

ENERGYPOLIS SEMINAR

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Hydrogen storage systems for mobile and stationary applications: an overview

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Metal hydrides are considered a viable option for both vehicular and stationary hydrogen-based storage technologies.

A large number of compounds has been identified and characterized at different levels of detail. It is clear that the choice of the material is closely depended on the needs of the specific application for the storage systems, which comprises the tank, the H₂-carrier and the heat transfer medium. In the frame of the “Hydrogen Storage Systems for Mobile and Stationary Applications” Group in the International Energy Agency (IEA) Hydrogen Task 32 “Hydrogen-based energy storage”, a recent survey [1] gives an overview of the use of hydrides both in mature and innovative systems. Key parameters such as gravimetric and volumetric density of the hydrogen carrier, heat management and tank design are shown to be crucial in affecting the use of hydrides in different applications.

References:

[1] M. Dornheim et al., *Int. Journal of Hydrogen Energy*, in press, 2019.

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Sabrina is associate professor and leader of the Energy Systems section at the Department of Technology Systems of the University of Oslo. She studied physical chemistry, materials science and engineering at the Universities of Padova and Bologna (Italy) where she received her PhD in 2003. Since 2004 she focuses her research towards energy storage systems. She moved to Norway in 2006 as a researcher at the Institute for Energy Technology and joined the University of Oslo in 2013. She participates to several national and international projects and serves as expert and leader in several committees, boards and initiatives, including the Materials Research Society (MRS) and the International Energy Agency (IEA) Hydrogen.