

# Magnesium Hydride: From the Laboratory to the Tank

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*Dedicated to Dr. Bernard Chevalier on the occasion of his 60<sup>th</sup> birthday*

Magnesium metal is under extensive study for its high hydrogen absorption capacity. The main results obtained by the authors, going from the effects of ‘reactive mechanical grinding’ to the addition of nano oxides or to the deposition of nanoparticles are reported and discussed. The absorption properties are compared with the results of other research groups. An improvement of kinetics has been achieved and the mechanisms of the hydrogenation reaction is almost fully understood, but the effects of catalysts are still subject to hypotheses. Recent developments of  $\text{MgH}_2$  tanks are also presented.

*Key words:* Magnesium Hydride, Milling under Hydrogen, Hydrogen Storage, Diffusion and Nucleation Process, Hydrogen Tank