

Technische Akademie Esslingen
Weiterbildungszentrum



4th International Colloquium
January 15 – 16, 2003
Ostfildern (near Stuttgart)
Germany



Scientific-Technical Board

Chairman

W. J. BARTZ
Tribologie + Schmierungstechnik
Mühlhaldenstraße 91
73770 Denkendorf
Federal Republic of Germany

Organisation

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R. PFEIFFER
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73760 Ostfildern
Federal Republic of Germany

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Mile End Road
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Shell Centre
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G. A. REINHARDT
ifeu - Institut für Energie- und
Umweltforschung Heidelberg GmbH
Wilckenstr. 3
69120 Heidelberg
Federal Republic of Germany

A. RÖJ
Volvo Technological
Development Corporation
06150 Fuels and Lubricants
M 1.6
40508 Gothenburg
Sweden

FUELS

The requirements on fuels for internal combustion engines and on heating fuels are governed by the following aspects:

- Engine or burner type,
- Engine performance,
- Environment protection needs,
- Legislative requirements,
- Fuel sources and resources.

The importance of these points varies in different areas and countries. As a matter of fact, however, the requirements on the chemical, physical, and technological properties of fuels will increase worldwide. In the course of this development, a conflict will arise between the requirements of the engines and the expectations regarding the protection of the environment. Consequently, we will be forced to establish a balance between the various demands. This balance can only be achieved by international cooperation of the engine manufacturers, the mineral oil industry, and the legislative bodies.

Therefore, this international colloquium aims at contributing to the solution of these problems by the exchange of ideas and the discussion on all aspects connected with the system 'engine/fuel environment'.

Session:

Plenary Session (Part I)

Chairman:

W. J. BARTZ
Tribologie + Schmierungstechnik, Denkendorf,
Federal Republic of Germany

09:00 – 11:00

W. J. BARTZ
Tribologie + Schmierungstechnik, Denkendorf, Federal Republic of Germany
Eröffnung / Opening

M. METTNER
Technische Akademie Esslingen, Ostfildern, Federal Republic of Germany
Begrüßung / Opening Address

H. MEHRLÄNDER
Staatssekretär im Wirtschaftsministerium Baden-Württemberg, Stuttgart,
Federal Republic of Germany
Grußwort / Welcome Address

S. DIXSON-DECLEVE
International Fuel Quality Center, Brussels, Belgium
Global Automotive Fuel Quality Trends

J. BENNETT, M. WÖLFLE
Ford Motor Company, Basildon, Great Britain
World Wide Fuel Requirements - Now and in the Future

R. LOSKE
Umwelt- und Bildungspolitischer Sprecher der Bundestagsfraktion
Bündnis 90/Die Grünen, Berlin, Federal Republic of Germany
Biotreibstoffe - Eine saubere Alternative mit Perspektive
Bio-Fuels - A Clean Alternative with Perspectives

11:00 – 11:30

Coffee / Tea Break

Simultaneous Translation German/English

Wednesday 15	Morning	Plenary Room	P-2
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Session:	Plenary Session (Part II)
Chairman:	A. RÖJ Volvo Technological Development Corporation, Gothenburg, Sweden

11:30 – 13:00

L. CLARKE

Shell Global Solutions (UK), Chester, Great Britain

Introduction of Biofuels into Gasoline and Diesel

H. NANNEN

Volkswagen AG, Wolfsburg, Federal Republic of Germany

Die Volkswagen Kraftstoffstrategie

The Fuel Strategy of Volkswagen

N. THOMPSON

CONCAWE, Brussels, Belgium

Regulations to Control Emissions and Fuel Implications

13:00 – 14:30

Lunch Break

Simultaneous Translation German/English

Wednesday 15	Afternoon	Room	1
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Session:	Biofuels (Part I)
Chairman:	E. REMMELE Bayerische Landesanstalt für Landtechnik, Freising, Federal Republic of Germany

14:30 – 16:00

G. A. REINHARDT

ifeu - Institut für Energie- und Umweltforschung Heidelberg, Federal Republic of Germany

What's Best for the Environment: RME or Rape Seed Oil?

J. KRAHL

Fachhochschule Coburg, Federal Republic of Germany

J. BÜNGER

Universität Göttingen, Federal Republic of Germany

A. MUNACK, O. SCHRÖDER, H. STEIN, M. DUTZ

Universität Braunschweig, Federal Republic of Germany

Comparison of Biodiesel with Different Diesel Fuels

Z. KIERNICKI

Technical University of Lublin, Poland

Combustion Process of Petrol Derived Fuel with Properties of Rape Biofuel

16:00 – 16:30

Coffee / Tea Break

Simultaneous Translation German/English

Wednesday 15	Afternoon	Room	2
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Session:	Production and Properties - Diesel Fuels
Chairman:	J. HANCSOK University of Veszprem, Hungary

14:30 – 16:00

R. RAKIC

NIS Naftagas Promet, Novi Sad, Yugoslavia

Z. RAKIC

Novi Sad, Yugoslavia

Meeting Demand and Specifications Challenges for Diesel Fuels

D. KARONIS, M. KOMIOTOU, F. ZANNIKOS, E. LOIS,
S. STOURNAS

National Technical University of Athens, Greece

Foaming Characteristics of Diesel Fuels

T. RUSSELL, S. WALKER

The Associated Octel Co. Ltd., Ellesmere Port, Great Britain

L. GREEK, J.-A. ÖSTLUND, A. HAKANSSON,

G. RICHARDS

Bycosin AB, Karlstad, Sweden

Evaluation of a Novel Method to Study Oil Stability

R. J. CROOKES, G. SIVALINGAM

Queen Mary, University of London, Great Britain

Formation and Oxidation of Soot Particulates in a Diesel Fuel Spray Flame

16:00 – 16:30

Coffee / Tea Break

No Simultaneous Translation

Wednesday 15	Afternoon	Room	3
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Session:	Hydrogen and Fuel Cells (Part I)
Chairman:	M. WACKER Universität Stuttgart, Federal Republic of Germany

14:30 – 16:00

F.-J. WETZEL, J. SCHNEIDER

BMW Group, München, Federal Republic of Germany

Hydrogen as a Fuel for Future BMW Powertrains

M. POLASEK, J. MACEK, M. TAKATS

Czech Technical University, Prague, Czech Republic

Emission Potentials of Hydrogen Engine

16:00 – 16:30

Coffee / Tea Break

No Simultaneous Translation

Wednesday 15	Afternoon	Room	4
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Session:	Emissions (Part I)
Chairman:	D. P. MARTIN Shell Global Solutions (UK), Chester, Great Britain

14:30 – 16:00	B. R. GRASKOW, S. OHTA Chevron Oronite Company LLC, Richmond, USA A Novel Organic Fuel Additive for Improved Combustion, Vehicle Acceleration, and Reduced Hydrocarbon Emissions Z. KOCSIS, A. HOLLO, L. SZIRMAI, G. RESOFSZKI MOL Hungarian Oil and Gas Plc., Budapest, Hungary J. HANCOK University of Veszprem, Hungary Detergents for Diesel Fuels to Improve Air Quality and Fuel Economy at Lower Operating Costs I. SCHIFTER, L. DIAZ-GUTIERREZ Instituto Mexicano del Petroleo, Mexico A Remote Sensing Study of Vehicle Emission in the Metropolitan Area of Mexico City
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16:00 – 16:30	Coffee / Tea Break
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No Simultaneous Translation

Wednesday 15	Afternoon	Room	5
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Session:	Gas Fueled Engines (Part I)
Chairman:	K. PRESCHER Universität Rostock, Federal Republic of Germany

14:30 – 16:00

B. E. MILTON, T. R. WHITE

University of NSW, Sydney, Australia

Direct Injection of Co-Axial Natural Gas/Liquid Diesel Fuel Sprays

M. TAKATS

Czech Technical University, Prague, Czech Republic

Natural Gas Fueled Stationary Engines

S. LUFT

Radom Technical University, Radom, Poland

Dual Fuel Compression Ignition Engine Fueled with LPG

16:00 – 16:30

Coffee / Tea Break

No Simultaneous Translation

Wednesday 15	Afternoon	Room	1
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Session:	Biofuels (Part II)
Chairman:	R. J. CROOKES Queen Mary, University of London, Great Britain

16:30 – 18:30

E. REMMELE, K. THUENEKE

Bayerische Landesanstalt für Landtechnik, Freising, Federal Republic of Germany

B. WIDMANN

Technologie- und Förderzentrum im Kompetenzzentrum für Nachwachsende Rohstoffe,
Straubing, Federal Republic of Germany

T. WILHARM

ASG Analytik-Service Gesellschaft, Augsburg, Federal Republic of Germany

Mindestanforderungen an Rapsöl als Kraftstoff in pflanzenöлтаuglichen Dieselmotoren

Minimum Requirements of Rapeseed Oil as a Fuel in
Vegetable Oil Suited Engines

M. MARKOLWITZ, J. RUWWE

Degussa AG, Niederkassel-Lülsdorf, Federal Republic of Germany

Production of Biodiesel by Use of Alkoxide Catalysts

T. DITTMAR, B. ONDRUSCHKA, M. LAUTERBACH

Friedrich-Schiller-Universität Jena, Federal Republic of Germany

J. HAUPT

L. U. T. Labor- und Umwelttechnik GmbH, Jena, Federal Republic of Germany

Verbesserung der Oxidationsstabilität von Biokraftstoff

Improving the Oxidation Stability of Bio-Fuels

F. KOVACS, J. HANCOSOK, K. BELAFI BAKO

University of Veszprem, Hungary

Transesterification of Vegetable Oils with Enzymatic Catalysts

O. ROHR

MIRACEMA-NUODEX Industria Quimica Ltda., Campinas, Brazil

Green Biodiesel - An Economic Challenge for the Beginning of the 3rd Millenium

18:30

Reception at the TAE with Drinks and Snacks

Simultaneous Translation German/English

Wednesday 15	Afternoon	Room	2
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Session:	Production and Properties - Gasoline Fuels
Chairman:	T. RUSSELL The Associated Octel Co. Ltd., Ellesmere Port, Great Britain

16:30 – 18:30

J. BURRI, D. RENTSCH

Eidgenössische Materialprüfungs- und Forschungsanstalt, Dübendorf, Switzerland

Gasoline Composition Determined by 1H-NMR Spectroscopy

I. VALKAI

MOL Hungarian Oil and Gas Co., Szazhalombatta, Hungary

J. HANCSEK

University of Veszprem, Hungary

Production of Modern Motor Gasolines - Optimization of the Operation of Catalytic Reformer and Naphta Isomerization Units

C. V. D'ORNELLAS, E. J. DE OLIVEIRA

PETROBRAS, Rio de Janeiro, Brazil

Gasoline Oxidation Stability - Influence of Composition and Antioxidants Response

P. VIJAYANAND, S. M. DHIR, S. SINGH, L. DIXIT

Indian Institute of Petroleum, Dehradun, India

Value Addition to Low-Octane Hydrocarbon Feed Stocks to High-Octane Low Benzene Content Gasoline on Pt/HZSM-5 Catalyst

18:30

Reception at the TAE with Drinks and Snacks

No Simultaneous Translation

Wednesday 15	Afternoon	Room	3
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Session:	Tribological Properties of Fuels
Chairman:	D. J. RICKEARD ExxonMobil Petroleum & Chemical, Machelen, Belgium

16:30 – 18:30

C. KAJDAS
Warsaw University of Technology, Plock,
and Central Petroleum Laboratory, Warsaw, Poland
Diesel Fuel Lubricity - A Review

D. KARONIS, G. ANASTOPOULOS, E. LOIS,
S. KALLIGEROS, F. ZANNIKOS
National Technical University of Athens, Greece
**Tribological Evaluation of Low Sulfur Automotive
Diesel in the Presence of Specific Types of Acid
Derivatives**

D. BRATSKY, D. STACHO
Slovnaft VURUP a.s., Bratislava, Slovakia
Low Sulphur Motor Gasoline Lubricity

18:30

Reception at the TAE with Drinks and Snacks

No Simultaneous Translation

Wednesday 15	Afternoon	Room	4
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Session:	Emissions (Part II)
Chairman:	B. R. GRASKOW Chevron Oronite Company LLC, Richmond, USA

16:30 – 18:30

D. P. MARTIN

Shell Global Solutions (UK), Chester, Great Britain

The M111 Engine CCD Test and its Effects on NO_x Emissions and Fuel Consumption

R. GLIGORIJEVIC, J. JEVTIC

IMR-Institute, Belgrade, Yugoslavia

Impact of Diesel Fuel Aromatics on Diesel Engine Exhaust Emission

J. YOSHIMOTO

Niigata Institute of Technology, Kashiwazak, Japan

Performance and Emissions of a Diesel Engine Fueled by Biodiesel and Rapeseed Oil - Gas Oil Blends

18:30

Reception at the TAE with Drinks and Snacks

No Simultaneous Translation

Wednesday 15	Afternoon	Room	5
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Session:	Gas Fueled Engines (Part II)
Chairman:	H.-D. SINNEN Veba Oil Refining & Petrochemicals GmbH, Gelsenkirchen, Federal Republic of Germany

16:30 – 18.30

A. RACOVITZA, C. PANA, N. NEGURESCU,
M. G. POPA

University Politehnica Bucharest, Bucharest, Romania

**Performances of Methanol Fueled Urban Bus and
Truck Diesel Engines Using the Double Injection
Method**

M. PILAWSKA, E. M. BULEWICZ

Krakow University of Technology, Krakow, Poland

**Combustion of Gases in a Bubbling Fluidised Bed -
Any Practical Potential?**

K. D. H. BOB-MANUEL

Rivers State University of Science and Technology, Port Harcourt, Nigeria

R. J. CROOKES

University of London, Great Britain

**Performance Evaluation of Natural Gas and Emulsified
Vegetable Oil for the Propulsion of Small Marine
Crafts**

18:30

Reception at the TAE with Drinks and Snacks

No Simultaneous Translation

Session:

Plenary (Part III)

Chairman:

W. J. BARTZ
Tribologie + Schmierungstechnik, Denkendorf,
Federal Republic of Germany

08:30 – 10:30

A. RÖJ

Volvo Technological Development Corporation, Gothenburg, Sweden

Future Fuel Quality Issues for the Automotive Industry

A. BANDI, U. ZUBERBÜHLER, D. WEST, M. SPECHT

Center for Solar Energy and Hydrogen Research, Stuttgart, Federal Republic of Germany

**Alternative Fuel Concepts - Competence Network
Renewable Fuels**

A. FRIEDRICH

Umweltbundesamt Berlin, Federal Republic of Germany

**Future Fuels - Their Importance for the Environment
Protection**

D. GRUDEN

Dr. Ing. h.c. F. Porsche Aktiengesellschaft, Weissach, Federal Republic of Germany

**CO₂-neutrale Wege zukünftiger Mobilität - Nutzung der
Sonnenenergie für die Herstellung von Kraftstoffen
der Zukunft**

10:30 – 11:00

Coffee / Tea Break

Simultaneous Translation English/German

Thursday 16	Morning	Plenary Room	P-4
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Session:	Plenary (Part IV)
Chairman:	M. GAIRING Baltmannsweiler, Federal Republic of Germany

11:00 – 12:30	R. H. CLARK, A. P. PALMER, R. J. STRADLING, G. F. WHALE Shell Global Solutions (UK), Chester, Great Britain J. J. J. LOUIS Shell Global Solutions (Germany), Hamburg, Federal Republic of Germany The Environmental Benefits of Shell GtL Diesel B. R. HÖHN, H. PFLAUM, T. SCHMIDBAUER Technische Universität München, Garching, Federal Republic of Germany The Autark Hybrid Test Vehicle and Results from Operating R. KAUFFMAN University of Dayton Research Institute, Dayton, USA M. MCKUBRE SRI International, Palo Alto, USA Do Conductive Fuel Deposits on Electrical Wires and Contacts in Aircraft Fuel Tanks Pose a Combustion Hazard?
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12:30 – 14:00	Lunch Break
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Simultaneous Translation English/German

Thursday 16	Afternoon	Room	1
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Session:	Biofuels (Part III)
Chairman:	G. A. REINHARDT IFEU - Institut für Energie- und Umweltforschung Heidelberg, Federal Republic of Germany

14:00 - 16:00

T. GARBE (angefragt)

Volkswagen AG, Wolfsburg, Federal Republic of Germany

Rapsöl versus RME aus technologischer Sicht

Native Oils and FAME as Fuels for Modern Diesel

Passenger Cars

S. G. FRITZ

Southwest Research Institute, San Antonio, USA

K. S. TYSON

National Renewable Energy Laboratory, Golden, USA

Evaluation of Biodiesel Fuel in an EMD GP38-2

Locomotive

K. PRESCHER

Universität Rostock, Federal Republic of Germany

Praxiserfahrungen mit Rapsölkraftstoffen

Practical Experiences With Rapeseed Oil Fuels

R. J. CROOKES

Queen Mary, University of London, Great Britain

Biofuels Performance in Internal Combustion Engines

16:00

Farewell Party with Music, Drinks and Snacks

Simultaneous Translation German/English

Thursday 16	Afternoon	Room	2
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Session:	Sulfur Reduction in Fuels
Chairman:	R. H. CLARK Shell Global Solutions (UK), Chester, Great Britain

14:00 – 16:00

H.-D. SINNEN

Veba Oil Refining & Petrochemicals GmbH, Gelsenkirchen, Federal Republic of Germany

Production of Modern Automotive Fuels

J. HANCOSK, E. LAUER, S. MAGYAR

University of Veszprem, Hungary

I. VALKAI, G. SZAUER

MOL Hungarian Oil and Gas Co., Szazhalombatta, Hungary

Simultaneous Desulfurization and Isomerization of Sulfur Containing n-Hexane Fractions

A. M. AITANI

Center for Refining and Petrochemicals KFUPM, Dhahran, Saudi Arabia

Sulfur Reduction in FCC Gasoline With a Commercial Additive: A Microactivity Study

S. BHATIA, D. K. SHARMA

Indian Institute of Technology, New Delhi, India

Cleaner Petroleum Fuels and Future Biotechnological Approach

16:00

Farewell Party with Music, Drinks and Snacks

No Simultaneous Translation

Thursday 16	Afternoon	Room	3
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Session:	Performance of Oxygenated Fuels
Chairman:	J. BENNETT Ford Motor Company, Basildon, Great Britain

14:00 – 16:00

J.-L. G. GHEYSENS, W. J. WELLS III

NRG Technologies, San Francisco, USA

Multiple Boiling Point Paraffinic and Oxygenated Hydrocarbons will be Key to World Fuel Standards Globalization

E. RAKOSI

Technical University of Iasi, Romania

D. MOJILIAN

DaimlerChrysler Auto-Rom Ltd., Bucharest, Romania

Six Cylinders Diesel Engine Methanol Fueled

C. PANA, N. NEGURESCU, M. G. POPA, A. RACOVITZA

University Politehnica Bucharest, Romania

Performances of LPG Fueled Diesel Engine Using DMI Method

E. J. DE OLIVEIRA, C. V. D'ORNELLAS

PETROBRAS, Rio de Janeiro, Brazil

Stability of Motor Gasolines - The Influence of the Fuel Composition over the Stability of Mixtures with Ethanol

16:00

Farewell Party with Music, Drinks and Snacks

No Simultaneous Translation

Thursday 16	Afternoon	Room	4
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Session:	Fuel Oil
Chairman:	K. P. BADER Institut für Biomedizin und Umweltconsulting (IFBUC), Bielefeld, Federal Republic of Germany

14:00 – 16:00

E. HAMMER

Minitec Engineering GmbH, Gelsenkirchen, Federal Republic of Germany

Fuel Production from Used Oil

J. R. GRZECOWIAK, I. WERESZCZAKO-ZIELINSKA,
A. MASALSKA

University of Technology, Wrocław, Poland

**Influence of Fractional and Chemical Composition on
Colour Degradation of Fuel Oil Fraction**

C. ZHANG, Q. ZHANG

Akzo Nobel Chemicals, Inc., Dobbs Ferry, USA

**Using AlCl₃-Based Room Temperature Ionic Liquids
for Sulfur Removal from Naphta and Gas-Oil**

16:00

Farewell Party with Music, Drinks and Snacks

No Simultaneous Translation

Thursday 16	Afternoon	Room	5
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Session:	Hydrogen and Fuel Cells (Part II)
Chairman:	H. NANNEN Volkswagen AG, Wolfsburg, Federal Republic of Germany

14:00 – 16:00

D. J. RICKEARD, P. J. BERLOWITZ
ExxonMobil Petroleum & Chemical, Machelen, Belgium
Fuel Specification for Fuel Cell Fuels

M. WACKER
Universität Stuttgart, Federal Republic of Germany
**How to supply fuel cell cars in Stuttgart with hydrogen
- a view into the year 2020**

K. P. BADER
Institut für Biomedizin und Umweltconsulting (IFBUC), Bielefeld, Federal Republic of Germany
Perceptions and Deceptions of Biological Hydrogen Production

16:00

Farewell Party with Music, Drinks and Snacks

No Simultaneous Translation

**4rd International Colloquium FUELS
- Overview -**

Wednesday, January 15, 2003									
09:00	Plenary Room								
11:00	Opening Address Plenary Session (Part I)				Translation				
11:00	Coffee / Tea Break								
11:30	Plenary Room								
13:00	Plenary Session (Part II)				Translation				
13:00	Lunch Break								
14:30	Room 1	Room 2	Room 3	Room 4	Room 5				
14:30	Biofuels (Part I) Translation	Production and Properties - Diesel Fuels	Hydrogen and Fuel Cells (Part I)	Emissions (Part I)	Gas Fueled Engines (Part I)				
16:00									
16:00	Coffee / Tea Break								
16:30	Room 1	Room 2	Room 3	Room 4	Room 5				
16:30	Biofuels (Part II) Translation	Production and Properties - Gasoline Fuels	Tribological Properties of Fuels	Emissions (Part II)	Gas Fueled Engines (Part II)				
18:30									
18:30	Reception at the TAE with Drinks and Snacks								
Thursday, January 16, 2003									
08:30	Plenary Room								
10:30	Plenary Session (Part III)					Translation			
10:30	Coffee / Tea Break								
11:00	Plenary Room								
11:00	Plenary Session (Part IV)					Translation			
12:30	Lunch Break								
14:00	Room 1	Room 2	Room 3	Room 4	Room 5				
14:00	Biofuels (Part III) Translation	Sulfur Reduction in Fuels	Performance of Oxygenated Fuels	Fuel Oil	Hydrogen and Fuel Cells (Part II)				
16:00									
16:00	Farewell Party with Music, Drinks, and Snacks								

Translation

Simultaneous Translation

Registration

Technische Akademie Esslingen

Anmeldung

Postfach 12 65

D-73748 Ostfildern

Federal Republic of Germany

Telephone (Germany 7 11) 3 40 08 23

Telefax (Germany 7 11) 3 40 08 27

e-mail: Anmeldung@tae.de

(Please make use of the registration form inside this brochure.)

Internet Registration: www.tae.de/fuels/

Colloquium No. 28590A

Registration Fee

€ 490.00 free of V.A.T.

€ 100.00 free of V.A.T. (speakers)

Payable after receipt of invoice

Bank account:

Kreissparkasse Esslingen 984 267

(BLZ 611 500 20)

This fee includes

- Colloquium proceedings
- Coffee or tea during breaks
- All reception attendances
- Bus transfer from some hotels out of town to the academy (in the mornings) and back (in the evenings).

Languages

Conference languages are English and German. Papers will be printed and presented in English or in German. Simultaneous translation will be provided.

Colloquium Secretariat

Prof. Dr.-Ing. Wilfried J. Bartz

Technische Akademie Esslingen

Postfach 12 65

D-73748 Ostfildern

Federal Republic of Germany

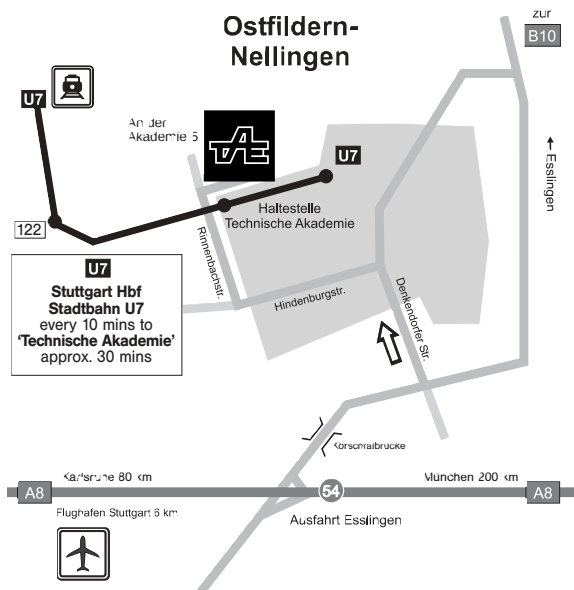
Telephone (Germany 7 11) 3 40 08 12

Telefax (Germany 7 11) 3 40 08 43

e-mail: Renate.Pfeiffer@tae.de

How to Get to the Technische Akademie Esslingen

- By train Stuttgart Central Station, Stadtbahn (tram) U7 to **Ostfildern**, stop 'Technische Akademie'
- By car Motorway exit 'Esslingen'
Ostfildern-Nellingen is the first town on the road to Esslingen
- By plane Stuttgart Airport, taxi to **Ostfildern-Nellingen** or Bus 122



Venue

Technische Akademie Esslingen
An der Akademie 5
D-73760 Ostfildern (near Stuttgart)
Federal Republic of Germany

Accommodation Service

Technische Akademie Esslingen
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Federal Republic of Germany
Telephone (Germany 7 11) 3 40 08 40
Telefax (Germany 7 11) 3 40 08 43
e-mail: Marianne.Merten@tae.de