



PROGRAM

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SEPTEMBER 19-21, 2023

Quebec City Convention Centre
Québec City (Canada)

Presented by

Québec 



Credits: Francis Fontaine, Destination Québec cité

	Monday, September 18, 2023		
4:00-5:30 PM	Informal Reception (Hall 310 - Espace Urbain) and Registration (Hall 310)		
	Tuesday, September 19, 2023		
7:30 AM	Registration at Hall 310		
8:00 AM	Hall 309AB – Opening Session <i>Nick Smith, Gouvernement du Québec, RQE/UQTR, Pierre Bénard</i>		
	National and International Perspectives <i>Chairs: Nick Smith/Pierre Bénard (Simultaneous translation available for this session)</i>		
8:30 AM	La stratégie québécoise sur l'hydrogène et les bioénergies <i>Mathieu Payeur, Ministère de l'Économie, de l'Innovation et de l'Énergie</i>		
8:50 AM	Intégration de l'hydrogène dans la réglementation de la Régie du bâtiment du Québec <i>Jacques Renaud, Régie du Bâtiment du Québec</i>		
9:10 AM	Bien s'outiller pour utiliser l'hydrogène <i>Pascale Lepage, Bureau de Normalisation du Québec</i>		
9:30 AM	Korea Hydrogen economy and safety policy trends <i>Ousun Noh, Korea Gas Safety Corporation</i>		
9:50 AM	U.S. Department of Energy Hydrogen and Fuel Cell Remarks <i>Laura Hill, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy</i>		
10:10 AM	Clean Hydrogen Joint Undertaking Remarks <i>Alberto Garcia Hombrados, Clean Hydrogen Joint Undertaking, Europe</i>		
10:30 AM	Coffee Break		
	Hall 309A – Combustion and Interaction: Chair Andre Gaathaug	Hall 309B – Hydrogen Safety Aspects in Other Applications / Industries / Technologies (I): Chair Nick Smith	Hall 308B – Hydrogen Vehicle Tunnel Dispersion: Chair Marius Paraschivoiu
11:00 AM	ID126 – Experimental investigation of hydrogen–air flame propagation in fire extinguishing foam <i>Joachim Grune, Karsten Sempert, Dominik Kreutzburg, Thomas Jordan</i>	ID162 – The effect of natural ventilation through roof vents following hydrogen leaks in confined spaces <i>Joonsik Kim, Yangkyun Kim, Byoungjik Park, Unggi Yoon, Chankyu Kang</i>	ID127 – Hydrogen Dispersion in a full-scale road tunnel: Experimental results and CFD analysis <i>Clément Melin, Etienne Studer, Diana Forero, Gilles Bernard-Michel, François Sauzedde, Didier Bouix</i>
11:20 AM	ID139 – Numerical study of highly turbulent under-expanded hydrogen jet flames impinging walls <i>Lucien Gallen, Saad Sibawayh, Clément Louriou, Thomas Livebardon, Yannick Sommerer</i>	ID178 – Towards the Simulation of Hydrogen Leakage Scenarios in Closed Buildings Using containmentFoam <i>Khaled Yassin, Stephan Kelm, Ernst-Arndt Reinecke</i>	ID147 – Simulations of hydrogen dispersion from fuel cell vehicles' leakages inside full-scale tunnel <i>Nektarios Koutsourakis, Stella Giannissi, Ilias Tolias, Alexandros Venetsanos, Diana Forero, Etienne Studer</i>
11:40 AM	ID172 – Flame acceleration in stoichiometric methane/hydrogen/air mixtures in an obstructed channel: effect of hydrogen blend ratio <i>Chenyuan Cai, Jizhou Dong, Mingbin Zhao, Lei Liu, Min Li, Huahua Xiao</i>	ID286 – Numerical investigations of hydrogen release and dispersion due to silane decomposition in a ventilated container <i>Rocco Rotundo, Jianjun Xiao, Thomas Jordan, Daniele Melideo, Desideri Umberto</i>	ID154 – Hydrogen dispersion following blowdown releases into a tunnel <i>Kieran Lyons, Wayne Rattigan, Keith Moodie</i>
12:00 PM	ID247 – Validation of a hydrogen jet fire model in FDS <i>Wenqian Liu, Frank Markert, Luisa Giuliani, Andre Vagner Gaathaug, Simo Hostikka.</i>	ID251 – Experimental study on the ignition of hydrogen containing atmospheres by mechanical impacts <i>Enis Askar, Thomas Grunewald</i>	ID151 – CFD dispersion simulations of compressed hydrogen releases through TPRD inside scaled tunnel <i>Stella Giannissi, Alexandros Venetsanos, Wayne Rattigan, Kieran Lyons</i>
12:20 PM		ID125 – Accidental Releases of Hydrogen in Maintenance Garages: Modelling and Assessment <i>Aneesh John, Robert David, Zhe (Rita) Liang</i>	ID155 – Sudden releases of hydrogen into a tunnel <i>Kieran Lyons, Wayne Rattigan, Bruce Ewan, Keith Moodie, James Fletcher, Trystan Lang, Josh Moran, Keith Tremble</i>
12:40 PM		ID137 – A Multi-Zone Model for Hydrogen Accumulation and Ventilation in Enclosures <i>Marcus Runefors, Nils Johansson</i>	ID289 – Explosion mitigation techniques in tunnels and their applicability to scenarios of hydrogen tank rupture in a fire <i>Volodymyr Shentsov, Luisa Giuliani, Wenqian Liu, et.al.</i>

1:00 PM	Lunch		
	Hall 309A - Liquid and Cryogenic Hydrogen (1): Chair Yura Sevchenko	Hall 309B - Hydrogen Safety Aspects in Other Applications / Industries / Technologies (2): Chair Sebastien Quesnel	Hall 308B - Hydrogen Vehicles - Tunnel: Chair Wookyung Kim
2:00 PM	ID150 - The latest voyage of discovery – Quantifying the consequences of LH₂ releases for the marine industry <i>Steven Betteridge</i>	ID183 - Visualisation and quantification of wind-induced variability in hydrogen clouds following releases of liquid hydrogen <i>Ian Palin, Kieran Lyons, William Buttner, Simon Coldrick, Jonathan Hall, Graham Atkinson, Jacob Thorson, Mark Royle</i>	ID133 - Hydrogen Jet fires in a full-scale road tunnel: Experimental results <i>Etienne Studer, Diana Forero, Gilles Bernard-Michel, François Sauzedde, Didier Bouix, Sergey Kudriakov</i>
2:20 PM	ID152 - CFD modeling of large scale liquid hydrogen experiments indoors and outdoors <i>Stella Giannissi, Alexandros Venetsanos</i>	ID212 - Numerical simulation of liquid hydrogen evaporation in the pressurized tank during venting <i>Tanin Kangwanpongpan, Dmitriy Makarov, Donatella Cirrone, Vladimir Molkov</i>	ID192 - CFD analysis of delayed ignition hydrogen releases from a train inside a tunnel <i>Ilias Tolia, Wayne Rattigan, Kieran Lyons, Vasilis Koumroglou, Venetsanos Alexandros</i>
2:40 PM	ID189 - Analytical model of cryogenic hydrogen releases <i>Jiaxin Zhang, Qingxin Ba, Jinsheng Xiao, Christopher David M, Yue Liu, Chenyi Yao, Xuefang Li</i>	ID209 - A priority-based Failure Mode and Effects Analysis (FMEA) method for risk assessment of hydrogen applications onboard maritime vessels <i>Nikolaos P. Ventikos, Alexandros Koimtzoglou, Dimitrios Drivas, Vasileios C. Podimatas, Ioannis Kopsacheilis</i>	ID175 - Explosion free in fire self-venting (TPRD-less) composite tanks: performance under fire intervention conditions <i>Vladimir Molkov, Sergii Kashkarov, Dmitriy Makarov</i>
3:00 PM	ID197 - Flame acceleration, detonation limit and heat loss for hydrogen-oxygen mixture at cryogenic temperature of 77 K <i>Xiaobo Shen, Wenju Fu, Haifeng Liu, Jennifer X Wen</i>	ID134 - The Global Shift to Hydrogen and its Safe Use <i>Mike MacPhee, Carl Daniel, Graeme Cook</i>	ID156 - Deflagrations of non-uniform hydrogen/air clouds in a tunnel <i>Wayne Rattigan, Kieran Lyons, Keith Moodie, Bruce Ewan, James Fletcher, Graham Atkinson</i>
3:20 PM	ID207 - Numerical Simulation of Underexpanded Cryogenic Hydrogen Jets <i>Yunpeng Zhang, Shishuai Nie, Huan Liu, Anfeng Yu, Chenyi Yao, Qingxin Ba, Jinsheng Xiao, Xuefang Li</i>	ID169 - Hydrogen related accidents and lesson learned from events reported in the in east continental Asia <i>Bin Wang, Pietro Moretto, Georg Mair, Teresa Orellana Pérez</i>	ID113 - Erosive effects of hydrogen jet fires on tunnel structural materials <i>Sarah Bergin, Mark Pursell, James Fletcher, Mark Royle</i>
3:40 PM	Coffee Break		
	Hall 309A - Liquid and Cryogenic Hydrogen (2): Chair Jonathan Hall	Hall 309B - Hydrogen Safety Aspects in Other Applications / Industries / Technologies (3): Chair Ernie Reinecke	Hall 308B - Hydrogen Vehicles - Refueling Station: Chair Vladimir Molkov
4:00 PM	ID229 - Exploratory study of liquid hydrogen hazards <i>Bbaopeng Xu, Jennifer X Wen</i>	ID232 - Populating the Hydrogen Component Reliability Database (HyCReD) with Incident Data from Hydrogen Dispensing <i>Ahmad Al-Douri, Katrina Groth, Kevin Hartmann, Genevieve Saur, William Buttner</i>	ID128 - Zone of Negligible Extent: Example of specific detailed risk assessment for low pressure equipment in a hydrogen refuelling station <i>David Torrado, Ju Lynne Saw, Matthew Ivings, Sebastien Quesnel, Elena Vyazmina, Louise O'Sullivan, Deborah Houssin, et.al.</i>
4:20 PM	ID181 - Consequences of liquid hydrogen tank explosions <i>Federico Ustolin, Leonardo Giannini, Giulia Collina, Gabriele Tincani, Lucas Claussner, Ernesto Salzano, Valerio Cozzani</i>	ID214 - European hydrogen train the trainer framework for responders: outcomes of the hyresponder project <i>Sile Brennan, Didier Bouix, Christian Brauner, Dennis Davis, Natalie DeBacker, Alexander Dyck, Etienne Havret, Andre Gaathaug, César García-Hernández, Laurence Grand-Clement, Deborah Houssin, Petr Kupka, et.al</i>	ID269 - Designing an inherently safe H₂ infrastructure: Combining analytical, experimental, and numerical investigations to optimize H₂ refueling stations safety by passive mitigation <i>Deborah Houssin-Agbomson, Audrey Herzig, Andrew Autuore, Mike Molesworth, Victor Riso, Aurélien Soubeyran, Bo Lu, et.al.</i>
4:40 PM	ID290 - Liquid hydrogen pool formation and hydrogen evaporation above four different substrates <i>Andreas Friedrich, Anke Vesper, Natascha Kotchourko, Wolfgang Breitung, Mike Kuznetsov, Thomas Jordan</i>	ID124 - Hydrogen Behavior and Mitigation Measures: State of Knowledge and Database from Nuclear Community <i>Zhe Liang, Etienne Studer, Nabih Chaumeix, Ernie Reinecke, Sanjeev Gupta, Stephan Kelm, Ahmed Bentaib, Lee Gardner</i>	ID236 - Field test series for development of mitigation barriers and its designs against hydrogen explosion <i>Kwang Seok Kim, Ho Yun Joe</i>
5:00 PM	ID167 - Modelling the non-adiabatic blowdown of pressurised cryogenic hydrogen storage tank <i>Donatella Cirrone, Dmitriy Makarov, Sergii Kashkarov, Andreas Friedrich, Vladimir Molkov</i>	ID279 - AMHYCO project – advances in H₂/CO combustion, recombination and containment modelling <i>Gonzalo Jiménez, Ernst-Arend Reinecke, Luis Enrique Herranz, Ahmed Bentaib, Nabih Chaumeix, Matthias Braun, Marco Koch, Ivo Kljenak, Oleksandr Sevbo, et.al.</i>	ID263 - Identification of critical scenarios of hydrogen refuelling stations in a multifuel context <i>Sebastien Quesnel, Sylvaine Pique, Elena Vyazmina, Ju-Lynne Saw</i>

5:20 PM	ID195 – Safety of cryogenic liquid hydrogen – the gaps between existing knowhow and industry needs <i>Jennifer X Wen, Antoine Dutertre, Lee Lee Phillips, Christopher Proust, Benjamin Truchot, Felicia Tan, Gabriele Landucci, et.al.</i>	ID123 – Application of Passive Autocatalytic Recombiners for Hydrogen Mitigation: 2D Numerical Modeling and Experimental Validation <i>Marco Zanoni, Lee Gardner, Nirmal Gnanapragasam, Zhe Liang</i>	ID202 – Fuel Cell Vehicle Hydrogen Emissions Testing <i>David Pearman, William Buttner, Matthew Post</i>
5:40 PM	ID157 – Heat and mass transfer modeling of vacuum insulated vessel storing cryogenic liquid in loss of vacuum accident <i>Zhanjie Xu, Thomas Jordan, Andreas Friedrich, Steffen Vagts, Peter Friese, Anna Adamczyk</i>	ID206 – X-ray absorption spectroscopy study on hydrogen recombination catalysts of palladium nanoparticles on titanium oxide under wet condition <i>Daiju Matsumura, Tatsuya Aida, Takuro Aotani, Tadasuke Yamamoto, Kosuke Nakamura, et.al.</i>	ID219 – A new method to quantify the leakage scenarios (frequencies and flowrates) on hydrogen high pressure components <i>Christophe Proust, Sylvaine Pique, Albin Tarris, Didier Jamois</i>
6:00 PM	End of the Day		

	Wednesday, September 20, 2023		
8:00 AM	Registration at Hall 310		
	Hall 309AB – Stakeholders perspectives		
8:30 AM	Perspectives of Industry <i>Chairs: Lee Phillips and Nick Smith</i>		
8:35 AM	Hydrogen Safety, global vision for the complete supply chains (liquid H₂ and gaseous H₂) <i>Laurence Bernard, Air Liquide</i>		
8:50 AM	Balancing the cost of Safety <i>Matt Falzone, Shell</i>		
9:05 AM	Operating the First Hydrogen passenger train in America as part of a first functional hydrogen Ecosystem <i>Eric Rondeau, Alstom</i>		
9:20 AM	<i>Questions</i>		
9:30 AM	National initiatives <i>Chairs: Thomas Jordan and Jay Keller</i>		
9:35 AM	Hydrogen Safety in Canada – CNL Perspective <i>Ian Castillo, Canadian Nuclear Laboratories, Canadian Safety Initiative</i>		
9:50 AM	Alliance Hydrogen Safety <i>Manuela Jopen, German Reactor Safety Authority</i>		
10:05 AM	First Responders: Activities of the Italian National Fire Brigade on Hydrogen Safety <i>Eros Mannino, Italian Fire Brigade</i>		
10:20 AM	<i>Questions</i>		
10:30 AM	Coffee Break		
	Hall 309A – Shock Reflections: Chair Josue Melguizo	Hall 309B – Risk Assessment and Safety Management (I): Chair Frank Markert	Hall 308B – Hydrogen leak detection: Chair Regis Bauwens
11:00 AM	ID237 – Effect of methane addition on transition to detonation in hydrogen-air mixtures due to shock focusing in a 90 – degree corner <i>Shamma Khair Allah, Wojciech Rudy, Jose Bermudez De La Hoz, Andrzej Teodorczyk</i>	ID299 – Overview of International Activities in Hydrogen System Safety in IEA Hydrogen TCP Task 43 <i>Katrina Groth, Ahmad Al-Douri, William Buttner, Kanchan Dutta, Leonardo Giannini, Per Hansen, Kevin Hartmann, Yiliu Liu, et.al.</i>	ID266 – Gas leak detection using acoustics and artificial intelligence <i>Florent Masson, Yann Martelet, Julien Preuilly, Déborah Houssin, Xavier Watremez</i>
11:20 AM	ID249 – Numerical Simulation of Transition to Detonation in a Hydrogen-Air Mixture Due to Shock Wave Focusing on a 90-Deg Wedge <i>Jose Bermudez De La Hoz, Wojciech Rudy, Shamma Khair Allah, Andrzej Teodorczyk</i>	ID211 – Public perception of hydrogen: response to an open-ended question <i>Efthymia Derempouka, Ove Njå, Trygve Skjold, Håvard Haarstad, Endre Meyer Tvinnereim</i>	ID285 – Very low-cost wireless hydrogen leak detection for hydrogen infrastructure <i>William Hoagland, Julie A. Bannantine, Rodney D. Smith</i>
11:40 AM	ID115 – SSEXHY experimental results on pressure dynamics from head-on reflections of hydrogen flames. <i>Sergey Koudriakov, Etienne Studer, Pierre-Alexandre Masset, Alexis Dancelme, Christian Tenaud</i>	ID253 – Case study: quantitative risk assessment of hydrogen blended natural gas for an existing distribution network and end-use equipment in Fort Saskatchewan, Alberta <i>Zoe Elizabeth Wattis, Andrew Phillips, Kalen Jensen</i>	ID234 – Design of long-life wireless near-field hydrogen gas detection system <i>Xintao Deng, Tianze Wang, Fuyuan Yang, Minggao Ouyang</i>

12:00 PM	ID116 – Deflagration-to-Detonation Transition due to a Pressurized Release of a Hydrogen Jet. First Results of the ongoing TAU-NRCN-CEA project. <i>Yoram Kozak, Liel Ishay, Etienne Studer, Sergey Koudriakov</i>	ID227 – Social risk approach for large scale hydrogen systems <i>Tadahiro Shibutani, Shunichi Hienuki, Ove Njå, Dimitrios Tzioutzios, Federico Ustolin, Shoji Kamiya, Karina Groth, Albert Law</i>	ID149 – A non-dimensional surrogate model of stratified filling during indoor, plume-like hydrogen releases <i>Joren Vanlaere, Patrick Hendrick, Julien Blondeau</i>
12:20 PM	ID223 – Pressure evolution from head-on reflection of high-speed deflagration in hydrogen mixtures <i>Hongxia Yang, Wentian Wang, Aliou Sow, Matei Radulescu</i>	ID160 – Developing a Generalized Framework for Assessing Safety of Hydrogen Vehicles in Tunnels <i>Benjamin Schroeder, Brian Ehrhart, Dusty Brooks, Gabriela Bran Anleu, Myra Blaylock</i>	ID194 – The NREL Sensor Laboratory: Hydrogen Leak Detection for Large Scale Deployments <i>Matthew Post, William Buttner, David Pearman, Kevin Hartmann</i>
12:40 PM	ID245 – Modeling of tube deformation and failure under conditions of hydrogen detonation <i>Alexei Kotchourko, Alexander Lelyakin, Stefan Offermanns Stefan Offermanns, Thomas Jordan</i>	ID140 – Methodology for consequence-based setback distance calculations for bulk liquid hydrogen storage systems <i>Ethan S. Hecht, Brian D. Ehrhart, Benjamin B. Schroeder</i>	ID225 – CFD analysis of hydrogen leakage from a small hole in a sloping roof hydrogen refueling station <i>Weiyi Cui, Liang Tong, Yupeng Yuan, Chengqing Yuan</i>
1:00 PM	Lunch		
	Hall 309A – Detonations / Explosions: Chair Matei Radulescu	Hall 309B – Risk Assessment and Safety Management (2): Chair Rita Liang	Hall 308B – Safety in Hydrogen Infrastructure: Chair Thomas Jordan
2:00 PM	ID203 – Examining the Nature of Two-dimensional Transverse Waves in Marginal Hydrogen Detonations Using Boundary Layer Loss Modeling With Detailed Chemistry <i>Joshua Smith, Curran Schmitt, Qiang Xiao, Brian Maxwell</i>	ID292 – IEA TCP Task 43- subtask Safety Distances: state on the art <i>Elena Vyazmina, Guy de Reals, Richard Chang, Lee Phillips, Sebastien Quesnel, Benjamin Truchot, Jerome Hocquet, David Torrado Beltran, Marcus Runefors, Brian David Ehrhart, Thomas Jordan</i>	ID161 – Safe design for large scale H₂ production facilities <i>Charles Lefevre, Alejandro Rosino Messa, Olivier Rambert, Sébastien Quesnel</i>
2:20 PM	ID280 – Unconfined hydrogen detonations: experiments, modelling, scaling <i>Mike Kuznetsov, Alexander Lelyakin, Jianjun Xiao, Wolfgang Breitung, Daniel Banuti</i>	ID120 – Quantitative Risk Assessment for Hydrogen Systems: Model Development & Validation <i>Kanchan Dutta, Robert David, Zhe (Rita) Liang</i>	ID131 – Purging hydrogen distribution pipelines: literature review, description of recent experiments and proposed future work <i>Simon Gant, Simon Coldrick, Jonathan Hall, Russ Oxley, Ryan Mallinder, et.al.</i>
2:40 PM	ID135 – Experimental study of the mitigation of hydrogen-air explosions by aqueous foam <i>Jérôme Daubech, Emmanuel Leprette, Thomas Trautsolt, Namane Mechitoua, et.al.</i>	ID119 – Risk Sensitivity Study as the Basis for Risk-Informed Consequence-Based Setback Distances for Liquid Hydrogen Storage Systems <i>Brian Ehrhart, Benjamin Schroeder, Ethan Hecht</i>	ID132 – Hydrogen Recombiners for Non-Nuclear Hydrogen Safety: Environmental Conditions and Testing <i>Lee Gardner, Zhe Liang, Murphy Joshua, Ibeh Blessing, Michelle Thomas, Cotosman Stefan</i>
3:00 PM	ID136 – Experimental study of the mitigation of hydrogen-air explosions by inhibiting powder <i>Jérôme Daubech, Emmanuel Leprette, Thomas Trautsolt, Namane Mechitoua, et.al.</i>	ID218 – QRA of hydrogen vehicles in a road tunnel <i>Paola Russo, Frank Markert, Sergii Kashkarov, Mike Kuznetsov, Vladimir Molkov</i>	ID282 – Public Facing Safety and Education for Hydrogen Fueling Infrastructure <i>Jake Grant</i>
3:20 PM	ID164 – Experiments and Simulations of Large Scale Hydrogen-Nitrogen-Air Gas Explosions for Nuclear and Hydrogen Safety Applications <i>Melodia Lucas, Nicolas Salaün, Gordon Atanga, Brian Wilkins, et.al.</i>	ID272 – Safety Calculations for Emerging Technologies <i>Jessica Guzzetta-King, Samuel Richardson.</i>	ID258 – Design for Reliability and Safety: challenges and opportunities in hydrogen mobility assets <i>Juan Hernandez Bello</i>
3:40 PM	Coffee Break		
	Hall 309A – Fast Flames and Detonation: Chair Enis Askar	Hall 309B – Regulations, Codes and Standards (RCS): Chair Lee Phillips	Hall 308B – Hydrogen Vehicles Fueling: Chair Etienne Studer
4:00 PM	ID129 – Large Eddy Simulations of a H₂-air explosion in an obstructed chamber using Adaptive Mesh Refinement. <i>Benjamin Vanbersel, Francís Adrián Meziat Ramirez, Olivier Vermorel, Thomas Jaravel, Quentin Douasbin, Omar Dounia</i>	ID143 – Nuclear Enabled Hydrogen Co-generation: Safety and Regulatory Insight <i>Stephen Lawton, Howard Chapman, Dr. Joe Hargreaves</i>	ID200 – Engineering models for refueling protocol development: validation and recommendations. <i>Fouad Ammouri, Nicola Bienvenuti, Elena Vyazmina, Vincent Ren, Guillaume Lodier, Quentin Nouvelot, Thomas Guewouo, et.al.</i>
4:20 PM	ID166 – Effect of wall friction on shock-flame interactions in a hydrogen-air mixture <i>Ting Shen, Huahua Xiao</i>	ID235 – Analysis and comparison of hydrogen generators safety measures in accordance with international regulations, codes and standards (RCS) <i>Michele Mazzaro, Jacopo Moretti, Claudio Ceccherini, Paola Russo, Antonio Lucci</i>	ID148 – Thermocouple thermal inertia during refuelling of hydrogen tanks: CFD validation <i>Vincent Ren, Guillaume Lodier, Fouad Ammouri</i>

4:40 PM	ID220 – Role of flame-expansion wave interactions on burning rate enhancement and flame acceleration in hydrogen-air mixtures <i>Kevin Cheevers, Hongxia Yang, Andrzej Pekalski, Matei Radulescu</i>	ID300 – The regulatory framework of geological storage of hydrogen in salt caverns <i>Benno Weinberger, Hippolyte Djizanne, Sylvaine Pique, Franz Lahaie, Andreas Bannach, Torsten Wagler, Richard Stevenson, Richard Applewhite</i>	ID198 – CFD modelling of startup fuelling phase accounting all hydrogen refuelling station components <i>Hazhir Ebne-Abbasi, Dmitriy Makarov, Vladimir Molkov</i>
5:00 PM	ID242 – Simulation of DDT in obstructed channels: wavy walls vs. fence-type obstacles <i>Leonardo Nuti, Josue Melguizo-Gavilanes</i>	ID213 – Strength of Knowledge and Uncertainties in Safety Regulation of Hydrogen as an Energy Carrier <i>Brynild Stavland, Ove Njå</i>	ID179 – Enhancing safety of liquid and vaporised hydrogen transfer technologies in public areas for mobile applications <i>Federico Ustolin, Donatella Cirrone, Vladimir Molkov, Dmitriy Makarov, Alexandros Venetsanos, Stella Giannissi, et.al.</i>
5:20 PM	ID264 – Numerical Investigation of Combustion Behavior Induced by Shock Wave in Combustible Jet Trains <i>Moeno Miyashita, Akiko Matsuo, Eiji Shima, Noboru Itouyama, Akira Kawasaki, Ken Matsuoka, Jiro Kasahara</i>		ID231 – Buoyant jet model to predict a vertical thermal stratification during refueling of gaseous hydrogen tanks in horizontal position with axial injection <i>Rémi Gonin, Fouad Ammouri, Elena Vyazmina, Rémi Bourguet, David Fabre</i>
5:40 PM	ID273 – A thermodynamically consistent methodology to develop predictive simplified kinetics for detonation simulations <i>Alejandro Millan-Merino, Said Taileb, Fernando Veiga-Lopez, Josue Melguizo-Gavilanes, Pierre Boivin</i>		ID260 – Improvement of MC method in SAE J2601 hydrogen refuelling protocol using dual-zone dual-temperature model <i>Hao Luo, Jinsheng Xiao, Pierre Bénard, Richard Chahine, Liang Tong, Yupeng Yuan, Tianqi Yang, Cenglin Yao</i>
6:00 PM	End of the Day		
7:30 PM	Gala Dinner: Musée de la civilisation, 85 Rue Dalhousie, Québec, QC G1K 8R2		

	Thursday, September 21, 2023		
	Hall 309A – Power to Hydrogen and Hydrogen to Power Related Safety Issues: Chair Nick Smith	Hall 309A – Hydrogen Effects on Materials and Components: Chair Benno Weinberger	Hall 308B – Deflagrations / Dispersion: Chair Jennifer Wen
8:30 AM	ID233 – Lessons Learned from Large Scale Hydrogen Production Project <i>Stephan Montel, Jeffrey Martin, Andrew Crerand</i>	ID121 – Economical Repurposing Pipelines to Hydrogen – Why performance testing of representative materials is key <i>Daniel Sandana, Neil Gallon, Ollie Burkinshaw</i>	ID199 – Numerical simulations of the critical diameter and flame stability for hydrogen jet flames <i>Mina Kazemi, Sile Brennan, Vladimir Molkov</i>
8:50 AM	ID275 – Calculating the fundamental parameters to assess the explosion risk due to crossover in electrolyzers <i>Kodjo Coudoro, Simon Jallais, Laurence Bernard</i>	ID159 – Hydrogen Equipment Enclosure Risk Reduction through Earlier Detection of Component Failures <i>Kevin Hartmann, Andrei Tchouvelev, Benjamin Angers, Jacob Thorson, Ahmad Al-Douri, Katrina Groth, William Buttner</i>	ID204 – Experimental study on the effect of the ignition location on vented deflagration of hydrogen-air mixtures in enclosure <i>Ung-Gi Yoon, Yangkyun Kim, Byoungjik Park, Joon-Sik Kim, Woogyung Kim</i>
9:10 AM	ID190 – Hydrogen passive autocatalytic recombiner overcoming CO poisoning <i>Hirohisa Tanaka, Kohei Inagawa, Takuro Aotani, Shinya Uegaki, Tomohito Nakayama, Daiju Matsumura, Masashi Taniguchi, Ahmed Beantaib, Nabiha Chaumeix, Ernst-Arndt Reinecke</i>	ID210 – Experimental investigation of fluid-structure interaction in the case of hydrogen/air detonation impacting a thin plate <i>Alexis Dancelme, Kudriakov Sergey, Studer Etienne, Tenaud Christian</i>	ID208 – Modelling of hydrogen dispersion with EFFECTS <i>Andreas Mack, Hans Boot</i>
9:30 AM	ID243 – An improved passive scalar model for hazardous H₂-Air ignition prediction <i>Marc Le Boursicaud, Song Zhao, Jean-Louis Consalvi, Pierre Boivin</i>	ID239 – CO₂ effect on the fatigue crack growth of X80 pipeline steel in hydrogen-enriched natural gas: Experiment vs Density functional theory calculation <i>Juan Shang, Baihui Xing, Haotian Wei, Zhengli Hua, Jinyang Zheng</i>	ID252 – Detailed Assessment of Dispersion for High-Pressure H₂ in Multi-fuel Environment <i>Elena Vyazmina, Deborah Houssin, James Stewart, Matthew Iving, Chris Dixon, Guillaume Lecocq</i>
9:50 AM	ID297 – Safety challenges related to the use of hydrogen/natural gas blends in gas turbines <i>Guillaume Lecocq, Christophe Proust, Emmanuel Leprette, Jérôme Daubech, Pierre Montagne, Eric Impellizzeri, et.al.</i>		ID262 – CFD simulation and ANN prediction of hydrogen leakage and diffusion behavior in a hydrogen refuelling station <i>Yaze Li, Nianfeng Xu, Min Liu, Liang Tong, Chengqing Yuan, Tianqi Yang, et.al.</i>
10:10 AM	Coffee Break		

	Hall 309A - Safety Issues of Hydrogen Batch Transport & Distribution: Chair Jay Keller	Hall 309B - Energy Storage Systems: Chair Daniele Melideo	Hall 308B - Miscellaneous: Chair Christine Watson
10:30 AM	ID230 - Launch of the STACY project - Towards safe storage and transportation of cryogenic hydrogen <i>Ernst-Arndt Reinecke, Ahmed Bentaib, Nabiha Chaumeix, Hirohisa Tanaka, Yves Ballossier, Shannon Krenz</i>	ID163 - Numerical simulation of pressure recovery phenomenon in liquid ammonia tank <i>Srinivas Sivaraman, Dmitriy Makarov, Vladimir Molkov</i>	ID298 - Gas crossover predictive modelling using artificial neural networks based on original dataset through aspen custom modeler for proton exchange membrane electrolyte system <i>Jing Dang, Yi Liu, Meng Qi, Zhongxu He, et.al.</i>
10:50 AM	ID109 - A model for assessing the risk of liquid hydrogen transport through road tunnels <i>Ciro Caliendo, Gianluca Genovese, Frank Markert, Paola Russo</i>	ID104 - Safety aspects related to the underground hydrogen storage <i>Franco Polidoro</i>	ID267 - Hydrogen release modelling for real-time analysis using data-driven autoencoder with convolutional neural networks <i>Yunqing Xu, Jing Dang, Yi Liu</i>
11:10 AM	ID122 - Experimental characterization of the operational behavior of a catalytic recombiner for hydrogen mitigation <i>Shannon Krenz, Ernst-Arndt Reinecke, Hirohisa Tanaka, Ahmed Bentaib, Nabiha Chaumeix</i>	ID145 - Computational fluid dynamic (CFD) analysis of a cold-adsorbed hydrogen tank during refilling <i>Daniele Melideo, Lorenzo Ferrari, Paolo Taddei</i>	ID112 - A new dimensionless number for type iv composite pressure vessel designer to increase efficiency and reduce cost <i>Stephane Villalonga</i>
11:30 AM	ID240 - Study on the inherent safety of on-board methanol reforming hydrogen production fuel cell system <i>Zijian Deng, Mingqi Bai, Haowen Qu, Yi Liu</i>	ID146 - Risk management in a containerized metal hydride storage system <i>Alejandro Rosino Messa, Sebastien Quesnel, José M. Bellosta Von Colbe, Ante Mirko, et.al.</i>	ID270 - Investigation of the suitability of Viper::Blast CFD software for hydrogen and vapor cloud explosions <i>Will Wholey, Daniel Aggromito, Christopher Stirling, Julia Abboud</i>
11:50 AM	ID188 - Explosion replication test of fcev hydrogen tank <i>Byoungjik Park, Yangkyun Kim</i>		ID138 - LES of turbulent under-expanded hydrogen jet flames <i>Lucien Gallen, Thomas Livebardon, Yannick Sommerer</i>
12:10 PM	Lunch		
	Hall 309AB - Hydrogen for Heat: Chair Trygve Skjold		Hall 308B - Venting, Dispersion and Ignition: Chair Mike Kuznetsov
1:10 PM	ID114 - Ignition and Flow Stopping Considerations for the Transmission of Hydrogen in the Existing Natural Gas Network <i>Richard Goff, Jonathan Hall</i>		ID254 - Performance comparison of hydrogen dispersion models in enclosure adapted to forced ventilation <i>Aurelien Soubeyran, Simon Jallais, Deborah Houssin</i>
1:30 PM	ID144 - Flame visibility in hydrogen appliances <i>Douglas Proud, Adam Gee, Michael Evans, Neil Smith, Paul Medwell</i>		ID141 - Dispersion of under-expanded hydrogen-methane blended jets through a circular orifice <i>Gopakumar Ramachandran, Ethan S. Hecht</i>
1:50 PM	ID177 - UK HSE hydrogen for heating evidence review process <i>Mike Wardman, Kelli Jones</i>		ID142 - Dispersion, ignition, and combustion characteristics of low-pressure hydrogen-methane blends <i>Gopakumar Ramachandran, Ethan S. Hecht</i>
2:10 PM	ID271 - Impact On Canadian Residential End Use Appliances With The Introduction Of Hydrogen Into The Natural Gas Stream - An Application <i>Sander Gersen, Martijn Van Essen, Laura Pysyk</i>		ID170 - GT enclosure dispersion analysis with different CFD tools <i>Gabriele Lucherini, Stefano Minotti, Eugenio Quartieri, Elena De Leo</i>
	Hall 309AB - Closing Session. Chairs: Marco Carcassi and Pierre Bénard		
3:00 PM	Status of Activities of ISO/TC197 Hydrogen Technologies <i>Tetsufumi Ikeda, Association of Hydrogen Supply and Utilization Technology (HySUT)</i>		
3:15 PM	Applied Hydrogen Safety: Needs, Resources, and Opportunity <i>Leonard Pease, Center for Hydrogen Safety</i>		
3:30 PM	HySafe Research Priorities <i>Jay Keller, Hysafe</i>		
3:45 PM	Best paper award <i>Jay Keller, Hysafe</i>		
4:00 PM	ICHS 2025 In Korea <i>Yunyoung Yang, Korea Gas Safety Corporation</i>		
4:30 PM	Closing comments <i>Nick Smith, Marco Carcassi and Pierre Bénard</i>		
5:00 PM	End of the Day		

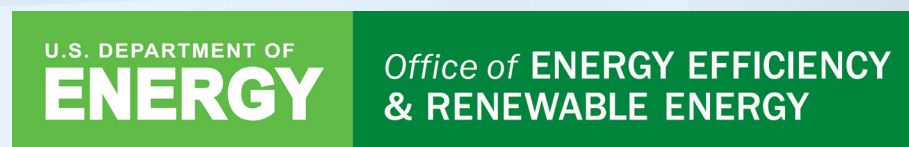
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