LATEST NEWS HYLANTIC PROJECT

International School “Progress in Hydrogen Safety”

The International School “Progress in Hydrogen Safety” within HYLANTIC project “Atlantic Network for Renewable Generation and Supply of Hydrogen to promote High Energy Efficiency” was held in Belfast (UK) on March 11-15, 2019. The event was organized by Ulster University in close collaboration with other partners of the HYLANTIC project.

The school aimed at dissemination of beyond the-state-of-the art knowledge in hydrogen safety, innovative safety strategies and engineering solutions, and building stronger ties between industry, academia, regulators and standard development organizations. It was an excellent training opportunity to meet and communicate with world leading experts in hydrogen safety.

Follow-up Meeting, Belfast, United Kingdom

The third follow-up meeting of the European Project “Atlantic Network for Renewable Generation and Supply of Hydrogen to promote high energy efficiency – HYLANTIC” was held in Belfast on March 15th, 2019 and it was hosted by the project partners from Ulster University. During the meeting the partners from the different institutions of the Atlantic Area presented their progresses in the project and discuss about the future actions to be done before next meeting that will take place in Bristol in October 2019.

Survey Results

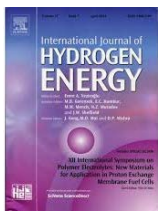
HYLANTIC project has assessed the social perception of hydrogen as energy resource based on the current social understanding of the costs and benefits of hydrogen as energy resource compared to current alternatives, through a survey made to 200 people of different countries of the Atlantic Area (Spain, France, Portugal, Ireland and United Kingdom.

The main results obtained by APRIA Systems are available on:

http://hylantic.com/wp-content/uploads/2019/05/Task-7.1.-Survey-Summary-Report.pdf

PUBLICATIONS

J. Corredor, M. J. Rivero, C.M. Rangel, F. Gloaguen, I. Ortiz. **Comprehensive review and future perspectives on the photocatalytic hydrogen production**. Journal of Chemical Technology and Biotechnology. Article in press. 2019.



V. Molkov, M. Dadashzadeh, D. Makarov. **Physical model of onboard hydrogen storage tank thermal behavior during fueling**. International Journal of Hydrogen Energy 44, 4374-4384, 2019.

T. Baalisampang, R. Abbasi, V. Garaniya, F. Khan, M. Dadashzadeh. **Review and analysis of fire and explosion accidents in maritime transportation**. Review Article. Ocean Engineering 158, 350-366, 2018.

CONGRESSES

ISFEH 9, Saint Petersburg, Russia, April 21 – 26, 2019

Several members of HYSAFER attended the **9th International Seminar on Fire and Explosion Hazards**, where they presented the following works:

- Shentsov V., Makarov D., Molkov V. "Scientific Principles of e-Laboratory of Hydrogen Safety"
- Shentsov V., Makarov D., Dery W. "Stand-Alone Hemisphere-Tank Rupture in Tunnel Fire: Effect of Hydrogen Inventory on Blast Wave Strength in Far Field";
- Cirrone D., Makarov D., Molkov V. "Near Field Thermal Dose of Cryogenic Hydrogen Jet Fires";
- Dadashzadeh M., Makarov D., Molkov V. "Modelling of Hydrogen Tank Fuelling";
- Hussein H.G., Brennan S., Makarov D., Shentsov V., Molkov V. "Safety Considerations of an Unignited Hydrogen Release from Onboard Storage in a Naturally Ventilated Covered Car Park".

WHTC 2019, Tokyo, Japan, June 2 – 7, 2019

María José Rivero, Alfredo Ortiz and Rafael Ortiz, from the University of Cantabria team, attended the **World Hydrogen Technologies Convention (WHTC) 2019**. Maria Jose presented the work "Waste Upgrading with Photocatalytic Hydrogen Recovery. Stability of TiO_2-Based Materials", meanwhile Alfredo Ortiz and Rafael Ortiz presented the work "Valorization of Coke Oven Gas waste stream applied in a Spark Ignition Engine".

Workshop "Renewable Hydrogen Energy World", Santander, Spain, June 20 - 21, 2019

Several members of HYLANTIC project attended the workshop "Renewable Hydrogen Energy World", that took place in the frame of the 3rd International Congress of Chemical Engineering – 1st Iberoamerican congress of Chemical Engineering – ANQUE – ICCE 3 – CIBIQ, where the following works were presented:

Rafael Ortiz (University of Cantabria): "Specific CO_2 emissions of coke oven gas applied in internal combustion engines".

Dmitriy Makarov (Ulster University): "Recent progress in safety of gaseous hydrogen storage"

Mohammad Dadashzadeh (Ulster University): "Parametric analysis of hydrogen fuelling: Application of a reduced model"

Diogo Silva (University of Porto): "Hydrogen production and storage from hydrolysis of sodium borohydride: Study of the regeneration of sodium borohydride"

Victor Ortisi (Pure Energy Center) "Reduction of premature aging for fuell cell battery systems by implementing an advanced hybrid control system based double PIF, neural network load predicting algorithm and automatically sizing of the battery system".

Moreover, Prof. Carmen Rangel, from LNEG, presented the work "New modified Nafion-biphosphonic acid composite membranes for enhanced proton conductivity and PEMFC performance", developed by F. C. Teixeira, A. I. De Sá, A. P. S. Teixeira, F.M. Ortiz-Martínez, A. Ortiz, I. Ortiz and C. M. Rangel, and received the award to the Best Poster for this work.

CONGRESSES

EFCF, Lucerne, Switzerland, July 2-5, 2019

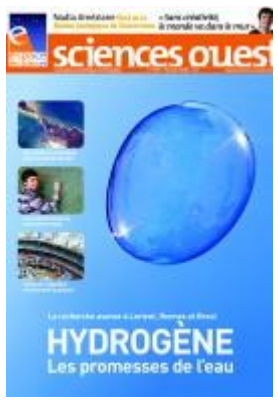
Alfredo Ortiz, coordinator of HYLANTIC Project, within Lucía Gómez and Víctor Manuel Ortiz, also researchers of the project, attended the European Fuel Cell Forum EFCF. Alfredo Ortiz presented the work “Hydrogen recovery from industrial gaseous waste streams using polymeric membranes” and Lucía Gómez and Víctor Manuel Ortiz presented the work “Copolymers of ionic liquids with MMA and hPFSVE as novel proton exchange membranes”

DISSEMINATION ACTIVITIES

International Day of Women and Girls in Science – February 11th, 2019

Dr. Gema Pérez, member of the University of Cantabria team of HYLANTIC Project, visited the secondary school “Las Llamas”, located in Santander (Cantabria, Spain), in the frame of the celebration of the International Day of Women and Girls in Science. During the visits, she talked about the role of a chemical engineering and explained to the secondary students the main objectives of HYLANTIC Project. She highlighted the importance of working with researchers from different countries and different knowledge areas.

Scientific Newspaper Interview, February 2019



Frederic Gloaguen researcher of the Centre National de la Recherche Scientifique – CNRS (France) who is enrolled in the European project “Atlantic Network for Renewable Generation and Supply of Hydrogen to Promote High Energy Efficiency, HYLANTIC” gave an interview to a French Scientific Newspaper, in the frame of that European project. In the interview, Frederic highlighted the important role of hydrogen as energetic vector and explained his work in this field, where he is working on the synthesis of new catalysts to improve hydrogen production.

The interview is available on: https://www.espace-sciences.org/sciences-ouest/359/dossier/la-nature-comme-inspiration

World Expo 2019, Amsterdam, The Netherlands, June 25-27, 2019

Jas Singh, from Auriga Energy, attended the Electric & Hybrid Marine World Expo, the International Exhibition of Electric and Hybrid Marine Charging and Propulsion Technologies and Components. Jas participated in several meetings promoting Auriga Energy´s developments, among them the activities developed in the frame of HYLANTIC project, and in addition he was discussing with potential suppliers and customers.

Decarbonising Ireland with Zero-Carbon Technologies event, July 16th, 2019

Rafael Ortiz was invited to the “Decarbonising Ireland with Zero-Carbon Technologies” event, organised by the National University of Ireland (NUI) in Galway, for an oral dissemination of the project HYLANTIC and its main results to stakeholders from Ireland and Northern Ireland to discuss opportunities and challenges for the deployment of hydrogen technologies in rural and peripheral regions with speakers from Ireland, Scotland, Netherlands, Iceland and Norway.