Hydrogen Storage Materials and Generation Systems for PEMFC

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1. Solid- or Liquid-state? ✍ Volume expansion, packing density, thermal conductivity, pumping, flow dynamics, heat exchanger, fueling/refueling, etc
2. H-capacity to total system (not as H-capacity per mass of material)? ✍ **>5 wt%**
3. Total system volume as **Liters/kg-H_2**?
4. Total system weight as **kg/kg-H_2**?
5. Is it possible to generate H_2 "at a required **quantity**", "at a required **rate**", and "for a required **duration**"?
6. Does it require any thermal energy (heat) source for releasing H_2?
7. Does it require any auxiliary H-storage system at start-up time or under excess-load condition?
8. Does it require any reproduction process (recycling) for "**Used fuel**"?
9. Is it possible to recycle (reproduce) "**Used fuel**"?
10. Does it require any special device (high pressure, insulation, fire protection, etc.) for delivery and transportation?
11. Can it be treated under safe/stable conditions?
12. Is it suitable for long-term storage under safe/stable conditions?
13. Is it protected from any danger such as health hazard, explosion, fire, pyrophoricity, or toxicity?
14. Is it well protective against environmental issues?
15. The material is really abundant on the earth?
16. Is it really practical as the H-storage material and H-generation system?
17. Can it be really possible for practical PEMFC applications?
18. What is **the source of Hydrogen**?