

News Paper Article on MgH₂

Source NIKKAN KOGYO SHIMBUN (daily industrial news)

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“Hydrogen storage with 9.5 times volume of conventional hydrogen storage materials”

Bio Coke Lab. Co., Ltd. establishes mass production technology of MgH₂.

Bio Coke Lab. Co., Ltd. has developed the mass production technology of MgH₂ which can be used for hydrogen storage in collaboration with Professor Tomohiro Akiyama at Graduate School of Hokkaido University. MgH₂ can store and release 1.9 liters hydrogen per 1 gram at the maximum which is 9.5 times volume compared with it for conventional hydrogen storage materials. Bio Coke Lab. has manufactured an experimental demonstration kit of fuel cell using MgH₂. This kit is expected to contribute to the development of high efficiency fuel cells.

Bio Coke Lab. has confirmed the outlook for mass production of MgH₂ with the adjustments including 1) heating and pulverizing of magnesium fines and 2) heating up to 400 - 500 degrees in Celsius. Bio Coke Lab. succeeded in production of 5kg at one charge this time. Bio Coke Lab. says that if the production facilities become available, they could produce large volume of MgH₂ in the order of several 10 tons - several 100 tons per month. Price of MgH₂ is expected to be 1) JPY30.- per gram in case of “several 10 kgs monthly production” , 2) JPY10.- per gram in case of “several tons monthly production” .

100g MgH₂, when it react with water, will release 15.2g hydrogen. Addition of material for low temperature reaction to MgH₂ would realize the release of hydrogen at constant temperature and create easier condition for storage and transportation. Bio Coke Lab. has also developed a fuel cell system using MgH₂ in collaboration with FC-R&D. The system can operate 8 hours consecutively at the maximum power of 100 watts. Bio Coke Lab. also plans to develop one (1) passenger commuter car in collaboration with Waseda University.