

## Supporting Information

**Enhanced hydrogen storage performance for  $\text{MgH}_2\text{--NaAlH}_4$  system – The effects of stoichiometry and  $\text{Nb}_2\text{O}_5$  nanoparticles on cycling behaviour**  
**Rafi-ud-din, Qu Xuanhui, Li Ping, Lin Zhang, M. Zubair Iqbal, Mashkoor Ahmad**

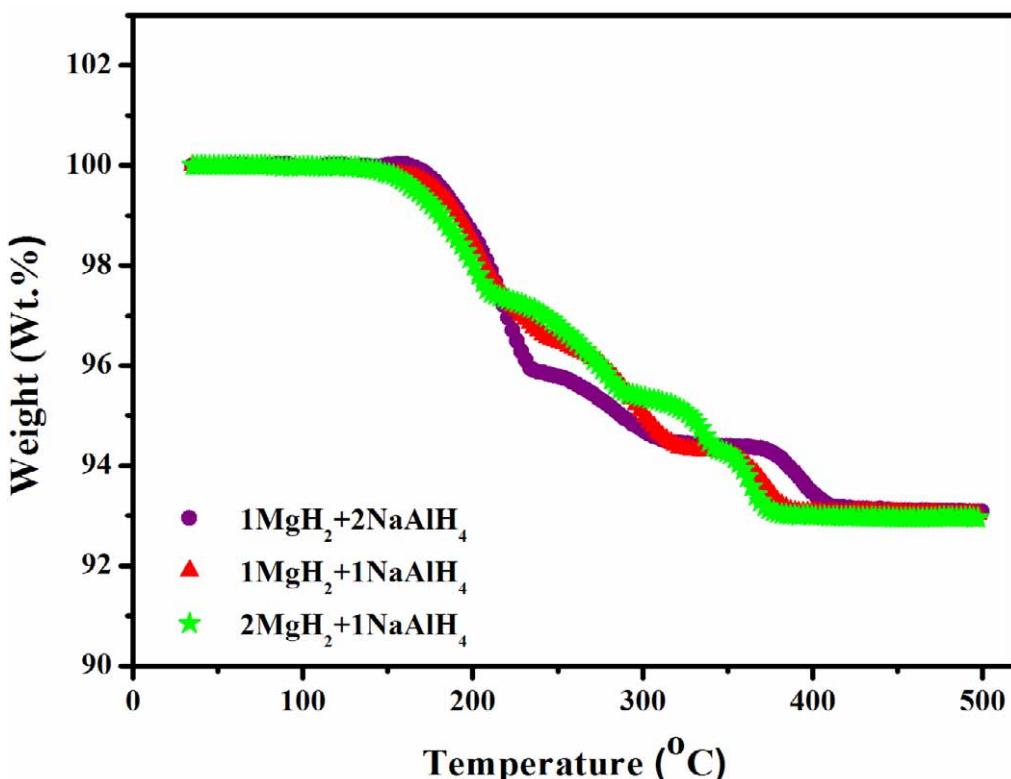


Fig. S1: TG profiles of  $\text{MgH}_2\text{-NaAlH}_4$  composites (in mole ratios of 1:2, 1:1 and 2:1) at the ramping rate is  $1\text{ }^{\circ}\text{C min}^{-1}$ .

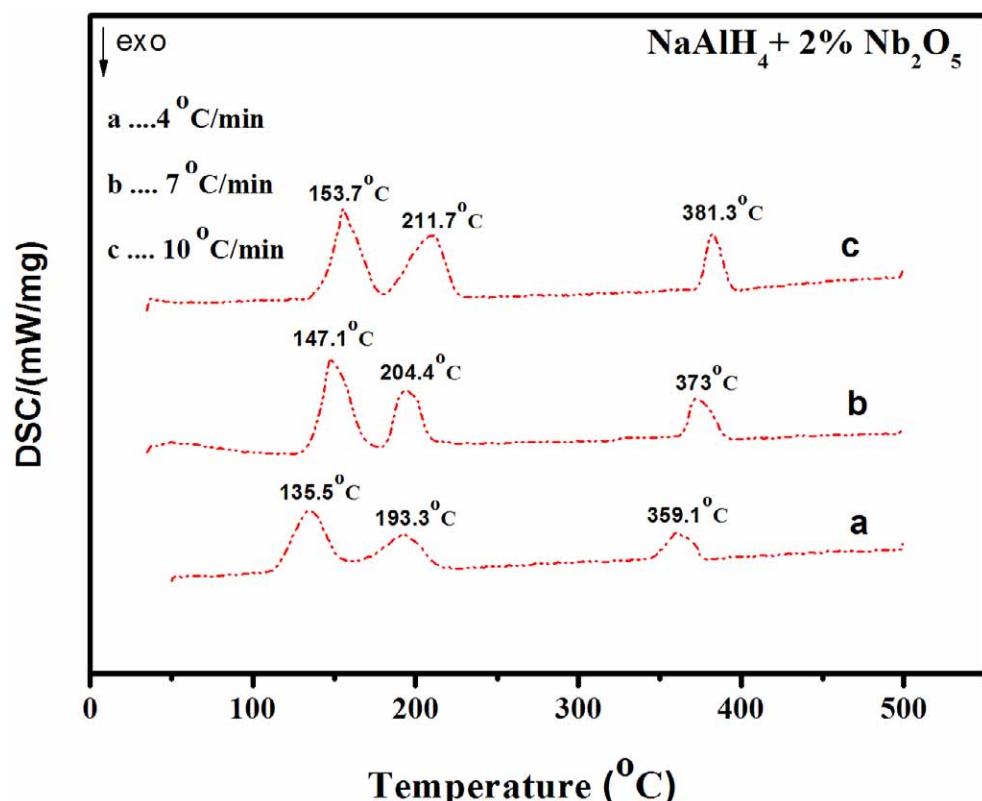


Fig. S2: The DSC profiles at various heating rates ( $4 \ ^{\circ}\text{Cmin}^{-1}$ ,  $7 \ ^{\circ}\text{Cmin}^{-1}$  and  $10 \ ^{\circ}\text{Cmin}^{-1}$ ) for  $\text{Nb}_2\text{O}_5$ -doped  $\text{NaAlH}_4$

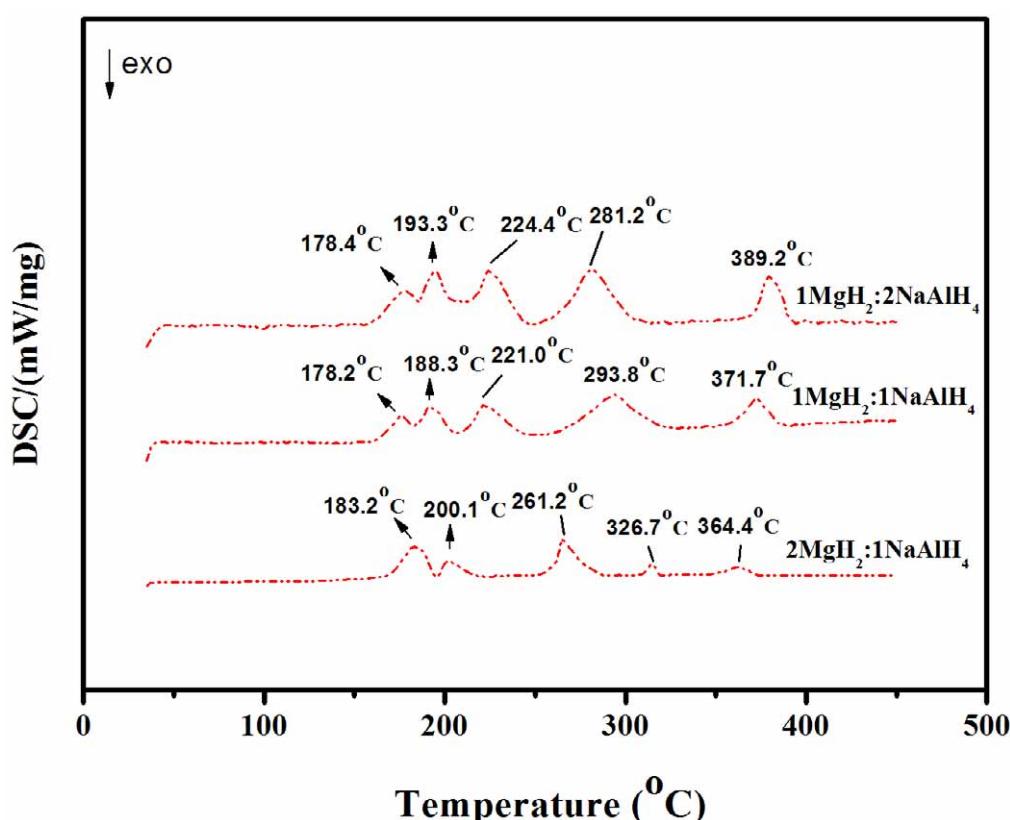


Fig. S3: The DSC profiles for MgH<sub>2</sub>-NaAlH<sub>4</sub> composites (in mole ratio of 1:2, 1:1 and 2:1) at heating rate of 1 °Cmin<sup>-1</sup>