

Figure 1S. SEM images of MgH<sub>2</sub>+Fe powders milled for 30 min and sintered at 300 °C under hydrogen pressure.

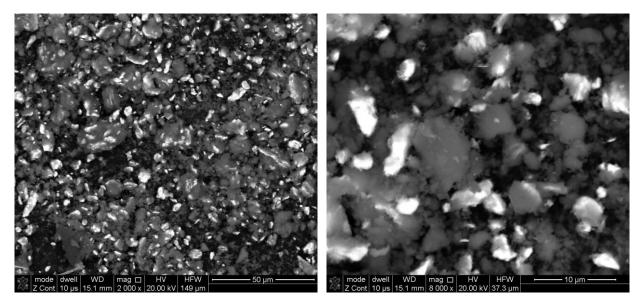


Figure 2S. SEM images of MgH<sub>2</sub>+Fe powders milled for 30 min and sintered at 350  $^{\circ}$ C under hydrogen pressure.

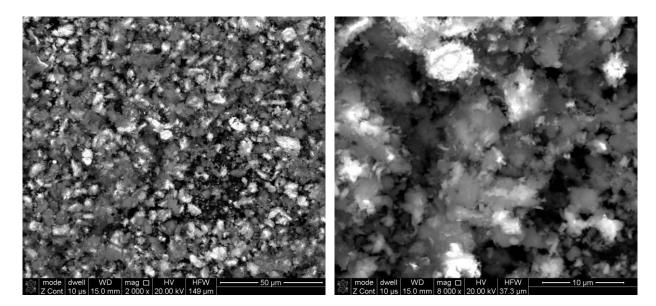


Figure 3S. SEM images of MgH<sub>2</sub>+Fe powders milled for 30 min and sintered at 400 °C under hydrogen pressure.

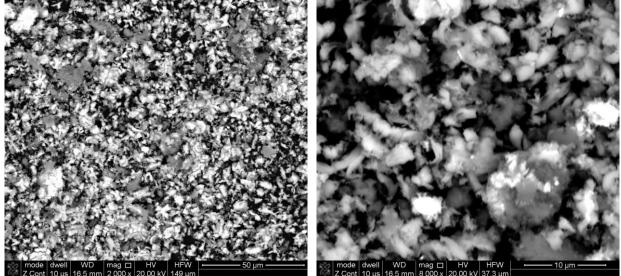


Figure 4S. SEM images of MgH\_2+Fe powders milled for 30 min and sintered at 450  $^\circ\text{C}$  under hydrogen pressure.

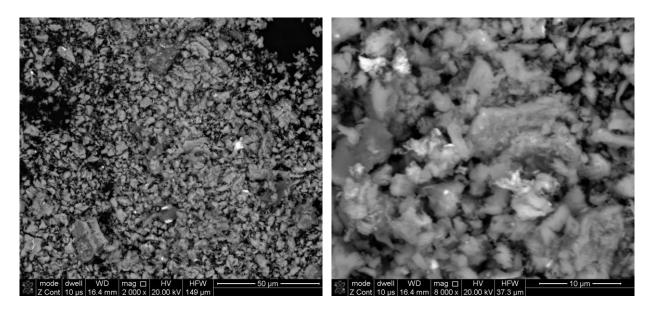


Figure 5S. SEM images of MgH<sub>2</sub>+Fe powders milled for 30 min and sintered at 500  $^{\circ}$ C under hydrogen pressure.

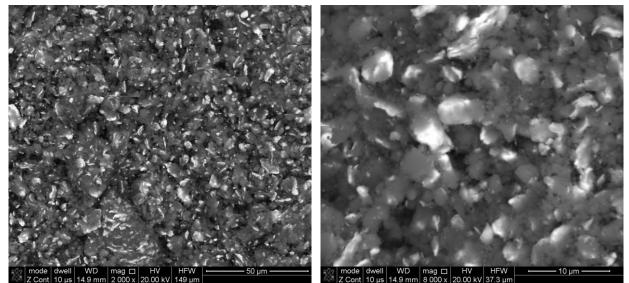


Figure 6S. SEM images of MgH<sub>2</sub>+Fe powders milled for 1 h and sintered at 300 °C under hydrogen pressure.

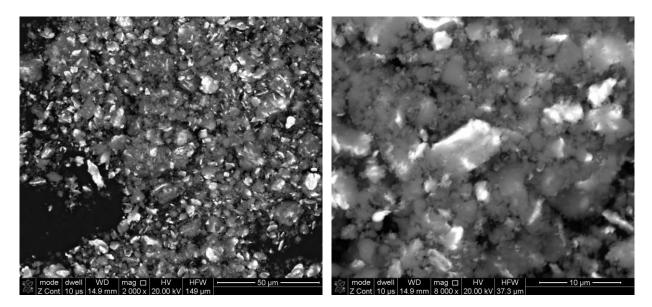


Figure 7S. SEM images of MgH<sub>2</sub>+Fe powders milled for 1h and sintered at 350 °C under hydrogen pressure.

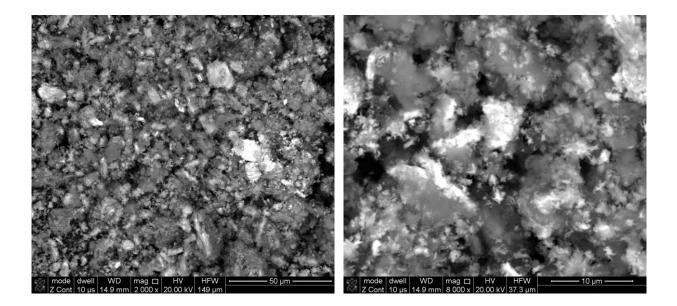


Figure 8S. SEM images of MgH\_2+Fe powders milled for 1h and sintered at 400  $^\circ\text{C}$  under hydrogen pressure.

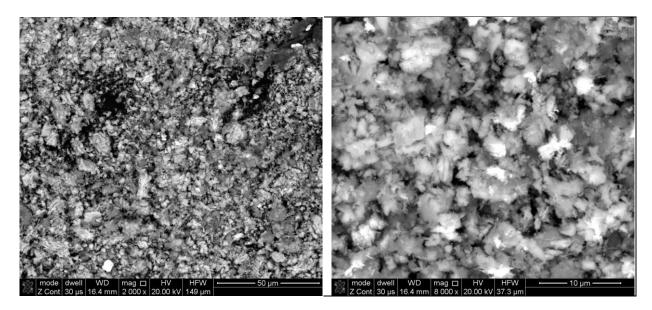


Figure 9S. SEM images of MgH<sub>2</sub>+Fe powders milled for 1h and sintered at 450  $^\circ\text{C}$  under hydrogen pressure.

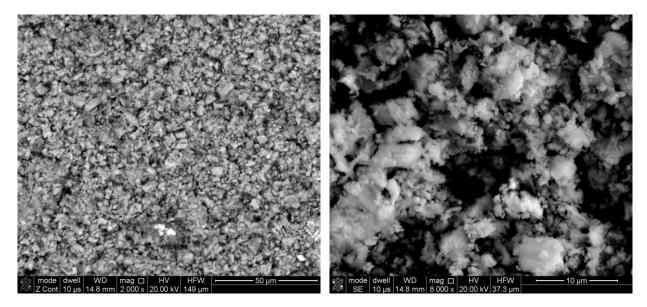


Figure 10S. SEM images of MgH\_2+Fe powders milled for 1h and sintered at 500  $^\circ\text{C}$  under hydrogen pressure.

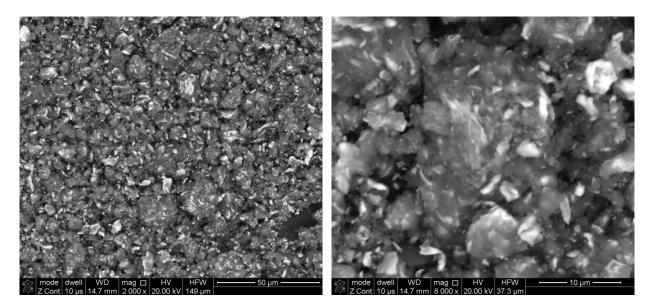


Figure 11S. SEM images of MgH<sub>2</sub>+Fe powders milled for 2h and sintered at 300  $^{\circ}$ C under hydrogen pressure.

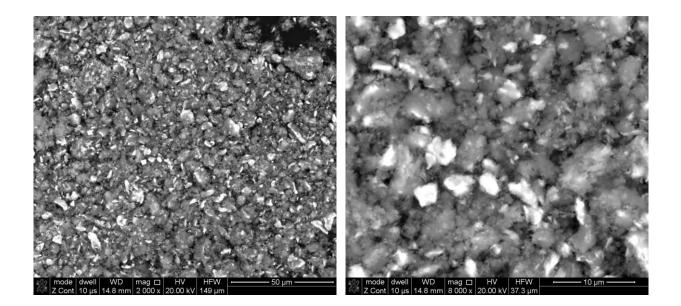


Figure 12S. SEM images of MgH<sub>2</sub>+Fe powders milled for 2h and sintered at 350  $^{\circ}$ C under hydrogen pressure.

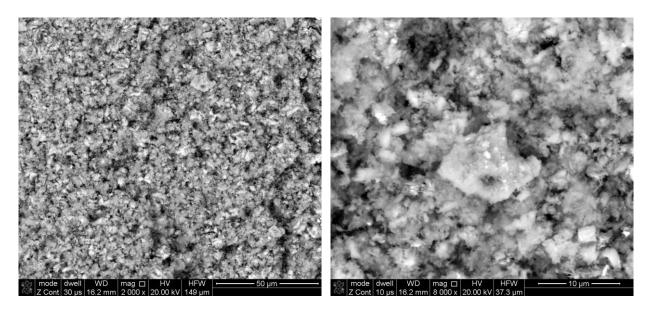


Figure 13S. SEM images of MgH<sub>2</sub>+Fe powders milled for 2h and sintered at 400  $^{\circ}$ C under hydrogen pressure.

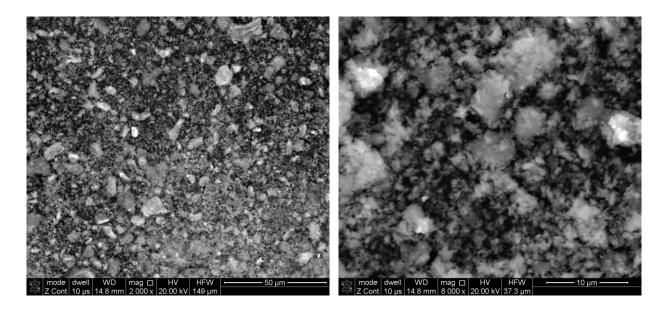


Figure 14S. SEM images of MgH\_2+Fe powders milled for 2h and sintered at 450  $^\circ\text{C}$  under hydrogen pressure.

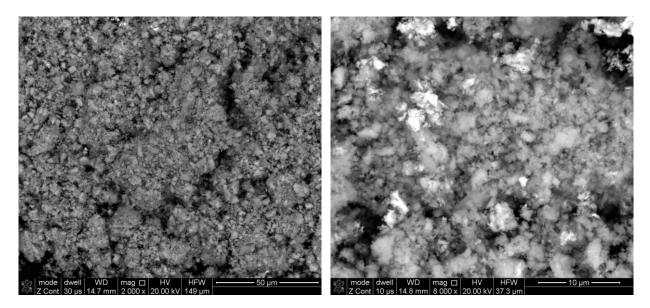


Figure 15S. SEM images of MgH<sub>2</sub>+Fe powders milled for 2h and sintered at 500  $^{\circ}$ C under hydrogen pressure.

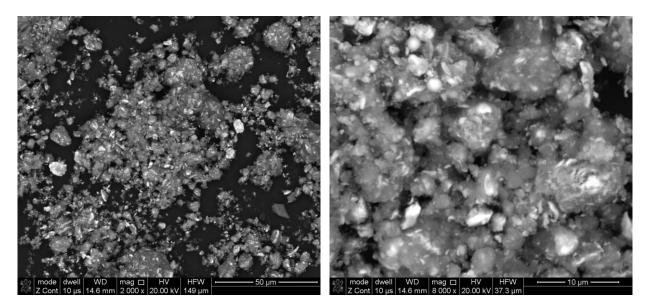


Figure 16S. SEM images of  $MgH_2$ +Fe powders milled for 3h and sintered at 300 °C under hydrogen pressure.

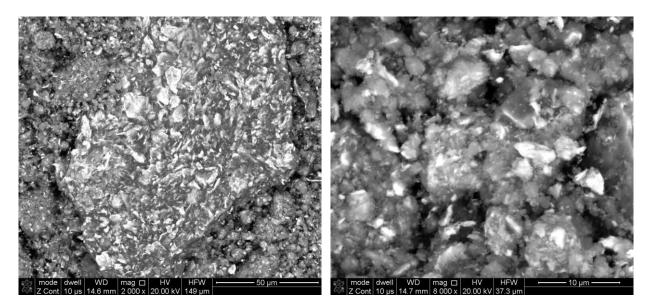


Figure 17S. SEM images of MgH<sub>2</sub>+Fe powders milled for 3h and sintered at 350  $^{\circ}$ C under hydrogen pressure.

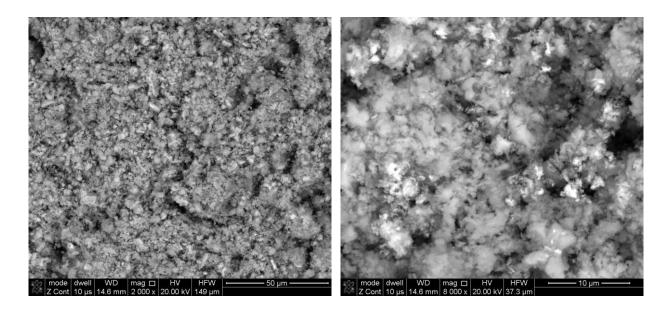


Figure 18S. SEM images of MgH\_2+Fe powders milled for 3h and sintered at 400  $^\circ\text{C}$  under hydrogen pressure.

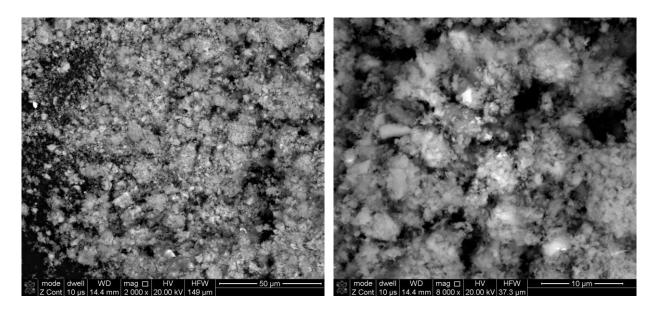


Figure 19S. SEM images of MgH\_2+Fe powders milled for 3h and sintered at 450  $^\circ\text{C}$  under hydrogen pressure.

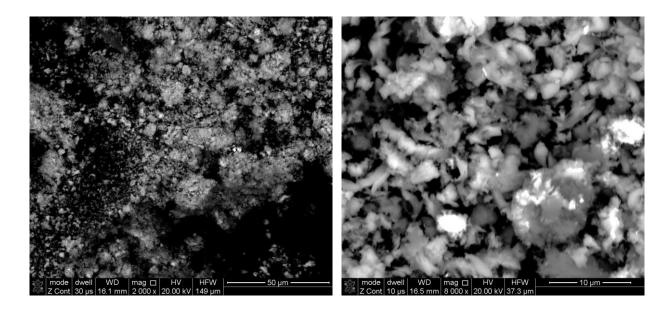


Figure 20S. SEM images of MgH\_2+Fe powders milled for 3h and sintered at 500  $^\circ\text{C}$  under hydrogen pressure.