

**International Trade Fair
for Hydrogen and
Fuel Cell Technologies**

Conference Programme

**16 – 17 September 2004
Hamburg**

**International Symposium
and Workshop on Fuel Cells and
Hydrogen for Aerospace
and Maritime Applications**



Hamburg Messe

International Symposium and Workshop on Fuel Cells and Hydrogen

Welcome to H2amburg!

From 15 to 17 September 2004, Hamburg will form the epicentre of the international hydrogen and fuel cells industry. As a traditional seat of the aerospace and maritime industries, and with its excellent reputation in the fields of research and teaching, the Hanseatic city of Hamburg is the ideal location for the International Symposium and Workshop on Fuel Cells and Hydrogen for Aerospace and Maritime Applications.

Energy forms the crux of our economic and social prosperity. Consequently, the issues of securing energy supplies and further developing autonomous, regenerative forms of energy are of prime importance to the transport sector in particular. Hamburg Messe and its partners invite you to discuss the most important aspects of the latest developments in hydrogen and fuel cell technologies with well-known experts and fellow colleagues from around the world at the first symposium and workshop run under the auspices of the international H2Expo trade fair. In addition to the symposium and workshop, you will also find a range of special supporting events and interesting exhibitors.

Willkommen in H2amburg!

Vom 15. bis 17. September 2004 ist Hamburg das Zentrum der internationalen Wasserstoff- und Brennstoffzellenbranche. Als traditioneller Standort der Luft- und Schifffahrtsindustrie und mit ihrem hervorragenden Ruf auf den Gebieten der Forschung und Lehre ist die Hansestadt Hamburg der ideale Ausrichter des International Symposium and Workshop on Fuel Cells and Hydrogen for Aerospace and Maritime Applications.

Energie ist die grundlegende Voraussetzung für unseren wirtschaftlichen und sozialen Wohlstand. Daher sind die Sicherheit der Energieversorgung und die Weiterentwicklung autonomer, regenerativer Energien gerade für den Transportsektor von zentraler Bedeutung. Die Hamburg Messe und ihre Partner laden Sie ein, wichtige Aspekte der technologischen Entwicklung auf dem Gebiet der Wasserstoff- und Brennstoffzellentechnologie mit renommierten Experten und Kollegen aus aller Welt auf dem 1. Symposium und Workshop im Rahmen der internationalen Fachmesse H2Expo zu diskutieren. Neben dem Symposium und dem Workshop erwarten Sie ein anspruchsvolles Rahmenprogramm und interessante Aussteller.

A separate registration form is enclosed in this conference programme. Alternatively, you can also make use of our convenient online registration service at www.h2expo.de. Everyone who registers online by 15 July will receive an early bookings discount, meaning you pay just € 348,- incl. VAT for the two days.

Diesem Konferenzprogramm ist ein separates Anmeldeformular beigelegt. Sie haben alternativ die Möglichkeit der bequemen Online-Registrierung unter www.h2expo.de. Alle Teilnehmer, die sich bis zum 15. Juli online registrieren, erhalten einen Frühbucherrabatt. Sie zahlen dann für beide Tage nur € 348,- inkl. MwSt.

Date of events / Veranstaltungsdaten

H2Expo International Trade Fair	15–17 September 2004
International Symposium and Workshop	16–17 September 2004

Patronage / Schirmherrschaft

Prof. Dr. Joachim Szodrich
DLR – German Aerospace Center, Germany

Conference chair / Tagungsleitung

Prof. Dr. Wolfgang Winkler
Hamburg University of Applied Sciences, Germany

Programme committee / Programmbeirat

Dr. Gerhard Filip
MTU Friedrichshafen



Dr. Albert E. Hammerschmidt
Siemens, Industrial Services and Solutions,
Marine Solutions, PEM Fuel Cells



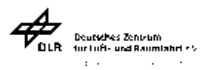
Prof. Dr. Jobst Hapke
TUHH Technical University Hamburg-Harburg,
Germany



Volker R. Hiebel
Airbus Deutschland GmbH



Dr. Rudolf Henne
DLR – German Aerospace Center, Germany



Prof. Dr. Kevin Kendall
University of Birmingham, United Kingdom

Dr. Subhash C. Singhal
PNNL/Battelle, Richland, USA

Dr. Oliver Weinmann
German Hydrogen Association, Germany



Dr. Gerd M. Würsig
Germanischer Lloyd, Germany



Prof. Dr. Wolfgang Winkler
Hamburg University of Applied Sciences (Chairman), Germany



Organizer / Veranstalter

Hamburg Messe in cooperation with
DLR – German Aerospace Center

Language / Sprache

English or German with simultaneous translation

Participation fee / Teilnahmegebühr

Package price for 2 days	€ 406,- per person
Early bird (registration by 15 July 2004)	€ 348,- per person incl. VAT

Latest information / Aktuelle Informationen

www.h2expo.de

and Hydrogen for Aerospace and Maritime Applications

Symposium 16 September 2004

Time	Draft Title	Speaker
09.30	Welcome	
10.00 – 10.30	Power-Optimised Aircraft	Werner Rothammer, Airbus Deutschland GmbH
10.30 – 11.00	Fuel Cells in Aircraft and Synergies	Prof. Dr. Wolfgang Winkler, Hamburg University of Applied Sciences Dr. Rudolf Henne, DLR – German Aerospace Center
11.00 – 11.30	Coffee Break	
11.30 – 12.00	Fuel Cells in Ships	Dr. Gerd M. Würsig, Germanischer Lloyd
12.00 – 12.30	Hydrogen systems and infrastructures	Prof. Dr. Jobst Hapke, TUHH Technical University Hamburg-Harburg
12.30 – 14.00	Lunch Break	
14.00 – 14.30	Fuel Cell Development in the European Union	EU (n. n.)
14.30 – 15.00	Status and Applications of Solid Oxide Fuel Cells in the U.S.	Dr. Subhash C. Singhal, PNNL/Battelle
15.00 – 15.30	Coffee Break	
15.30 – 17.00	Podium discussion: Specific needs and projects for industrial fuel cells Chair: Prof. Dr. Wolfgang Winkler Panelists: Dr. Erich Erdle, Dr. Gerhard Filip, Dr. Rudolf Henne, Dr. Subhash C. Singhal	
	Evening Event	

As at: June 2004, subject to alterations

Workshops 17 September 2004

Time	Draft Title/ Speaker		
	Workshop 1 Aerospace Applications Chairman: Dr. Rudolf Henne DLR – German Aerospace Center	Workshop 2 Maritime Applications Chairman: Dr. Gerd Michael Würsig Germanischer Lloyd	Workshop 3 Hydrogen: Generation, codes and standards Chairman: Prof. Dr. Jobst Hapke TUHH – Technical University Hamburg-Harburg
09.00 – 9.30	Regenerative PEM Fuel Cell Systems Michael Durling General Electric Global Research, USA	The future of FC-Systems in commercial shipping: the Norwegian perspective Kjell Olav Skjølsvik MARINTEK, Norway	The role of Hydrogen from renewable energy sources in a sustainable energy supply system W. Krewitt, J. Nitsch, P. Viebahn DLR Institute of Technical Thermodynamics, Germany
9.30 – 10.00	Systems and components of Power-Optimised Aircraft Nicola Bundschuh DLR – German Aerospace Center, Germany	Fuel Cells in maritime applications Stefan Krummrich HDW Fuel Cell Systems GmbH, Germany	CO₂-free production of H₂ Dr. Oliver Weinmann Vattenfall Europe AG, Germany
10.00 – 10.30	Coffee Break		

Continued overleaf



Workshops 17 September 2004

10.30 – 11.00	Integrated stack and system development for SOFC APU Dr. Christian Wunderlich Webasto AG, Germany	Development of Requirements for Fuel Cells in the Marine Environment – Performance and Prescription Norman Rattenbury and Edward Fort Lloyd's Register, Great Britain	Electrolysis for maritime applications Christian Machens Stuart Energy Systems, Germany
11.00 – 11.30	Hydrogen fuelling for a small aerospace application Ian Williamsen Air Products PLC, Great Britain	Simulation and Optimisation of a marine PEM Fuel Cell System Prof. Christos A. Franopoulos National Technical University of Athens, Greece	Hydrogen Storage in Magnesium-Based Nanostructured Alloys Ying Fu IKE Universität Stuttgart, Germany
11.30 – 12.00	Liquid logistic fuels for fuel cells – requirements and prospects Dr. Christian Mengel Oel-Wärme-Institut, Germany	Fuel Cell Powered Autonomous Underwater Vehicle DeepC Ludwig Joerissen ZSW, Germany	Reforming of diesel fuel for Auxiliary Power Units (APU) Stefan Kah Webasto AG, Germany
12.00 – 13.00	Lunch Break		
13.00. – 13.30	Catalytic Autothermal Reforming for Aerospace Applications Bettina Lenz ISE Fraunhofer-Institut für Solare Energiesysteme, Germany	Technology for Fuelling Hydrogen-Powered Submarines Axel Beck Air Products PLC, Great Britain	Fuel cell battery charger for yachts Stephen Voller Voller Energy, Great Britain
13.30 – 14.00	Reformate Gas Production from various liquid fuels Prof. Albin Czernichowski ECP – GlidArc Technologies, France	Life cycle assessment of maritime fuel cell applications Tomas Tronstad Det Norske Veritas AS, Norway	Portable and Back-up Power Applications Thomas Neubauer Ballard Power Systems GmbH, Germany
14.00 – 14.30	Formulating Liquid Hydrocarbons for Fuel Cells Prof. Dr. Kevin Kendall University of Birmingham, Great Britain	Study on harbour ferry with fuel cells Dr. ir. Dick Schmal TNO, Netherlands	Development and Demonstration of 800-bar Compression and Pipeline Technology for Hydrogen Infrastructure Systems Dirk Lorbach Infraserv Höchst GmbH, Germany
14.30 – 15.00	Coffee Break		
15.00 – 15.30	Alkaline Fuel Cells – Technology not only for Niche Applications Erich Gülzow DLR – German Aerospace Center, Germany	Design and Operation of a 20 kWel Autothermal Diesel Reformer Thomas Aicher ISE Fraunhofer-Institut für Solare Energiesysteme, Germany	Hydrogen applications in the aerospace industry Tom Elliger, Gerhard Klein, Bernd Zapf TÜV Industrie Service GmbH, Germany
15.30 – 16.00	APU development and thematic European Networks Dr. Rudolf Henne DLR – German Aerospace Center, Germany Prof. Dr. Wolfgang Winkler Hamburg University of Applied Sciences, Germany	Power supply for sailing yachts – fuel cell technology with LPG as a user friendly application Dr. Peter Beckhaus ZBT – Duisburg, Germany	Putting hydrogen to the test Judith Orthenburger TÜV Automotive GmbH, Germany
16.00 – 16.30	Niche applications – lessons and benefits for fuel cells in aerospace David Jollie Fuel Cell Today, Great Britian		

English or German with simultaneous translation

As at: June 2004, subject to alterations

Become an exhibitor! Your pluses!

Stellen Sie aus! Pluspunkte für Ihre Messeteilnahme!



Affordable stand packages Kostengünstige Standbaupakete

Hamburg Messe makes it even easier for you to take part in the H2Expo fair: with its affordable all-inclusive stands measuring 9–20 m². Simply book, come along, and present your products and services. You also have the option of sharing a stand with another exhibitor.

Die Hamburg Messe macht Ihnen die Teilnahme an der H2Expo besonders einfach: mit den kostengünstigen All-inclusive-Ständen von 9–20 m². Einfach buchen, kommen und präsentieren. Außerdem haben Sie die Möglichkeit, sich mit einem anderen Aussteller einen Stand zu teilen.



30 minutes' free use of the presentation forum 30 Min. kostenfreie Nutzung des Vortragsforums

As an exhibitor, you are entitled to use the presentation forum for a period of 30 minutes for the purposes of your own presentation. For a net fee of € 150,-, you can then continue your presentation for a further 30 minutes. You can find a downloadable registration form at www.h2expo.de.

Als Aussteller haben Sie die Möglichkeit, das Vortragsforum 30 Minuten lang für eine eigene Präsentation zu nutzen. Für € 150,- netto können Sie Ihren Vortrag um weitere 30 Minuten verlängern. Ein Formular zur Anmeldung steht unter www.h2expo.de zum Download bereit.



Discounted supporting programme Vergünstigtes Rahmenprogramm

Exhibitors can also take part in the supporting programme of the H2Expo fair at a discounted price.

Aussteller haben die Möglichkeit, vergünstigt am Rahmenprogramm der H2Expo teilzunehmen.



One entrance ticket – three trade fairs Eine Eintrittskarte – drei Fachmessen

At the same time as the H2Expo is being held, there are also two other fairs being hosted at Hamburg's exhibition centre – the NORD ELEKTRO and IT:M (IT for medium-sized companies) fairs. For the first time ever, visitors to the exhibition centre can use their tickets to gain entry to all three fairs. Our new concept of hosting fairs focusing on similar topics at the same time opens up an array of interesting synergy opportunities for visitors and exhibitors alike. This will result in a noticeable increase in visitor numbers.

Neben der H2Expo finden auf dem Hamburger Messegelände zeitgleich die NORD ELEKTRO sowie die IT:M – Mittelstandstage Hamburg – statt. Besucher haben erstmals die Möglichkeit, mit ihrem Messticket alle drei Messen zu besuchen. Durch unser neues Konzept der themenübergreifenden Parallelmessen ergeben sich für Besucher und Aussteller interessante Synergien. Dies wird zu einem deutlichen Besucherzuwachs führen.



Trade fair for electrical engineering, information and lighting technology



TRADE FAIR AND CONVENTION for IT-Solutions in Small and Medium-sized Enterprises



International Trade Fair for Hydrogen and Fuel Cell Technologies

Registration forms and general terms of participation are available as downloads at www.h2expo.de.
Anmeldungen und Teilnahmebedingungen finden Sie zum Download unter www.h2expo.de.



You will love Hamburg!

Enjoy the variety! Hamburg is the bustling metropolis in the North, and is a trade fair and congress location of international standing. This is the best forum around for successful business dealings – and eventful hours following the fair. Enjoy the variety of culture, shopping, sport, or rest and relaxation in the city's magnificent parks. You will soon see that Hamburg really knows how to please!

With exceptional transportation and road links to the exhibition centre, getting there is easy. The Hamburg-Dammtor station, which is served by regional, national and ICE trains, is very close by. Hamburg's Fuhlsbüttel airport is just 20 minutes away, while the proximity of the underground and S-Bahn train network makes arriving and departing within the city and its environs quick and easy.

Hamburg wird Sie begeistern!

Genießen Sie die Vielfalt! Hamburg ist die pulsierende Metropole des Nordens und eine Messe- und Kongressstadt von internationalem Rang. Der beste Platz für erfolgreiche Geschäftsabschlüsse – und erlebnisreiche Stunden nach der Messe. Genießen Sie die Vielfalt von Kultur, Shopping, Sport oder Ruhe und Entspannung in den herrlichen Parks der Stadt. Sie werden erleben: Hamburg verwöhnt!

Die Anreise ist aufgrund der hervorragenden Verkehrsanbindung der Messehallen bequem und problemlos. Der Nahverkehrs- und Fernbahnhof Hamburg-Dammtor, in dem auch der ICE Halt macht, liegt in unmittelbarer Nähe. Der Flughafen Fuhlsbüttel ist 20 Minuten von der Hamburg Messe entfernt. Die Nähe zu U- und S-Bahnen garantiert eine schnelle und bequeme An- und Abfahrt innerhalb von Stadtgebiet und Umland.



Contact / Kontakt

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