance, University Krems/University of British Columbia

Carrier

- Since 1985 Assistant at the technical University of Vienna
- since 1991 OMV AG, Department R&D, Technical Marketing Services Fuels, Technical Marketing Services Lubricants
- since 1996 Technical Product Manager Lubricants,
- since 2003 Innovation Manager OMV AG

Field of responsibility

- Development and guaranteeing the implementation of a comprehensive, international strategy for the corporate division R&M in the area science and innovation
- Coordinating the F&E activities and the corresponding contents as well as representing the F&E agendas of the division R&M
- Development of a international fuels strategy, implementing alternative fuels.

DI (FH), MSc Harald Stütz

AVL List; Senior Design Engineer



born on Dec. 14th, 1975 in Linz, Austria

Education

2006-2008 Vienna University of Technology

MSc Program – Renewable Energy in Central and Eastern Europe

1999-2001 University of Applied Sciences Mittweida, Germany

Mechanical Engineering and Design

1990-1995 College for Automotive Engineering in Steyr, Austria

Professional Experience

Since 2005 AVL List GmbH Graz, engineering and technology powertrain systems department for base engine design

- Concept, layout and detail design of complete engine systems (diesel, gasoline and gas, passenger car and heavy duty) and all subassembly groups of an engine, mainly cylinder heads
 - Support of engine manufacturer until start of production
 - Project leader for direct biogas injection R&D project 2003-2005 AVL List Technical Center Shanghai Co., Ltd., China
 - Build-up of a design team in a new established tech center with local Chinese engineers.
 - Various customer projects mainly for Chinese market. Design of a new gasoline engine family for a Chinese car manufacturer from a white sheet of paper
- 1996-2003 AVL List GmbH Graz, department for port development and fluid dynamics
- Layout and design of intake and exhaust port concepts for all kinds of gasoline and diesel engines.
 - Aerodynamic optimization of intake and exhaust systems.

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Dr. Thomas Amon (associate professor),
Vienna University of Natural Resources and Applied Life Sciences
Department of Sustainable Agricultural Systems



born 1962, Study and phd at the TU-München-Weihenstephan, 1999 associate professor at the University of Natural Resources and Applied Life Sciences, Department of Sustainable Agricultural Systems, Division of Agricultural Engineering, head of working group “Animal Production and Environmental Engineering”. Membership in numerous national and international working groups on questions like biomass utilisation, biogas production, sustainable energy systems and sustainable agricultural systems. Co-ordinator of the ongoing FP6 research project “EU-AGRO-BIOGAS” (contract: TREN/06/FP&EN/S07.64183/019884). Partner of several on going EU research projects. Founder of the R&D Forum Biogas registered association.

DI Dr. Werner Ahrer

PROFACTOR GmbH



After finishing “Technical Chemistry with Business Studies“ in Linz in 1997 Dr. Ahrer got his PhD in 2001 in the field of trace analyses in environmentally relevant media using HPLC – MS at the University of Linz. As assistant professor 1997-2001 he was responsible for teaching and supervision of diploma thesis.

Since 2001 he is employed at PROFACTOR GmbH in Steyr, first being responsible for biogas analysis (trace compounds like siloxanes and halogenated hydrocarbons).

In 2002 he became Head of Department of the “Innovative Energy Systems” which was transformed into a business unit at PROFACTOR in 2007.

Ao. Univ.-Prof. Dr. Josef Spitzer

JOANNEUM RESAERCH Forschungsgesellschaft mbH



born 1943 in Graz (Austria); study of Mechanical Engineering at the Technical University Graz and of Nuclear Engineering in USA. Currently Head of the Institute of Energy Research at JOANNEUM RESAERCH Forschungsgesellschaft mbH in Graz and Associate Professor in Energy Economics at the Technical University Graz; previous work in the nuclear industry (1971 – 1975) and with Battelle Institute e.V. Frankfurt (1975 – 1982) in Germany. Chairman of the evaluation of Finish energy research (2006); Austrian delegate in the Executive Committee of the bioenergy research network of the International Energy Agency (IEA Bioenergy), chairman of the Committee for 1999 – 2001 and 2008; since 2006 member of the Advisory Group on Energy of the European Commission; since 2007 chairman of the Advisory Group for the Austrian Climate and Energy Fund.

Dipl.-Ing. Manfred Wörgetter

Federal Institute of Agricultural Engineering, Wieselburg



Born 1948 in Kufstein, (Austria); Study at the Graz University of Technology, Faculty for Mechanical Engineering, graduated in 1975; Since 1975 at the Federal Institute for Agricultural Engineering at Wieselburg; Since 1989 head of the Department of Agricultural Engineering Research; Since 1992 Vice Director of the institute and leader of the working group “Renewable Raw Materials” of the Ministry for Agriculture; Adviser for the Federal Ministry for Agriculture, Forestry and the Environment on Biomass Production and Use. National Award for Energy Research; 1994/95: Introduction of European networks in Austria: AFB-net, NTB-net, NF-AIRID; Since 1995 Leader of several IEA Liquid Biofuels Activities; Comprehensive R&D work in the field of solid and liquid biofuels from agriculture and forestry, eg. Wood gasifier for farm tractors; Test methods for boiler tests; Drying of agricultural products; Special emphasis on liquid biofuels for transport, eg. Biodiesel production, analysis, standardisation, use and emissions; Participant in European and international projects: eg. FAIR 96-1877: Greenhouse Gas Emissions of Agriculture; FAIR 97-3832: BIOFIT; FAIR 98-3952: Standardisation of Solid Biofuels.

Univ.-Prof. Dipl.-Ing. Dr. Hermann Hofbauer

Institute for Chemical Engineering, Fuel- and Environmental Technology, Vienna University of Technology



Born 1954 in Grafenberg, AT;

1973 – 1978 study of Mechanical Engineering at the Vienna University of Technology;

1976 – 1979 short-study of Data Processing;

1982 Ph.D. on "Experimental investigations on an Internal Circulating Fluidised Bed";

1985 – 1995 member of the IEA-AFBC Technical Group;

1990 – 1997 Head of the research group "Combustion- and fluidised bed technologies";

1992 – 1994 Austrian delegate IEA-Bioenergy Agreement, Task X, Activity 1;

1993 Habilitation in "Internal CFB – fundamentals and applications";

1993-2000 Head of the Christian Doppler Laboratory for "Fluidised Bed Systems";

1995 – 1998 Austrian delegate IEA-Bioenergy Agreement, Task XIII, Activity 1 (Combustion) and 2 (Gasification);

1995 – 1998 member of the Technical Advisory Committee TAC of the IEA-Bioenergy Agreement, Task XIII; 1997 Univ.-Prof.;

1997 - 2000 Head of the Institute for Chemical Engineering, Fuel- and Environmental Technology, Vienna University of Technology;

since 1998 Austrian delegate IEA Bioenergy Agreement, Task 33, Thermal Gasification; since

1999 Scientific head of the RENET;

since 2003 Key Researcher at Austrian Bioenergy Competence Centre,

since 2004 Vice head of the Institute of Chemical Engineering;

since 2004 dean of study affairs for Chemical Engineering;

Dr. Manfred Klell

HyCentA Research GmbH



Studies of Mechanical Engineering at Graz University of Technology

Member of scientific staff for research and lecturing at the Institute for Internal Combustion Engines and Thermodynamics at Graz University of Technology, Head Prof. Helmut Eichlseder

From 2005 to date:

CEO and CTO of the HyCentA Research GmbH

Areas of expertise:

Applied thermodynamics, internal combustion engines, hydrogen

Co-author of the reference book: Pischinger / Klell / Sams:

"Thermodynamik der Verbrennungskraftmaschine", Springer-Verlag, Wien New York 2002,
1. volume of the new edition: H. List (editor): Der Fahrzeugantrieb (vehicle power train)

Co-author of the reference book: Eichlseder / Klell:

"Wasserstoff in der Fahrzeugtechnik", Vieweg-Teubner-Verlag, Wiesbaden 2008

Dr. Peter Hofmann

Vienna University of Technology - Institute for Internal Combustion Engines and Automotive Engineering



Study: Mechanical Engineering at Vienna University of Technology, Austria.

1992: University assistant at the Institute for Internal Combustion Engines and Automotive Engineering at Vienna University of Technology.

1996: Ph.D

2002: University lecturer for Internal Combustion Engines

List of Participants

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145	Lennart	Erlandsson	AVL MTC
146	Craig	Fairbridge	Natural Resources Canada
147	Stefan	Herndler	A3PS
148	Veronique	Hervouet	Chairwoman EU-TP Biofuels
149	Don	Hillebrand	ANL
150	Hermann	Hofbauer	Vienna University of Technology – Institute of Chemical Engineering
151	Peter	Hofmann	TU Vienna / IVK
152	Manfred	Klell	HyCentA Research GmbH
153	Katarzyna	Majkowska	A3PS - AustriaTech
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155	Nils-Olof	Nylund	TEC TransEnergy Consulting Ltd
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Conference is held in cooperation with



Austrian Federal Ministry for Transport, Innovation and Technology - BMVIT