TECHNICAL NOTE

First HySEA Newsletter

HySEA Deliverable D4-03

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The HySEA project is co-funded by the Horizon 2020 programme of the European Union through the Fuel Cells and Hydrogen 2 Joint Undertaking.
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1 Newsletter

Universita di Pisa distributed the first Newsletter from the HySEA project to 2195 recipients on Saturday 28 November 2015. The primary focus in the first issue is to raise awareness of the project and the project website: www.hysea.eu

Appendix

The newsletter is included on the following page.
EDITORIAL

The HySEA project started on 1 September 2015 and will continue for three years. The consortium partners will conduct pre-normative research on verified hydrogen safety in ISO containers and smaller enclosures. The motivation behind the project is to facilitate the safe and successful introduction of hydrogen as an energy carrier through improvement and harmonisation of international standards for sizing explosion vents for hydrogen installations. This research project will determine the best experimental and numerical engineering models to design appropriate data for hydrogen explosion vent sizing. Information on the project can be found on the website at www.hys-SEA-project.com.

Trygve Skjøld (R&D Director, Genser AS)
HYSEA Coordinator
Bert de Gobertenaert (Executive Director of the Fuel Cells and Hydrogen Joint Undertaking)
at ICHG2015 Conference in Yokohama

PARTNERS

The partners in the HySEA consortium are Genser (coordination), University of Warwick, Università di Pisa, Imperial College London, DLR, Europe and University of Science and Technology of China (USTC).

OVERVIEW

The partners in the HySEA consortium have extensive experience from experimental and numerical investigations of hydrogen explosions. The experimental program features full-scale vented explosion experiments on small ISO containers, including the effect of obstacles representative of industrial situations.

The project also entails the development of a hierarchy of predictive models, ranging from simple engineering models to sophisticated computational fluid dynamics (CFD) and finite element (FE) tools. The specific objectives of HySEA are:

- To generate experimental data of high quality for vented explosions in real-life enclosures and containers with congestion levels representative of industrial situations;
- To characterise different strategies for explosion venting, including hinged doors, natural vent openings and commercial vent panels;
- To develop the largest scientific and industrial safety community to submit test predictions for the reduced explosion pressure in isolated well-defined explosion scenarios;
- To develop, verify and validate engineering models and CFD-based tools for reliable predictions of pressure loads in vented explosions;
- To develop and validate predictive tools for overpressure (P5) and impulse (dP/dt), and produce P5 diagrams for typical situations with reference for hydrogen energy applications;
- To use validated CFD codes to explore explosion-induced wave pressures in larger enclosures, such as warehouses; and
- To formulate recommendations for improvements to European (EN 15346), American (NFPA 68), and other relevant standards for vented explosions.

ORGANIZATION

The scope of the work includes full-scale experiments in containers with obstacles representative of industrial systems, development and validation of engineering and CFD models, and formulation of recommendations for international standards. The figure on the left illustrates the relation between the five work packages.

EVENTS

1 September 2015: Official start-up of the HySEA project. The project duration is three years.
18-19 September 2015: Genser hosted the kick-off meeting for the HySEA project in Bergen, Norway on 18-19 September 2015.
19-21 October 2015: Partners from the HySEA project presented the project during the Sixth International Conference on Hydrogen Safety (ICHS-6) in Yokohama, Japan. The dissemination activities included a poster, flyers and informative oral presentations during the conference.

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