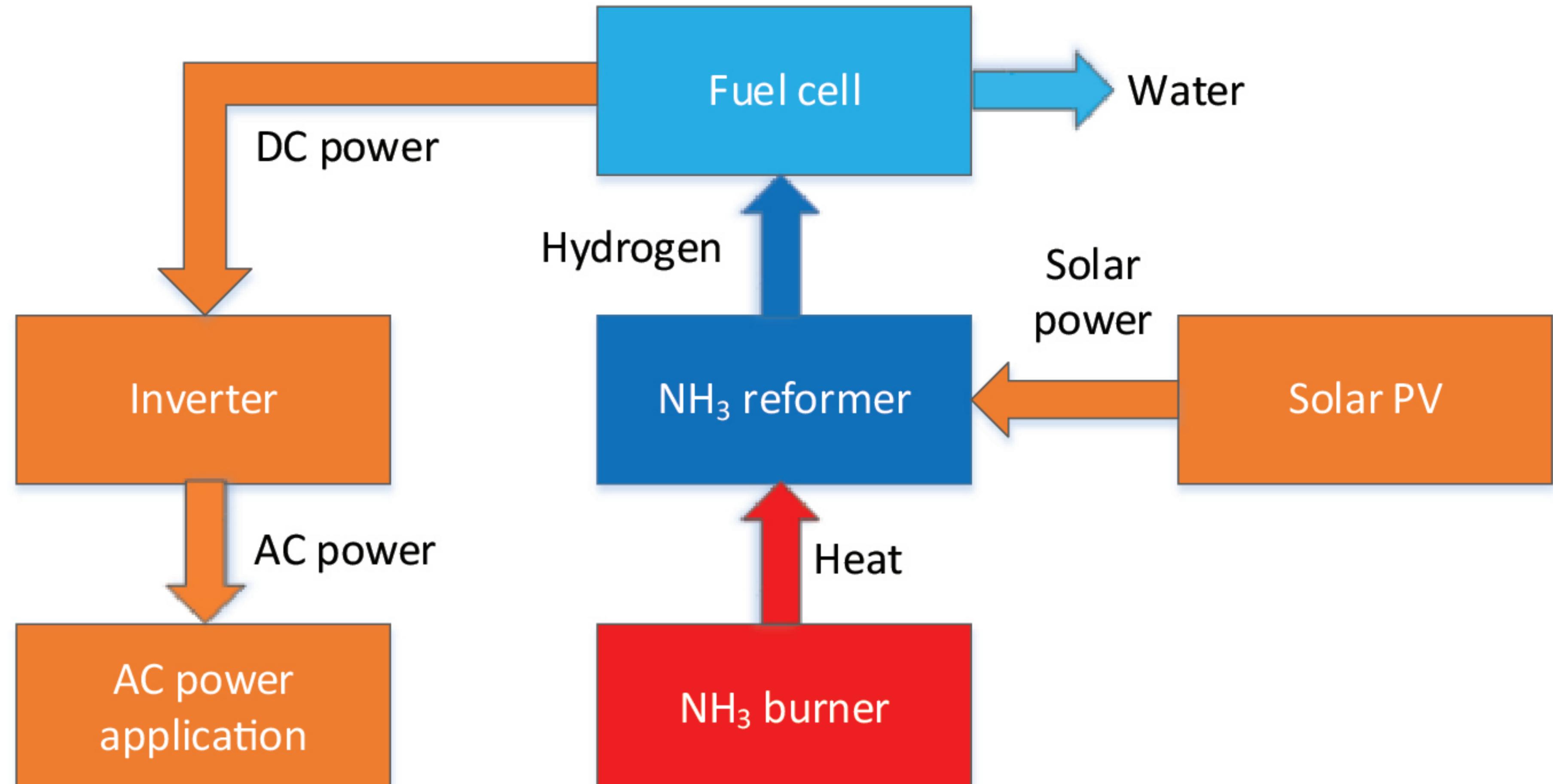
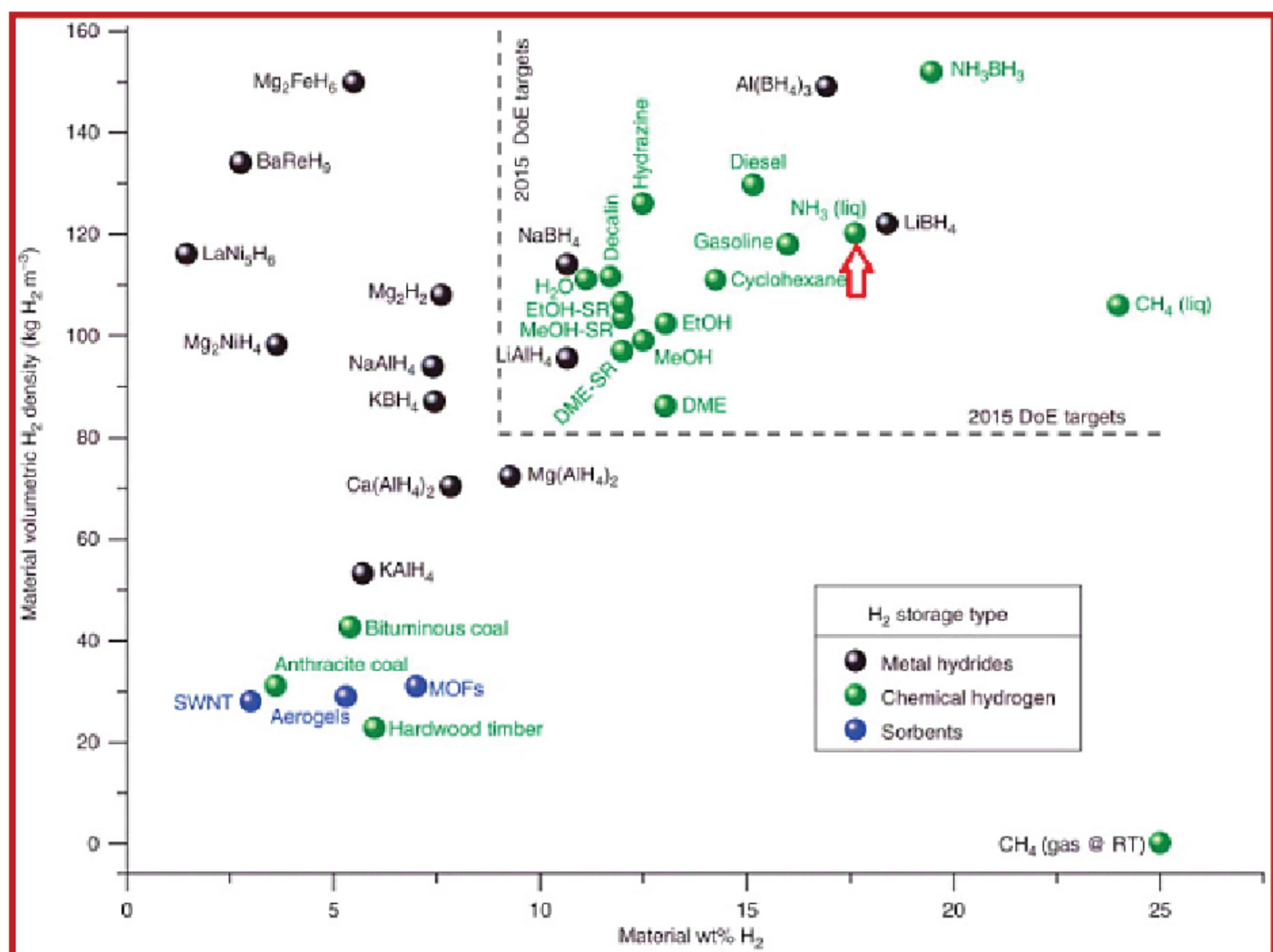


Overview

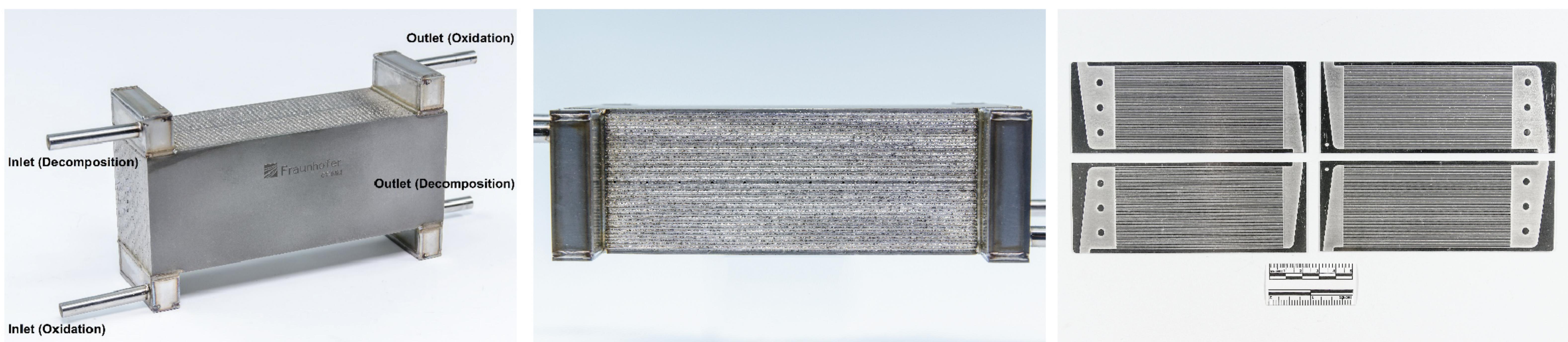
HySA Infrastructure is developing a microchannel fuel processor to generate onsite hydrogen (H_2) fuel via ammonia (NH_3) decomposition. This project intends to address the present lack of an adequate infrastructure for generating and delivering H_2 to drive PEM fuel cells at decentralised locations, such as off-grid telecoms base-stations.

Ammonia-fuel power generation concept

The target application is to generate onsite hydrogen for off-grid power generation applications, which are currently running on diesel generators. The fuel processor contains PGM catalysts that meets DST requirement for PGM mineral resource beneficiation and local value-addition.

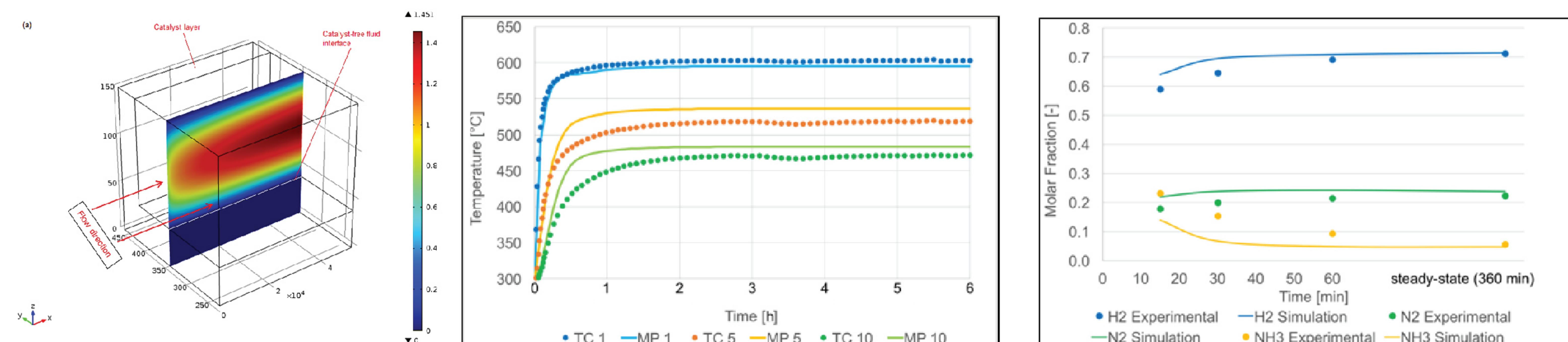


Ammonia as a hydrogen carrier



Autothermal microchannel reactor for ammonia decomposition

Multiphysics simulation: Experimental vs. CFD results



Recent journal publications

- Chiuta and Bessarabov. 2018. *Catalysis Today*, 310, 187-194.
- Engelbrecht et al. 2018. *Journal of Power Sources*, 386, 47–55.
- Schumacher et al. 2019. *International Journal of Hydrogen Energy*, 44, 6415–6426.

Microchannel reactor patent

- S Chiuta, DG Bessarabov. A microchannel reactor and method for decomposition of ammonia. Netherlands patent granted (NL2017963B1).