

Electronic Supplementary Material (ESI) for Dalton Transactions.

This journal is © The Royal Society of Chemistry

### *Supplementary Information*

## **Enhanced hydrogen storage properties of 2LiBH<sub>4</sub>-MgH<sub>2</sub> composite with BaTiO<sub>3</sub> as an additive**

Jiasheng Wang,<sup>a</sup> Shumin Han<sup>\*,a,b</sup> Zhibin Wang,<sup>b</sup> Dandan Ke,<sup>b</sup> Jingjing Liu<sup>b</sup>, and Mingzhen Ma<sup>a</sup>

<sup>a</sup> State Key Laboratory of Metastable Materials Science and Technology, Yanshan University,

Qinhuangdao 066004, PR China

<sup>b</sup> College of Environmental and Chemical Engineering, Yanshan University, Qinhuangdao 066004,

PR China

E-mail: [hanshm@ysu.edu.cn](mailto:hanshm@ysu.edu.cn)

Tel: +86-335-8074648; Fax: +86-335-8074648

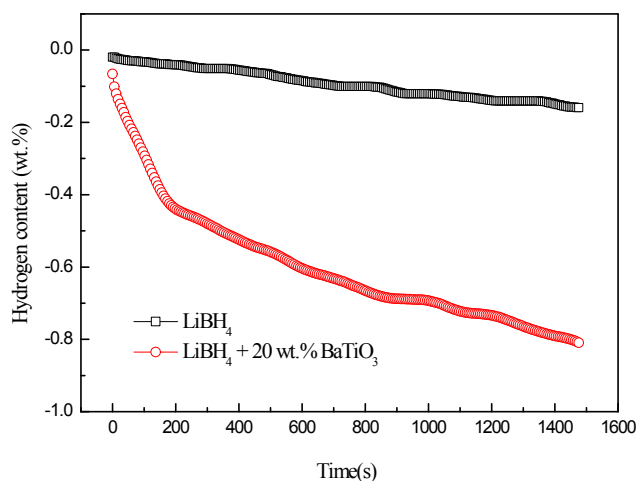


Fig. S1 Dehydrodring curves of the LiBH<sub>4</sub> + 20 wt.% BaTiO<sub>3</sub> composite and the pristine LiBH<sub>4</sub> composite at 350 °C

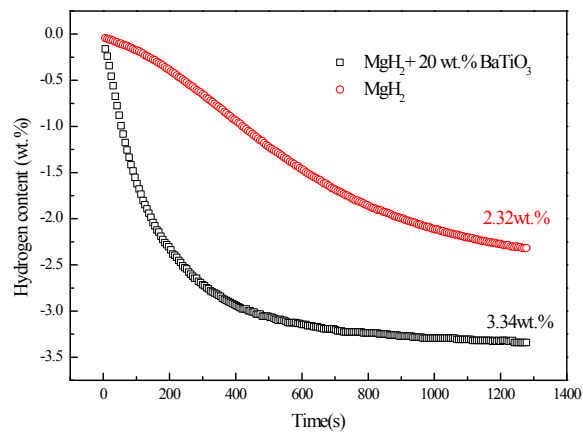


Fig. S2 Dehydrogenating curves of the  $\text{MgH}_2 + 20 \text{ wt.}\% \text{ BaTiO}_3$  composite and  $\text{MgH}_2$  at  $350 \text{ }^\circ\text{C}$

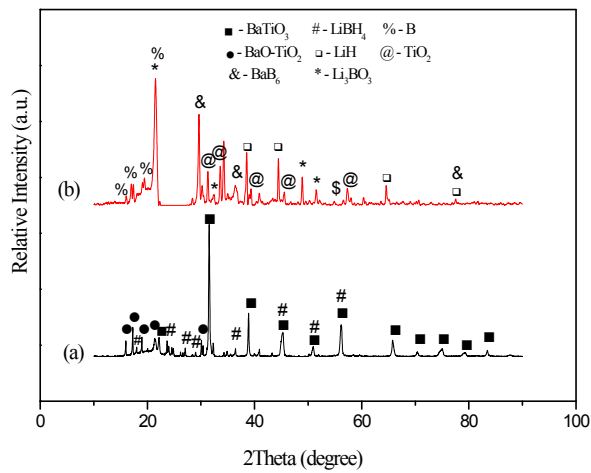


Fig. S3 XRD patterns of  $\text{LiBH}_4 + 20 \text{ wt.}\% \text{ BaTiO}_3$  for (a) ball-milled for 5 h, and (b) completely dehydrogenated.

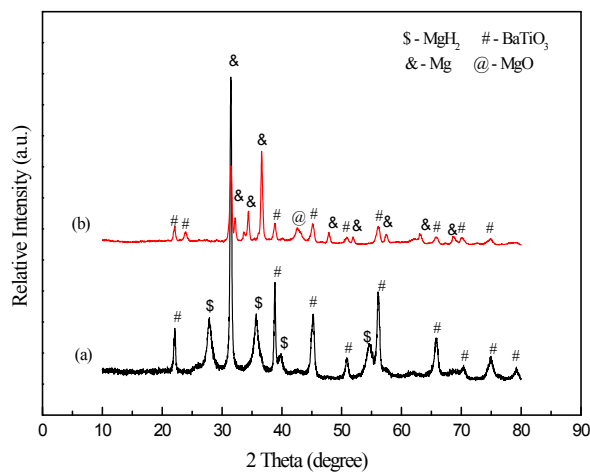


Fig. S4 XRD patterns of  $\text{MgH}_2 + 20 \text{ wt.}\% \text{ BaTiO}_3$  for (a) ball-milled for 5 h (b) completely dehydrogenated.