



ADELAIDE AUSTRALIA

2019



ORGANIZED BY



HySafe and the South Australian Government invite you to the unique **ICHS2019 - INTERNATIONAL CONFERENCE ON HYDROGEN SAFETY**

*"Hydrogen for the global market"*

**Adelaide on 24-26 September 2019**

WITH THE ENDORSEMENT OF



IN COLLABORATION WITH



CONFERENCE SCOPE

The 8th International Conference on Hydrogen Safety (ICHS 2019) will be held in Adelaide, Australia on 24-26 September 2019 under the auspices of the International Association for Hydrogen Safety (HySafe). The first seven conferences in 2005 to 2017, succeeded in attracting the most relevant experts from all over the world, by providing an open platform for the presentation and discussion of new findings, information and data on hydrogen safety - from basic research to applied development and from good practice to standardization and regulatory issues.

South Australia has a natural endowment of sunshine and prevailing winds that have attracted substantial investment in renewable energy with over 50% of energy now provided by this segment. Hydrogen is beginning to play a greater role in the transition to clean, safe and sustainable energy systems for energy storage and transport regionally and globally.



The South Australian Government, transport and energy industry leaders and research institutions recognize the emerging opportunity in the coming decade to accelerate the transition to a hydrogen economy and the importance of developing safe methods and appropriate regulatory frameworks to facilitate the transition.

The conference organizational teams seek papers in a wide range of hydrogen safety topics like (but not limited to) safety of large production and supply chain infrastructure, hydrogen and hydrogen carrier behaviours, physical effects, consequence and risk analysis, incidents, accidents and near misses, hydrogen effects on materials and components, safety of energy storage, power to gas/gas to power related safety issues, safety solutions for the implementation of hydrogen technologies, risk management, best practices, regulations, codes and standards as well as communication strategies.

An even more detailed list of ICHS 2019 themes and topics is shown below.

All contributions to ICHS 2019 will be evaluated exclusively in the light of their scientific content and relevance to hydrogen safety.

## CONFERENCE STRUCTURE

ICHS 2019 will include thematic plenary sessions, topical lectures, and parallel oral and poster sessions. The conference seeks to facilitate (enable/strengthen) the near-term introduction and global trade of hydrogen and its technologies in the market place.

## ORGANIZING COMMITTEE

Nick Smith, Thomas Jordan, Stuart Hawksworth, Iñaki Azkarate, Hervé Barthélémy, Marco Carcassi, Jay Keller, Frank Markert, Akiteru Maruta, Pietro Moretto, Andrei Tchouvelev, Edit Mucsi, Attilio Pigneri, Richard Day.

## SCIENTIFIC COMMITTEE

Marco Carcassi, Thomas Jordan, Iñaki Azkarate, Nick Barillo, Herve Barthelemy, Luc Bauwens, Pierre Benard, Gilles Bernard-Michel, Dag Bjerketvedt, Francesco Dolci, Sergey Dorofeev, Stuart Hawksworth, Shoji Kamiya, Jay Keller, Stephan Kelm, Armin Keßler, John Khalil, Alexei Kotchourko, Agostino Iacobazzi, Tolomeo Litterio, Dmitriy Makarov, Frank Markert, Akiteru Maruta, Akiko Matsuo, Michele Mazzaro, Josue Melguizo-Gavilanes, Daniele Melideo, Vladimir Molkov, Pietro Moretto,



## THEMES AND TOPICS

Beatriz Nieto, Ernst-Arndt Reinecke, Pratap Sathiah, Ulrich Schmidtchen, Nick Smith, Trygve Skjold, Andrei Tchouvelev, Andrzej Teodoreczyk, Piet Timmers, Alexandros Venetsanos, Changjian Wang, Benno Weinberger, Jennifer Wen, Jinyang Zheng.

### **Behaviour of gaseous and liquid hydrogen and hydrogen mixtures**

- Release, dispersion
- Ignition and quenching
- Combustion: fire, deflagration, detonation, transitional effects

### **Physical effects, consequence analysis**

- Thermal, overpressure, missile effects
- Effects on humans and environments
- Incidents, accidents and near misses

### **Hydrogen effects on materials and components**

- Embrittlement
- Permeation/blistering
- Liquid hydrogen compatibility

### **Risk / safety management**

- Hazard identification and analysis
- Risk assessment (cost-benefit analysis, safety perception, acceptance and harm criteria, uncertainties, decision making, human factor)
- Risk-informed safety engineering
- Prevention and mitigation (active, passive, sensors, safety distances)
- Insurance
- Safety solutions and implementation of hydrogen technologies

### **Regulations Codes and Standard (RCS)**

- Pre-normative research (needs, approaches, incorporation of QRA)
- Post normative experience (case studies)
- Comparison/compatibility with other fuels
- Safety of hydrogen carriers in regional/international trade (e.g. shipping, rail, pipelines)
- Permitting of large scale applications

### **Communication, Education, and training**

- Stakeholder communication (policy, financial and communities)
- Public perception and acceptance
- First and second responders training
- Safety databases and lessons learnt
- Technician training



### **Safety in hydrogen infrastructure**

- Production
- Storage, distribution and transport (pipelines, gaseous, liquid, other chemical carriers)
- Handling and use
- Shipping road and rail transport

### **Power to Hydrogen and Hydrogen to Power related safety issues**

- Risk assessment
- Safety of material
- Normative or pre-normative

### **H2 fuelling stations deployment experience**

- Safe design
- Indoor/outdoor fuelling
- Permitting
- Mitigation practices
- Co-location with other fuelling option
- Mixed/blended hydrogen fuels (HCNG)
- HCNG

### **Safety in hydrogen vehicle / station interface**

- On-board storage
- Vehicle operation in tunnels and garages
- Material handling and operations in warehouses

### **Hydrogen Safety aspects in other applications / industries / technologies**

- Chemical plants
- Oil refinery
- Space-aircrafts-Unmanned Aerial Vehicles (drones)
- Nuclear
- Defence applications
- Maritime applications e.g boats, submarines
- Mining industry
- Semiconductor/electronic industries, electrical generators, neutron beams and other fundamental experiments
- Residential applications of hydrogen and mixtures
- Heat

### **Energy storage systems**

- Pressurised and Liquid storage
- H2 solid-storage materials
- Grid scale storage



## CONTRIBUTED PAPERS

Conference attendees who wish to present a paper are required to submit a short abstract (up to 250 words). When submitting the abstract/paper, authors can express a preference for the presenting their work in an oral session or in the poster session or no preference. Authors whose abstract has been accepted will be asked to submit a full paper which will be peer-reviewed. The evaluation will be forwarded to the authors by e-mail. All accepted papers (oral and poster) will be published with the same format in the proceedings of the conference.

Abstract submission instructions will be available on the conference website from June 1, 2018: [www.ichs2019.com](http://www.ichs2019.com)

Registration will be accepted only in electronic form on the conference website: [www.ichs2019.com](http://www.ichs2019.com)

For more information, contact: Edit Mucsi email: [ichs@hysafe.org](mailto:ichs@hysafe.org)  
Conference website: [www.ichs2019.com](http://www.ichs2019.com)

## KEY DEADLINES

Key deadlines for contributed papers are detailed below.

- Conference website open for abstracts submission: **June 1, 2018**
- Abstracts deadline: **January 25, 2019**
- Abstracts acceptance notification: **January 31, 2019**
- Full papers submission: **March 31, 2019**
- Paper acceptance notification: **June 1, 2019**
- Submission of papers final versions and payment of conference fees: **July 15, 2019**
- ICHS Conference: **September 24-26, 2019**

## CONFERENCE LOCATION

**Adelaide Convention Centre (ACC) - Adelaide - Australia**

## CONFERENCE LANGUAGE

English

## CONFERENCE WEBSITE

[www.ichs2019.com](http://www.ichs2019.com)

  
**ICHS<sup>®</sup> STORY**  
International Conference  
on Hydrogen Safety

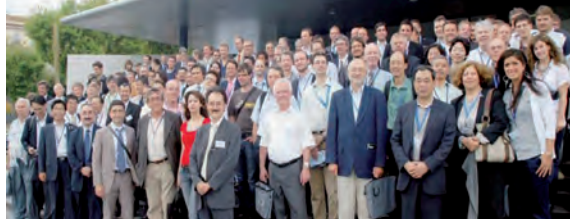
**2005  
PISA (IT)**



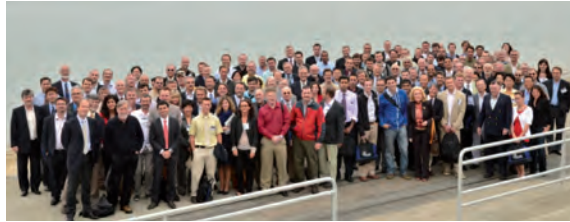
**2007  
S. SEBASTIAN (SP)**



**2009  
AJACCIO (FR)**



**2011  
S. FRANCISCO (USA)**



**2013  
BRUSSELS (BE)**



**2015  
YOKOHAMA (JP)**



**2017  
HAMBURG (DE)**

