

## Supplementary Information

### **Facile synthesis of bowl-like 3D Mg(BH<sub>4</sub>)<sub>2</sub>-NaBH<sub>4</sub>-fluorographene composite with unexpected superior dehydrogenation performances**

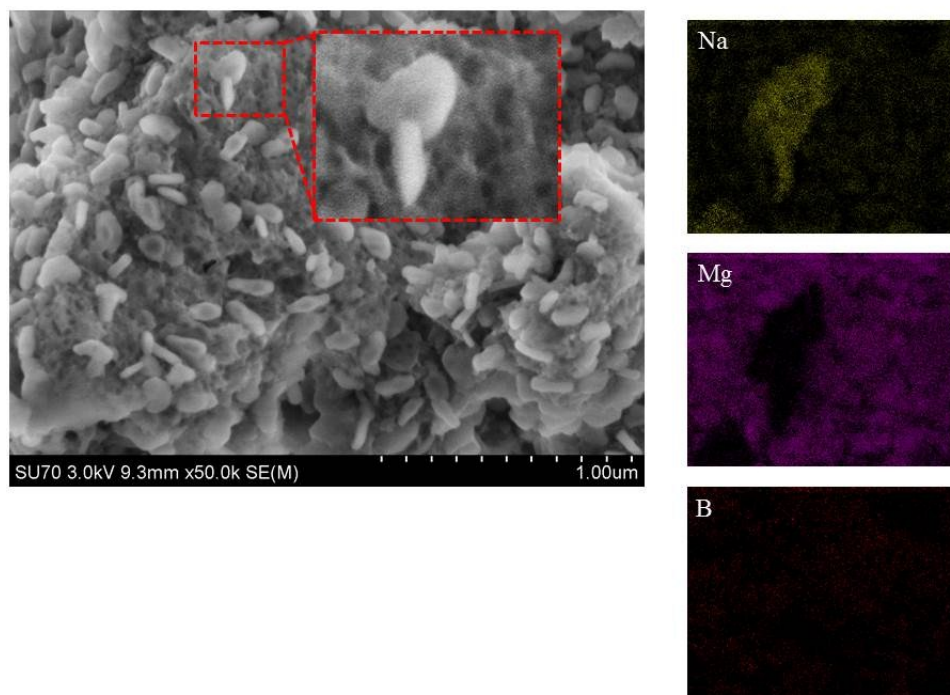
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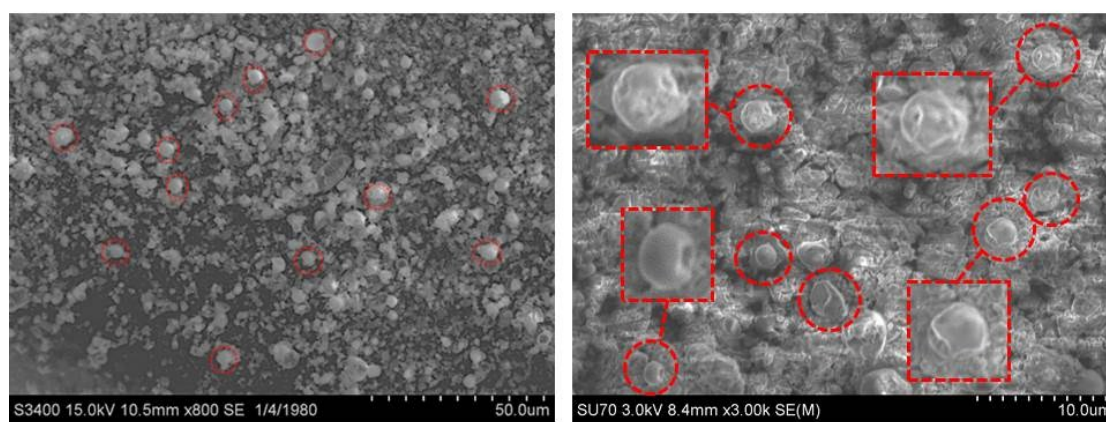
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In order to clarify the elemental distribution of Mg(BH<sub>4</sub>)<sub>2</sub>-NaBH<sub>4</sub> composite, SEM image of Mg(BH<sub>4</sub>)<sub>2</sub>-NaBH<sub>4</sub> composite and EDS mapping profiles are exhibited in Fig. S1. EDS mapping profiles show a concentration of element Na in the lamellar particles when Mg mainly takes place in the background. This result proves that NaBH<sub>4</sub> particles turn into lamellar form after ball-milling process.

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**Fig. S1** SEM image of  $\text{Mg}(\text{BH}_4)_2\text{-NaBH}_4$  particles and EDS mapping profiles of a selected area.



**Fig. S2** Low magnification SEM images of  $\text{Mg}(\text{BH}_4)_2\text{-NaBH}_4\text{-FG}$  composite.