



5th International
Conference on
Hydrogen Safety
September 9-11, 2013
Brussels - Belgium

ICHS 2013

"Progress in safety
of hydrogen technologies
and infrastructure:
enabling the transition
to zero carbon energy"

Monday, September 9, 2013

Room Alcide De Gasperi (GASP) - Room Sicco Mansholt (MANS) - Room Lord Roy Jenkins (JENK)

Time Slots	Monday, September 9, 2013		
8:00-9:35	Registration / Coffee		
9:35-9:40	GASP	Opening of the Conference: A. Tchouvelev (HySafe) and M. Steen (EC JRC) on behalf of the Organising Committee	
9:40-12:00	GASP	Session: Global Policies and initiatives for hydrogen in transitioning to a low-carbon economy Chair: D. Ristori (Director-General Joint Research Centre, European Commission)	
9:40 - 9:45	Opening and welcome by the chair		
9:45 - 10:00	Japan: Dr M. Hashimoto, Director General New Energy Technology Department of NEDO, chairman of IPHE Steering Committee		
10:00-10:15	USA: Dr. D. Eppler, Counselor for Energy, Environment, Science and Technology, US Mission to the European Union		
10:15-10:30	China: Prof. Mao, Chairman of National Association for Hydrogen Energy, Vice-President International Association for Hydrogen Energy, Advisor to Ministry of Science and Technology		
10:30-10:45	Germany: Dr. T. Herbert, Programme Manager Transportation, on behalf of Dr K. Bonhoff, Managing Director National German Hydrogen and Fuel Cell Programme		
10:45-10:55	Presidency of the European Council: tbc		
10:55-11:05	European Parliament: V. Prodi, Member of the EP Committee on Industry, Research and Energy		
11:05-11:35	European Commission: D. Calleja DG-ENTR - O. Onidi DG-MOVE - T. Constantinescu DG-ENER - G. de Santi DG-JRC		
11:35-11:40	European Fuel Cells and Hydrogen Joint Undertaking (FCH-JU): B. De Colvenaer, Executive Director		
11:40-11:45	European Hydrogen Association (EHA): Marieke Reijalt, Executive Director		
11:45-12:00	Conclusions - D. Ristori		
12:00-1:20	Lunch		
	GASP	MANS	JENK
	Session 1B: Release and dispersion Chair: A. Venetsanos	Session 2B: Risk management Chair: P. Benard	Session 3B: Ignition Chair: J. Wen
1:20-1:40	Paper Id No : 248 Ingram, J.M., Battersby, P., Averill, A.F., Holborn, P.G., Nolan, P.F. Hydrogen bubble dispersion and surface bursting behaviour	Paper Id No: 101 S.C. Weiner Advancing the Hydrogen Safety Knowledge Base	Paper Id No: 164 Bitoh, H., Seutake, M., Asahara, M., Yamada, E., Hayashi, A.K. Numerical study on detailed mechanism of H₂ / Air Flame Jet Ignition
1:40-2:00	Paper Id No : 158 Tamura, Y., Takeuchi, M., Sato, K. Effectiveness of a blower in reducing the hazard of hydrogen leaking from a hydrogen-fueled vehicle	Paper Id No: 228 Battersby, P., Holborn, P.G., Ingram, J.M., Averill, A.F., Nolan, P.F. The mitigation of hydrogen explosions using water fog, nitrogen dilution and chemical additives	Paper Id No: 167 Asahara, M., Shirakawa, Y., Hayashi, A.K., Tsuboi, N. Strong and Mild Ignition Mechanism behind Reflected Shock Waves in Hydrogen Mixture
2:00-2:20	Paper Id No : 239 Kuznetsov M., Pariset S., Jordan T., Friedrich A., Stern G. Experimental investigation of nonideality and nonadiabatic effects under high pressure releases	Paper Id No: 121 C. Jäkel, S. Kelm, E. Reinecke, K. Verfondern, H.-J. Allelein Safety modeling of hydrogen: from the release of LH₂ or GH₂ to the use of recombiners as passive safety devices	Paper Id No: 196 Rudy, W., Dabkowski, A., Teodorczyk, A Experimental and numerical study on spontaneous ignition of hydrogen-methane jets in air
2:20-2:40	Paper Id No : 116 Giannissi, S.G., Royle, M. Venetsanos, A.G., Markatos, N., Willoughby, D.B. Simulation of Hydrogen Dispersion under Cryogenic Release Conditions	Paper Id No: 193 Ahmad, A., Al-Shanini, A., Khan, F. Application of Risk Assessment Approach on a Hydrogen Station	Paper Id No: 204 Bourgin, E., Yang, C., Bauwens, L., Fachini, F.F. Effects of chemical kinetics on ignition of hydrogen jets
2:40-3:00	Paper Id No : 125 Shishehgaran, N., Paraschivoiu, M. CFD based simulation of hydrogen release through elliptical orifices	Paper Id No: 219 Markert, F., Melideo, D., Baraldi, D. Uncertainties in risk assessment of Hydrogen discharges from pressurized storage vessels ranging from cryogenic to ambient temperatures	Paper Id No: 211 Terashima, H., Koshi M., Miwada, C., Mogi, T., Dobashi, R. Numerical simulations of spontaneous ignition of high-pressure hydrogen based on detailed chemical kinetics
3:00-3:20	Break		

	GASP Session 1C: Release and dispersion Chair: G. Benard Michel	MANS Session 2C: Safety H2 infrastructure Chair: A. Harris	JENK Session 3C: Ignition Chair: S. Haworth
3:20-3:40	Paper Id No : 236 Huong-Lan Tran, Anne Sergent, Gilles Bernard-Michel, Patrick Le Quere Numerical simulation of the helium dispersion in a semi-confined air-filled cavity	Paper Id No: 210 Wang,Z., Secnik,E., Naterer, G.F. Safety and Risk Management in Hydrogen Production with Thermochemical Water Splitting Cycles	Paper Id No: 223 Grune, J, Sempert, K., Kuznetsov, M. , Jordan, T. Experimental investigation of flame and pressure dynamics after spontaneous ignition in tube geometry
3:40-4:00	Paper Id No : 139 Ruggles, A.J., Ekoto, I.W. Experimental investigation of nozzle aspect ratio effects on underexpanded hydrogen jet release characteristics	Paper Id No: 109 Rivkin, C., Blake, C., Burgess, R., Buttner, W. Hydrogen Systems Component Safety	Paper Id No: 234 Averill, A.F., Ingram, J.M., Battersby, P., Holborn, P.G. And Nolan, P.F. Ignition of flammable hydrogen/air mixtures by controlled glancing impacts in nuclear waste decommissioning
4:00-4:20	Paper Id No : 145 G. Bernard-Michel, B. Cariteau, J. Ni, S. Jallais, E. Vyazmina, D.Melideo, D.Baraldi, A.Venetsanos Cfd benchmark based on experiments of helium dispersion in a 1 m³ enclosure- intercomparisons for plumes and buoyant jets.	Paper Id No: 115 Barilo, N.F., Weiner, S.C. Deploying Fuel Cell Systems: What Have We Learned?	Paper Id No: 103 A. Kessler, A. Schreiber, C. Wassmer, L. Deimling, S. Knapp, V. Weiser, K. Sachsenheimer, G. Langer, N. Eisenreich Ignition of Hydrogen Jet Fires from High Pressure Storage
4:20-4:40	Paper Id No : 152 Molkov, V., Shentsov, V., Quintiere, J. Passive ventilation of a sustained gaseous release in an enclosure with one vent	Paper Id No: 243 Oyama S, Kamiya S, Harada E, Inoue K, Nishimura M CO₂-Free Hydrogen Supply Chain Project and Risk Assessment for the Safety Design	Paper Id No: 189 Makoto Asahara, Akinori Yokoyama, Yuito Tatsumi, Suguru Kato, Eisuke Yamada, A. Koichi Hayashi Real size calculation of high pressure hydrogen flow and its auto-ignition in cylindrical tube
4:40-5:00	Paper Id No : 161 Deborah Houssin-Agbomson, Gilles Bernard-Michel, Benjamin Cariteau, Simon Jallais Influence of the location of a buoyant gas release in several configurations varying the height of the release and the geometry of the enclosure	Paper Id No: 244 Azuma,M., Oimatsu,K., Oyama,S., Kamiya,S., Igashira,K., Takemura,T., Takai,Y. Safety design of compressed hydrogen trailers with composite cylinders	Paper Id No: 201 B.P. Xu, J.X. Wen The Effect of Tube Internal Geometry on the Propensity to Spontaneous Ignition in Pressurized Hydrogen Release
5:00-5:20			Paper Id No: 218 Maxwell,B. ,Falle,S.A.E.G., Sharpe,G.J., Radulescu,M.I. A Turbulent Combustion Model for Ignition of Rapidly Expanding Hydrogen Jets
5:20-7:00	Reception / Posters		
5:20-7:00	Paper Id No: 114 Angers B., Hourri A., Benerd P., Tchouvelev A., Betournay M., Hardcastle S. CFD simulations of the effect of ventilation on hydrogen release behavior and combustion in an underground mining environment		
5:20-7:00	Paper Id No: 154 Kim, M., Do, K., Kim, T., Choi, B., Han, Y. A Study on the Continuous Spill with Limited Period of Release		
5:20-7:00	Paper Id No: 173 Byung-II Choi, Myungbae Kim, Kyu Hyung Do, Tae Hoon Kim, Yongshik Han, Yuwhan Lee Comparison of Solutions for a Liquid Pool Spreading Model with Continuous and Instantaneous Spills		
5:20-7:00	Paper Id No: 172 Gai, W.Z., Fang, C.S., Deng, Z.Y. Catalysis of Oxides in Hydrogen Generation by the Reaction of Al with Water		
5:20-7:00	Paper Id No: 186 Xuefang Li, Jingliang Bi, David M. Christopher Comparison of Numerical and Algebraic Models of Low and High Pressure Hydrogen Jet Flows with Ideal and Real Gas Models		
5:20-7:00	Paper Id No: 187 Li Zhiyong, Pan Xiangmin , Ma Jianxin Risk analysis on mobile hydrogen refueling stations in the world expo shanghai		
5:20-7:00	Paper Id No: 227 Sánchez J.C. , Quero F. , Hernández E. , Latapia J. , Galindo J. , Azkarate I., Ortega A. , Bea J.A. Structural health monitoring techniques for damages detection in hydrogen pressure vessels		

Tuesday, September 10, 2013

Room Alcide De Gasperi (GASP) - Room Sicco Mansholt (MANS) - Room Lord Roy Jenkins (JENK)

Time Slots	Tuesday, September 10, 2013 Room Alcide De Gasperi (GASP) - Room Sicco Mansholt (MANS) - Room Lord Roy Jenkins (JENK)		
8:20-9:05	GASP Plenary: FCH JU priorities B. De Colvenar State-of-the-Art and Research Priorities in Hydrogen Safety A. Kotchourko (Paper ID 229) Chair: M. Steen		
9:05-9:35	GASP Plenary: Hydrogen use and fire prevention in Italy F. Dattilo Chair: M. Carcassi		
9:40-10:20	GASP Topical: Cryo-compressed Hydrogen Storage (Cch2) Roadmap from validation towards regulation. J. Burtscher Chair: T. Jordan	MANS Round table: Standardization to Support Innovation and Commercialization of HFC Infrastructure Panelists: A. Tchouvelev, T. Herbert and P. Churchill Chair: J. Keller	JENK Topical: Understanding Li-Ion battery safety through testing and modelling A. Pesaran Chair: L. Brett
10:20-10:40	Break		
	GASP Session 4A: Release and dispersion Chair: M. Paraschivoiu	MANS Session 5A: RCS Chair: A. Maruta	JENK Session 6A: FC/electrolysis safety Chair: O. Jediecke
10:40-11:00	Paper Id No: 170 Denisenko V.P., Kirillov I.A., Korobtsev S.V., Nikolaev I.I. Hydrogen distribution in enclosures: on distinction criterion between quasi-homogeneous mixing and stratification modes	Paper Id No: 144 Haugom, G.P., Otterdal, A.L., Friis Hansen, P., Rotty, S.Y. Status, gaps and recommendations regarding standardisation and the use of hydrogen in sustainable buildings	Paper Id No: 142 Hotellier, Gaëlle, Becker, Inés Safety concept of a self-sustaining PEM Hydrogen Electrolyzer System
11:00-11:20	Paper Id No: 178 Simon Jallais, Deborah Houssin-Agbomson, Benjamin Cariteau Application of natural ventilation engineering models to hydrogen build up in confined zones	Paper Id No: 118 San Marchi, C., Somerday, B.P., Nibur, K.A. Development of standards for evaluating materials compatibility with high-pressure gaseous hydrogen	Paper Id No: 191 Dzhus, K.A., Grigoriev, S.A., Korobtsev, S.V., Fateev, V.N., Bessarabov, D.G., Millet, P. Failure of PEM water electrolysis cells: case study involving anode dissolution and membrane thinning
11:20-11:40	Paper Id No: 214 Hooker, P., Willoughby, D., Hall, J., Hoyes, J. Accumulation of hydrogen released into a vented enclosure - experimental results	Paper Id No: 105 Keller, J.O., Gresho, M., Harris, A., Tchouvelev, A.V. What is an Explosion?	Paper Id No: 195 Nordin, Nazatul Niza, Ahmad, Arshad, Mohamad, Mardawani, Ali, Mohamad Wijayanuddin Cost effective inherent safety index for polymer electrolyte membrane fuel cell systems
11:40-12:00	Paper Id No: 216 Hedley, D., Hawksworth, S.J., Rattigan, W., Brentnall R, Allen, J. Large Scale Passive Ventilation Trials of Hydrogen	Paper Id No: 128 B. L'hostis, S. Ruban, G. Bernard-Michel, A. Kotchourko, S. Brennan, R. Dey, P. Hooker, D. Baraldi, A. Venetsanos, J. Der Kinderen Indoor use of hydrogen, knowledge gaps and priorities for the improvement of current standards on hydrogen, a presentation of HyIndoor European project	Paper Id No: 240 Jedicke, O.R., Inge-Dahl, P. H2FC European Infrastructure; Research opportunities to focus on scientific and technical bottlenecks
12:00-1:20	Lunch		
	GASP Session 4B: Confined spaces Chair: V. Molkov	MANS Session 5B: Sensors Chairs: L. Brett - W. Buttner	JENK Session 6B: Education and lessons learned Chair: N. Barilo
1:20-1:40	Paper Id No: 181 Simon Jallais, Andrey Gavrikov Syngas explosion reactivity in steam methane reforming process	Paper Id No: 136 Buttner, W. J., Burgess, R., Rivkin, C., Post, M. B., Boon-Brett, L., Palmisano, V., Moretto, P. An Assessment on the Quantification of Hydrogen Releases Through Oxygen Displacement Using Oxygen Sensors	Paper Id No: 166 Hamilton, J.J. Development of a Hydrogen and Fuel Cell Vehicle Emergency Response National Template
1:40-2:00	Paper Id No: 133 A. Velikorodny, E.Studer, S.Kudriakov, A.Beccantini Combustion modeling in large scale volumes	Paper Id No: 123 Hübert, T., Boon-Brett, L., Palmisano, V., Frigo, G., Hellstrand, Å., Kiesewetter, O., May, M Trends in gas sensor development for hydrogen safety	Paper Id No: 213 Neves Jr, N.P. Introductory course on hydrogen safety at CENEH - UNICAMP

2:00-2:20	Paper Id No: 235 Maley, L., Bhattacharjee, R., Radulescu, M.I. A comparative study of detonability and propensity to sustain high-speed turbulent deflagrations in hydrogen and methane mixtures	Paper Id No: 124 Hübert, T. And Banach, U. Time response of hydrogen sensors	Paper Id No: 233 Verbecke F., Vesly B., Lopez M., Molkov V., Rejjalt M., Dey R., Maranne E., Dang-Nhu G. European hydrogen safety training platform for first responders: hyresponse project
2:20-2:40	Paper Id No: 111 Bauwens, C.R., Dorofeev, S.B. CFD modeling and consequence analysis of an accidental hydrogen release in a large scale facility.	Paper Id No: 134 Palmisano, V., Boon-Brett, L., Bonato, C., Harskamp, F, Buttner, W.J., Post, M.B., Burgess, R., Rivkin C. Evaluation of Selectivity and Resistance to Poisons of Commercial Hydrogen Sensors	Paper Id No: 150 Harris,A., Kashuba,M. Discussion of lessons learned from a hydrogen release
2:40-3:00	Break		
	GASP	Session 4B: Confined spaces Chair: V. Molkov (Continue)	MANS
			Session 5B: Sensors Chairs: L. Brett - W. Buttner (Continue)
3:00-3:20	Paper Id No: 112 M. Schiavetti ,A. Marangon, M. Carcassi Experimental study of vented hydrogen deflagration with ignition inside and outside the vented volume	Paper Id No: 198 Benson, D.K., Hoagland, W, Smith, R.D. Very low-cost visual and wireless sensors for effective hydrogen gas leak detection	
3:20-3:40	Paper Id No: 146 Keenan, J.J. , Makarov, D.V., Molkov, V.V. Modelling and effect of Rayleigh-Taylor instability on coherent deflagrations	Paper Id No: 122 Boudjiet, M.T., Cuisset, V., Pellet, C., Dufour, I., Bertrand, J. Feasibility of hydrogen detection by the use of uncoated silicon microcantilever-based sensors	
3:40-4:00	Paper Id No: 135 Rocourt, X., Awamat, S., Sochet, I., Jallais, S. Vented hydrogen-air deflagration in a small enclosed volume	Paper Id No: 148 Bertrand J., Pilorget G., Lesoille S., Lablonde L. Influence of doping element in distributed hydrogen optical fiber sensors with brillouin scattering	
4:00-5:00	GASP	Webinar What We Can Learn from Hydrogen Safety Event Databases N. Barilo, S. Weiner, P. Moretto, D. Baraldi and M. Steen Moderator: J. Keller	
5:15	JENK	HySafe General Assembly	

Time Slots	Wednesday, September 11, 2013 Room Alcide De Gasperi (GASP) - Room Sicco Mansholt (MANS)		
8:20-9:35	GASP	Plenary: Historical perspective Panelists: J.Y. Zheng (Paper ID 155), CN; A. Maruta, JP; M. Steen, EU; J. Hamilton, US; P. Lehman, (invited), US Chair: A. Tchouvelev	
9:40-10:20	GASP	Topical: Hydrogen Vented Explosion: experiments, engineering models and CFD S. Jallais Chair A. Kotchourko	MANS
			Topical: Hydrogen storage - recent improvements and industrial prospectives H. Barthelemy (Paper ID 132) Chair ZQ Mao
10:20-10:40	Break		

	GASP <p>Session 7A: Vented deflagrations Chair: S. Dorofeev</p>	MANS <p>Session 8A: Storage Safety Chair: JY Zheng</p>
10:40-11:00	<p>Paper Id No: 165 Daubech, J., Proust, C., Gentilhomme, O., Jamois C. Mathieu, L Hydrogen-air vented explosions: new experimental data</p>	<p>Paper Id No: 209 Valentini, R., De Sanctis M., Lovicu, G., Colombo C. Helios: A new method for Hydrogen permeation test</p>
11:00-11:20	<p>Paper Id No: 176 S. Jallais, S. Kudriakov An inter-comparison exercise on engineering models capabilities to simulate hydrogen vented explosions</p>	<p>Paper Id No: 183 Kim, Changjong, Cho, Sung Min, Kim, Eun Jung, Yoon, Kee Bong The study on the internal temperature change of type3 and type4 composite cylinder during filling</p>
11:20-11:40	<p>Paper Id No: 217 Molkov, V., Bragin, M. Vented hydrogen-air deflagrations in low strength equipment and buildings</p>	<p>Paper Id No: 220 Melideo D., Baraldi D., Galassi M.C., Ortiz Cebolla R., Acosta Iborra B., Moretto P Assessment of a cfd model for simulations of fast filling of hydrogen tanks with pre-cooling</p>
11:40-12:00	<p>Paper Id No: 237 Bauwens, C.R., Dorofeev, S.B. Effect of initial turbulence on vented explosion overpressures from lean hydrogen-air deflagrations</p>	<p>Paper Id No: 224 De Miguel, N., Acosta, B., Moretto, P., Harskamp, F., Bonato, C. Experimental study of the thermal behaviour of hydrogen tanks during hydrogen cycling</p>
12:00-12:20	Lunch	
	GASP <p>Session 7B: Premixed combustion Chair: L. Bauwens</p>	MANS <p>Session 8B: Storage Safety Chair: P. Moretto</p>
1:20-1:40	<p>Paper Id No: 117 Tolias, I.C., Markatos, N., Venetsanos, A.G. Evaluation of the adrea-hf cfd code against a hydrogen deflagration in a tunnel</p>	<p>Paper Id No: 106 Acosta, B., Moretto, P., De Miguel, N., Ortiz, R., Harskamp, F. and Bonato, C JRC reference data from experiments of onboard hydrogen tanks fast filling</p>
1:40-2:00	<p>Paper Id No: 149 Makarov, D., Molkov, V. Modelling and simulation of lean hydrogen-air deflagrations</p>	<p>Paper Id No: 102 Mair, G. W., Hoffmann, M., Schönfelder, T. The slow burst test as a method for probabilistic quantification of cylinder degradation</p>
2:00-2:20	<p>Paper Id No: 231 Kuznetsov M., Czerniak M., Jordan T., Grune J. Effect of temperature on laminar flame velocity for hydrogen-air mixtures at reduced pressures</p>	<p>Paper Id No: 131 Lowesmith, B.J., Hankinson, G., Chynoweth, S. Safety Issues of the Liquefaction, storage and transportation of liquid hydrogen</p>
2:20-2:40	<p>Paper Id No: 238 Borzou, B., Radulescu, M.I. Evaluation of hydrogen, propane and methane-air detonations instability and detonability</p>	<p>Paper Id No: 184 Cho, Sung Min, Kim, Changjong, Kim, Eunjung, Kim, Inchan Study on behavior of ambient hydraulic cycling test for 70 mpa type-3 hydrogen composite cylinder</p>
2:40-3:00	<p>Paper Id No: 199 Dennis, K. Maley, L. Radulescu, M.I., Liang, Z Implementation of large scale shadowgraphy in hydrogen safety phenomena</p>	<p>Paper Id No: 157 Zhevago, N.K., Chabak, A.F., Denisov E.I., Fateev V.N., Glebov V.I., Korobtsev S.V. Safe storage of compressed hydrogen at ambient and cryogenic temperatures in flexible glass capillaries</p>
3:00-3:20	Break	
	GASP <p>Session 7C: Fires Chair: F. Dattilo</p>	MANS <p>Session 8C: H2 effects on material Chair: H. Barthelemy</p>
3:20-3:40	<p>Paper Id No: 147 Hall, J.E., Hooker, P., Willoughby, D. Ignited Releases of Liquid Hydrogen: safety considerations of thermal and overpressure effects.</p>	<p>Paper Id No: 119 Hughes, L.A., Somerday, B.P., Balch, D.K., San Marchi, C. Hydrogen compatibility of austenitic stainless steel tubing and orbital tube welds</p>

3:40-4:00	<p>Paper Id No: 104 A. Kessler, A. Schreiber, L. Deimling, V. Weiser, T. Klahn, G. Billeb, S. Knapp, N. Eisenreich</p> <p>Radiation from hydrogen jet fires investigated by time-resolved spectroscopy</p>	<p>Paper Id No: 226 Li, Z.Y. , Zheng, J.Y. , Zhao, Y.Z , Xu, P. , Zhou, C.L.</p> <p>Dependence of hydrogen embrittlement on hydrogen in the surface layer in type 304 stainless steel</p>
4:00-4:20	<p>Paper Id No: 110 Ekoto, I.W., Ruggles, A.J., Creitz, L.W., Li, J.X.</p> <p>Updated Jet Flame Radiation Modeling with corrections for buoyancy and Wind</p>	<p>Paper Id No: 232 Jothi, S, Croft, T.N., Brown, S.G.R., De Souza Neto, E.</p> <p>Computational analysis of hydrogen diffusion in polycrystalline nickel and anisotropic polygonal micro, nano grain size effects</p>
4:20-4:40	<p>Paper Id No: 153 Molkov, V., Shentsov, V., Brennan, S., Makarov, D.</p> <p>Hydrogen non-premixed combustion in enclosure with one vent and sustained release: numerical experiments</p>	<p>Paper Id No: 100 Taxak, M. , Kumar, S. , Krishnamurthy, N, Kalekar, B. B. , Sheelvantra, S.</p> <p>The effect of iron on the solubility behavior of hydrogen in tantalum</p>
4:40-5:00	<p>Paper Id No: 200 Wang, C.J , Chen, Z.B., Dembele, S., Wang, C.J.</p> <p>Predicting radiative characteristics of hydrogen and hythane jet fires using firefoam</p>	<p>Paper Id No: 215 Briottet L., Moro I., Escot M., Furtado J., Sallais D., Dey R., Di Vito L., Acosta-Iborra B., Bortot P., Solin J.</p> <p>Material testing and design recommendations for components exposed to hydrogen enhanced fatigue – the mathryce project</p>
5:00-5:20	Break	
5:20-5:40	Closing Session Chair: M. Carcassi	
5:40-7:30	Free	
7:30	Gala Dinner	



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Conference Location

European Commission - Charlemagne Building
170, Rue de la Loi - 1049 Brussels



Conference Info

Conference Website: www.ichs2013.com



Contact

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