Development of a Hydrogen Storage System with High Density, High Durability, and Low Costs

Innovative Hydrogen Storage
－Analyses of Hydrogen Reactions and Application of Digital Technologies－

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Summary :

Bottleneck issues in the development of hydrogen storage technology for, so-called, heavy duty vehicles (HDV) are the creation of new development guidelines to achieve higher density storage of hydrogen and so on. However, presently, there is not much progress in understanding the hydrogen storage mechanism that covers a wide variety of materials, and there are limited guidelines that can be broadly applied to material development and subsequent systemization.

Therefore, based on backcasting from system deployment, we will collaborate with related domestic industries and overseas research institutions to promote 3 research innovations, as follows:

1. Materials: Innovation based on various material functions
2. Analyses: Expansion of analysis conditions under hydrogen
3. DX: Incorporation of DX and MI/PI/mathematical sciences

This research is expected to contribute in the future to the increase in the number of HDV powered by fuel cells, which have a significant effect on reducing GHG emissions; also to promote excellent early-carrier researchers and engineers who will be responsible for R&D on the related technologies.