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Hydrogen mobility in an amide-based hydrogen storage system

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The hydrogen storage performance of a reactive hydride composite, $Mg(NH_2)_2$ + 2LiH, can be significantly improved by the addition of $Li(BH_4)$ and the subsequent formation of an amide–borohydride compound $Li_4(BH_4)(NH_2)_3$ during hydrogen release. This improvement has been attributed to the enhanced hydrogen mobility in the latter compound, due to which the reaction becomes diffusion-controlled. We studied the hydrogen mobility in this system by neutron scattering.

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