



**INTERNATIONAL WORKSHOP
ON THE EFFECTS OF
FUEL & AIR QUALITY
TO THE PERFORMANCE OF
FUEL CELLS**

DATE: 9-11 September 2009

**PLACE: Tagungs- und Veranstaltungszentrum Palisade
Palisadenstrasse 48
D-10243 Berlin**

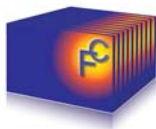
GERMANY





AGENDA
WEDNESDAY 9 SEPTEMBER 2009

PLENARY SESSION		
CURRENT FUEL QUALITY ACTIVITIES IN THE WORLD		
09:00	Welcoming address, Opening Remarks	G. Tsotridis DG JRC-IE
09:10	NOW activities in Hydrogen and Fuel Cells	T. Herbert, NOW
09:40	Research Grouping in Fuel cell activities	P. Lucchese, CEA
10:10	Introduction of FCH-JU activities in EU	B. Coda DG RTD
11:00	Break	
11:30	ISO/TC 197 activities on the international standardization of hydrogen fuel quality	R. Dey, ISO/TC 197
12:00	DOE activities in Fuel Cells	J. Marcinkoski, R. Ahluwalia DOE
12:30	Lunch	
FUEL QUALITY STANDARDIZATION ACTIVITIES		
14:00	Introduction of Current Status of Standardization for H2 Fuel Quality for PEFC in TC197/WG12	H. Tomioka ISO/TC197/WG12
14:25	International Research Collaborations for ISO Standardization	J. Ohi, A. Ruiz, DOE-USA
OVERVIEW OF RESEARCH ON FUEL QUALITY		
14:50	Activities on Hydrogen Fuel Quality Standards in North America	J. Ohi DOE-USA
15:15	Activities on Hydrogen Fuel Quality Standards in Japan	H. Tomioka JARI
15:40	Break	





AGENDA WEDNESDAY 9 SEPTEMBER 2009

CHALLENGES FACING FUEL QUALITY H ₂ production and Delivery		
16:00	Fuel supplier's perspective/vision regarding H ₂ &FC deployments	P. Mulard Total
16:25	Updates of approach to H ₂ fuel quality issue from Japanese fuel suppliers	I. Yasuda JGA/Tokyo Gas, Japan
16:50	Trade-off between hydrogen fuel quality and cost	F. Barth Air Liquide
17:15	Hydrogen quality from decarbonized fossil fuels to fuel cells	M. Carré Air Liquide
17:40	A Cheap and Efficient Desulphuriser - SulphCatch	J. Boon, ECN ECN
18:05	Directed exchange of view among participants on the challenges facing hydrogen fuel quality	Leaders/Rapporteurs (from participants)
18:30	End day 1	





AGENDA

THURSDAY 10 SEPTEMBER 2009

PARALLEL SESSION 1		
Hydrogen Powered Fuel Cells		
FUEL CELL IMPURITY TOLERANCE		
Infrastructure and industry aspects		
08:30	Fuel cell experiences from the CUTE project	M. Kentzler Daimler
09:00	Commercial Hydrogen Fuel for Fuel Cell Vehicles	J. Reijkerkerk Linde
EFFECTS OF FUEL IMPURITIES		
09:30	Influence of impurities on MEA performance and potential system impact	L. Joerissen ZSW
10:00	CO effects and mechanisms	O. Lemaire CEA
10:30	Break	
11:00	Effect of the Nature and Structure of Pt-based nano-catalysts to CO- tolerance	S. Brimaud, C. Lamy Uni. Poitiers
11:30	Toluene effect on Pt/C	R. Lindström KTH
12:00	Methanol effect on DMFC and PEMFC degradation	A. Georg Fraunhofer ISE
12:20	H ₂ S Effects and Mechanisms: Isolated and Mixtures	T. Rockward, LANL
12:40	Break	



PARALLEL SESSION 1 Hydrogen Powered Fuel Cells		
EFFECTS OF FUEL IMPURITIES Modeling and Effects of Cell Parameters and Operating Conditions		
14:00	Influence of Pt loading on Fuel Cell Performance	Y. Hashimasa JARI
14:30	Cell temperature and relative humidity effects including reactions of HT PEFC on fuel contaminants	C. Hartnig BASF
15:00	Modeling of impurity effects	R. Ahluwalia ANL
15:30	Break	
FUEL CELL IMPURITY TOLERANCE: IMPLICATIONS FOR STANDARDS ▪ System and operational aspects		
16:00	Impurities accumulation due to hydrogen recirculation	Y. Matsuda JARI
16:20	Hydrogen recirculation - system efficiency	R. Ahluwalia ANL
16:40	Stop-start effects	J. Scholta ZSW
17:00	Directed exchange of view among participants on the challenges facing hydrogen fuel quality	Leaders/Rapporteurs (from participants)
17:20	End of Day 2	



AGENDA

THURSDAY 10 SEPTEMBER 2009

PARALLEL SESSION 2 HIGH TEMPERATURE		
INFLUENCE OF CONTAMINANTS and FUELS		
08:30	Overview fuel processing for SOFC in relation to the quality of the fuel generated	John Bøgild-Hansen, HTAS
09:00	Fuel treatment of liquid hydrocarbons and resulting reformat quality (incl. desulphurisation)	Ralf Peters, FZJ
09:30	Fuel treatment of Landfill gas for SOFC	Matti Noponen, Wartsila
10:00	Reforming of propane, butane and LPG and quality of the reformat	Ralf Uwe Dietrich, Cutec
10:30	Break	
INFLUENCE OF CONTAMINANTS and FUELS		
11:00	Influence of fuel contaminants: Large SOFC results	Ico Vinke, FZJ
11:30	Biogas treatment for SOFC	P.V.Aravind TUDelft
12:00	Influence of biogas contaminants on SOFC performance: results from EU projects Green Fuel Cell and Biocellus)	Bert Rietveld, ECN
12:30	Lunch	



PARALLEL SESSION 2 HIGH TEMPERATURE		
INFLUENCE OF CONTAMINANTS and FUELS		
14:00	Fuel Processing of LPG and reformat quality for SOFC	Andreas Gubner, Enerday
14:30	Internal Reforming Issues for SOFC and resulting fuel quality	Ludger Blum FZJ
15:00	Advanced and compact fuel processors and quality of the produced fuel for SOFC	Gunther Kolb INM
15:30	Coffee Break	
INFLUENCE OF CONTAMINANTS and FUELS		
16:00	The effect of H ₂ S on the MCFC	Stephen McPhail ENEA
16:30	Biogas Upgrading to Fuel Cell Quality	Heiko Lohmann Fraunhofer Institute UMSICHT
17:00	End day 2	

AGENDA FRIDAY 11 SEPTEMBER 2009

PLENARY SESSION		
FUEL QUALITY MONITORING		
<ul style="list-style-type: none"> ▪ Laboratory methods ▪ Field methods ▪ Sampling 		
08:30	Traceable analysis of impurities in high purity hydrogen in the laboratory	R.M.Wessel VSL
08:50	Traceable analysis of impurities in hydrogen by gas chromatography and other methods	M. Milton NPL
09:10	Impurity analysis issue: Case study of H ₂ S in hydrogen	M. Carré Air Liquide
09:40	Developing of test methods for trace impurities	J. Reijerkerk Linde
10:00	Field instrumentation for verifying fuel quality specifications	B. Buttner NREL
10:20	Break	
IMPACT OF AIR QUALITY		
10:50	Influence of impurities in the air on fuel cell performance	D. Imamura JARI
11:15	Analysis of the influence of a filter system for gaseous contaminants on the lifetime of PEM-fuel cells	U. Misz ZBT
11:40	Air quality aspects for SOFC	John Bøgild-Hansen, TOFC
12:05	Cathode gas quality impact on MCFC	E. Bergaglio ANSALDO
12:30	Break	



PLENARY SESSION GENERAL DISCUSSION		
14:00	Challenges facing hydrogen fuel quality	Facilitators
	Ongoing research	
	Specific hydrogen fuel impurities	
	Hydrogen fuel quality assurance	
	Recommendations to ISO/TC 197 WG 12 for consideration	
	Research priorities for improving tolerance to fuel impurities of PEFC and high-temperature fuel cells	
15:00	End of Workshop	

