# 2019制氢、储氢与加氢站技术论坛

### Hydrogen Production, Storage and Refueling Station Technology Forum 2019

## **3.6-7** 武汉 Wuhan

#### **Background**

Hydrogen energy and fuel cell industry booming development in China provide hydrogen industrial chain with huge market opportunities. Hydrogen energy industrial chain includes hydrogen production, hydrogen storage and transportation and hydrogen refueling station 3 core links. By technology improvement and scaled production, cost of whole hydrogen industrial chain can be reduced, and brings perfect of hydrogen energy infrastructures, so that target of number of China hydrogen refueling stations exceeding 1000 in 2030 can be realized, providing popularization & application of fuel cell vehicle with strong guarantee.

Technologies using fossil to hydrogen, like coal to hydrogen, natural gas to hydrogen etc., have been matured, yet, they still face carbon emission problem. While industry byproduct hydrogen, which does not generate additional carbon emission – PDH, ethane cracking and chlor-alkali chemical etc., needs to be paid attention to. Cost of renewable energies power generation has potential to continuous decreasing, base on renewable energies large scaled water electrolysis to hydrogen will be main hydrogen source of the hydrogen energy industry in the future.

Storage and transportation methods of hydrogen mainly are high pressure gas hydrogen, liquid hydrogen and organic chemicals hydrogen storage etc. Currently, high pressure gas state hydrogen storage has the widest application, and common used 35MPa and 70MPa. To large scaled hydrogen storage and transportation, liquid hydrogen has the advantages on safety, hydrogen storage volume, cost, capacity expansion and hydrogen quality etc. Hynertech successfully R&D normal temperature & pressure liquid state organic hydrogen storage technology, Hubei Tri-Ring Hydrogen Energy Logistics Vehicles, which use this technology, is estimated to mass production in 2019.

Up to Sep 2018, China totally has 15 operating hydrogen refueling stations, while another 28 under construction. Hydrogen refueling stations mainly consist gas unloading system, hydrogen compression system, gas storage system,

filling system, pre-cooling system and control system. According to designed target of hydrogen refueling station, selection and optimization of subsystems will increase hydrogen refueling station filling efficiency and economical efficiency. Liquid hydrogen refueling station has unique advantages. In Sep 2018, Air Products and Fullcryo signed hydrogen refueling stations construction and operation strategic cooperation agreement and liquid hydrogen storage and transportation hydrogen refueling station complete set devices sales agreement.

Hydrogen Production, Storage and Refueling Station Technology Forum will be held in Hubei Wuhan on Mar 6-7, 2019. The conference will discuss global and China hydrogen energy industrial chain development prospects and investment opportunities, renewable energy water electrolysis to hydrogen and fossil energy large scaled hydrogen production technologies, industrial byproduct hydrogen potentials, liquid hydrogen and high pressure gas state hydrogen storage technical and economical comparisons, methanol, formic acid and liquid state organics hydrogen storage technologies application prospects, hydrogen refueling station key technologies, construction costs & operation experiences, hydrogen refueling stations and petrol fueling stations, gas filling stations co-construction thinking etc.

#### **Preliminary Agenda**

Mar. 5. 2019 Tuesdav 16:00~21:00 Pre-conference Registration Mar.6. 2019 Wednesday 09:00~12:30 Speech 12:30~14:00 Networking Lunch 14:00~18:30 Speech 18:30~20:00 Banquet Mar.7. 2019 Thursday 08:30~18:00 Industrial visiting

#### **Topics**

- Global and China Hydrogen Energy Industrial Chain Development Prospects and Investment Opportunities
- Hydrogen Qualitative Problem Prospect Hazardous Chemicals or Energy Gas?
- Comparisons of Different Hydrogen Preparation Technology Routes - Electrolysis Water, Natural Gas SMR, Methanol Cracking and Coal Gasification
- Proton Exchange Membrane (PEM) Water Electrolysis to Hydrogen Technology and Application
- Renewable Energies Large Scaled Water Electrolysis to Hydrogen Feasibility and Commercialization Paths
  - China Industrial Byproduct Resource Potential Analysis
- Fuel Cell Used Hydrogen Quality Standards and Detection Technologies
- High Pressure Hydrogen Storage Technologies Latest R&D Progresses and Application Prospects
- Liquid Hydrogen Technologies and Advantages Analysis:
  From Liquid Hydrogen Storage and Transportation to Liquid Hydrogen Refueling Station
- Challenges and Development Prospects of Liquid Organic Hydrogen Storage Technologies
- China Hydrogen Refueling Stations Cost Analysis and Profitability Prospect
- Localization of Hydrogen Refueling Station Key Technologies and Devices
- Hydrogen Refueling Stations Project Site Location, Technology Selection, Approval, Construction and Operation Experiences
- R&D and Demonstration of 70MPa Hydrogen Refueling Station Base on Renewable Energy Hydrogen Preparation / Storage
- Petrol (Gas) Refueling and Hydrogen Refueling Station Mode Current Situation and Development Prospects

English-Chinese Translation will be Provided