Electronic supplementary information (ESI)

Steam reforming of methane over ordered mesoporous Ni-Mg-Al oxides

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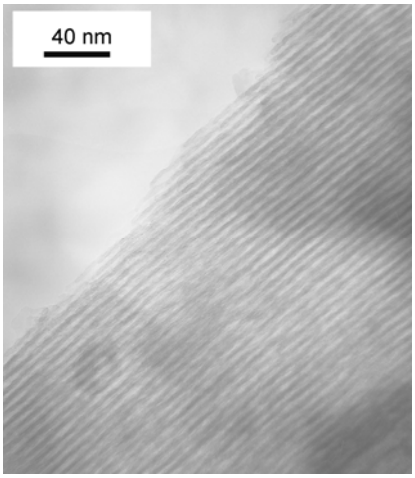

Fig. S1 TEM image of as-prepared Ni/20MgMA.

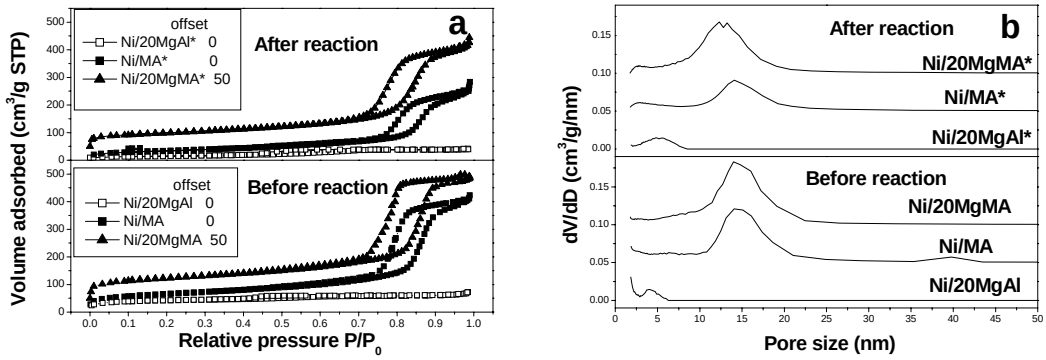

Fig. S2 N_2 sorption isotherms (a) and pore size distributions (b) of as-prepared and spent Ni/MA, Ni/20MgMA and Ni/20MgAl. The pore distributions were calculated from adsorption branches.

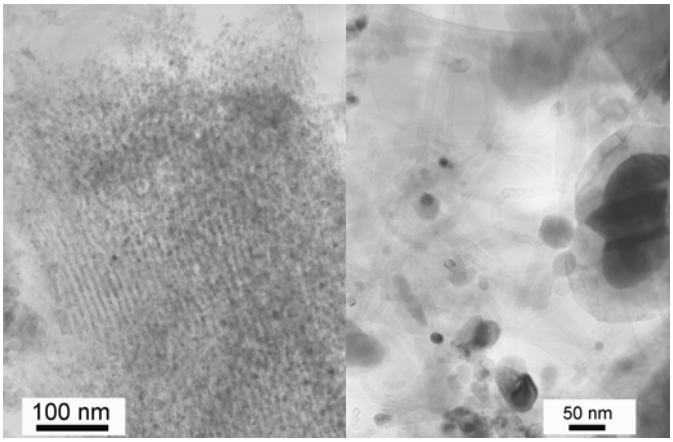

Fig S3 TEM images of spent Ni/MA (left) and carbon nanotube formed on Ni/20MgAl (right).

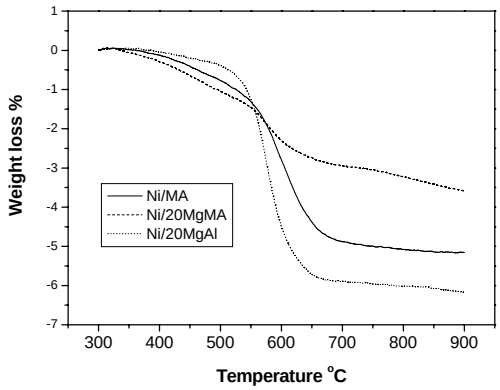

Fig. S4 TG profiles of spent Ni/MA, Ni/20MgMA and Ni/20MgAl.

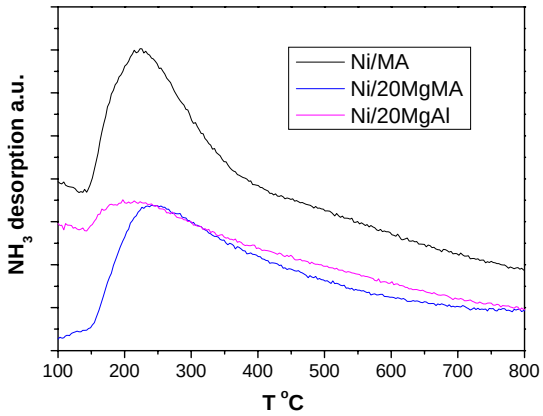

Fig S5 Profiles of NH_3-TPD. 100 mg of samples were pretreated in 10% H_2 with the temperature increasing rate 20 °C/min to 800 °C and maintained at 800 °C for 20 min. After cooling down to 100 °C in helium, ammonia adsorption was carried out for 30 min. Then helium was purged for 2 hrs. The NH_3-TPD was conducted by increasing the temperature from 100 °C to 800 °C with heating rate of 10 °C /min under 100 mL/min He flow, and out gas was analyzed by online mass spectroscopy.