

Confinement of NaAlH₄ in nanoporous carbon: impact on H₂ release, reversibility and thermodynamics

Jinbao Gao, Philipp Adelhelm, Margriet H. W. Verkuijen, Carine Rongeat, Monika Herrich, P. Jan M. van Bentum, Oliver Gutfleisch, Arno P.M. Kentgens, Krijn P. de Jong, Petra E. de Jongh

Supporting information:

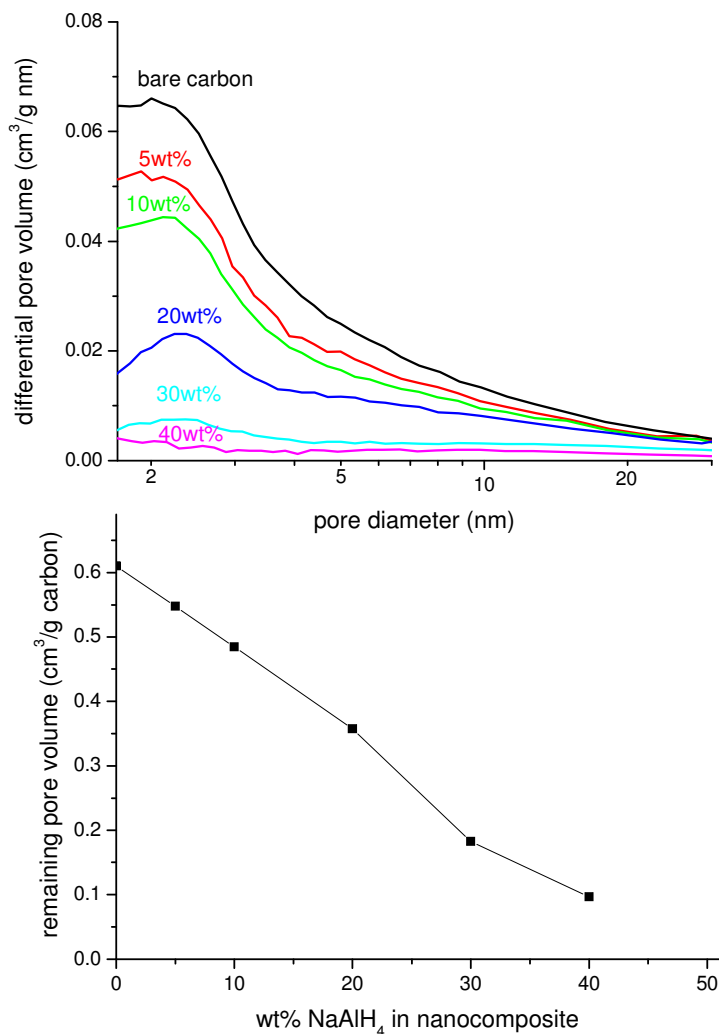


Figure S1. Porosity as measured with N₂ physisorption for NaAlH₄/nanoporous carbon composites containing different amounts of NaAlH₄; (top frame) pore size distributions as determined using the BJH model (bottom frame) remaining carbon pore volume as a function of NaAlH₄ loading. The original pore volume of the carbon was 0.66 cm³/g, but after melt infiltration of the carbon and subsequent leaching of the NaAlH₄ the pore volume was reduced to 0.61-0.62 cm³/g, indicating minor damage to the pore structure.

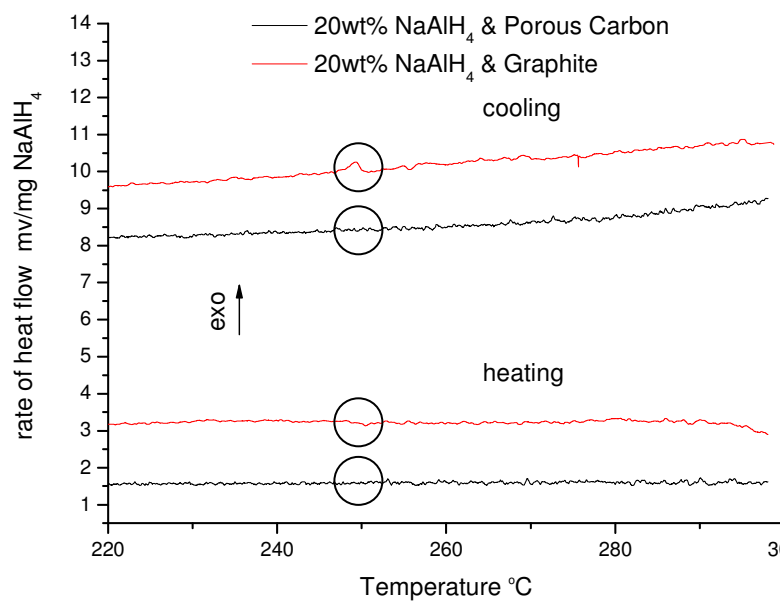


Figure S2. Differential scanning calorimetry for 20 wt% NaAlH₄/C comparing composites with graphite and porous carbon. Heating and cooling rates 5 °C/min under 120 bar H₂ pressure. Indicated is the temperature at which the $\alpha \rightarrow \beta$ Na₃AlH₆ phase transition is expected (~250 °C)