processes

MDPI

Supplementary Materials

Tuning Metal-Support Interactions on Ni/Al_2O_3 Catalysts to Improve Catalytic Activity and Stability for Dry Reforming of Methane

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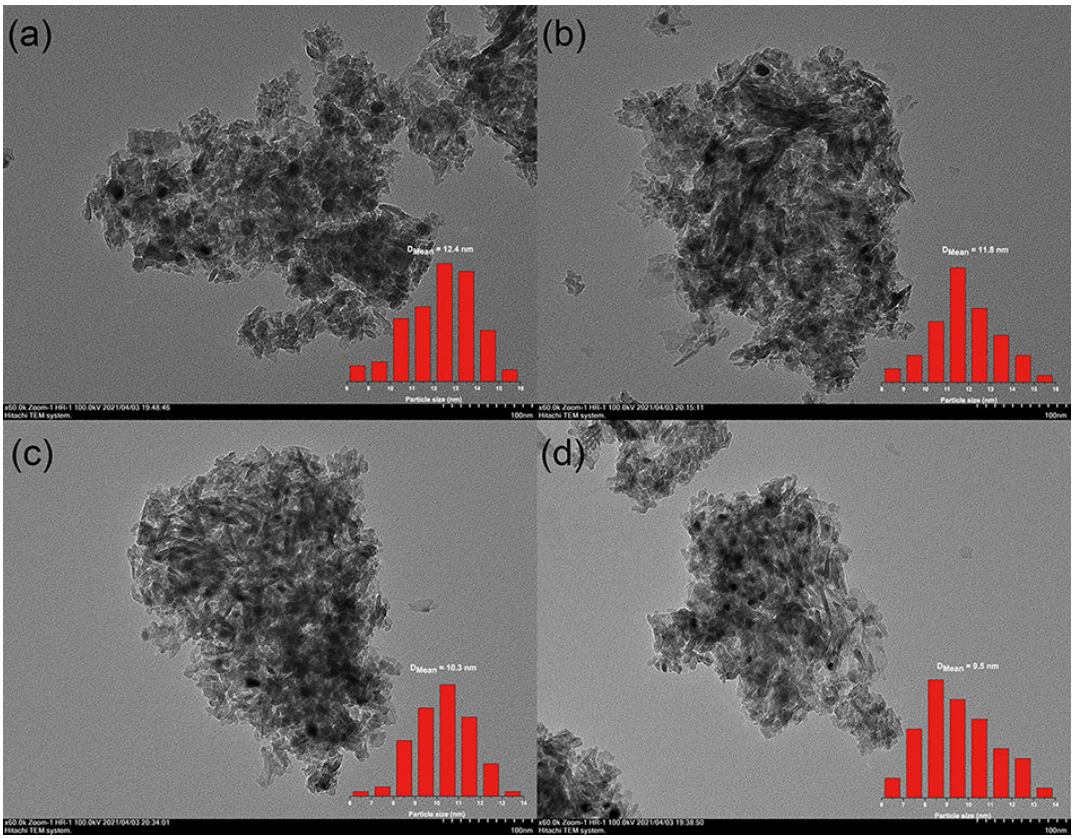

Figure S1. TEM images and Ni particle size distributions of the reduced catalysts: (**a**) Ni/Al_2O_3-450, (**b**) Ni/Al_2O_3-550, (**c**) Ni/Al_2O_3-650, and (**d**) Ni/Al_2O_3-750.

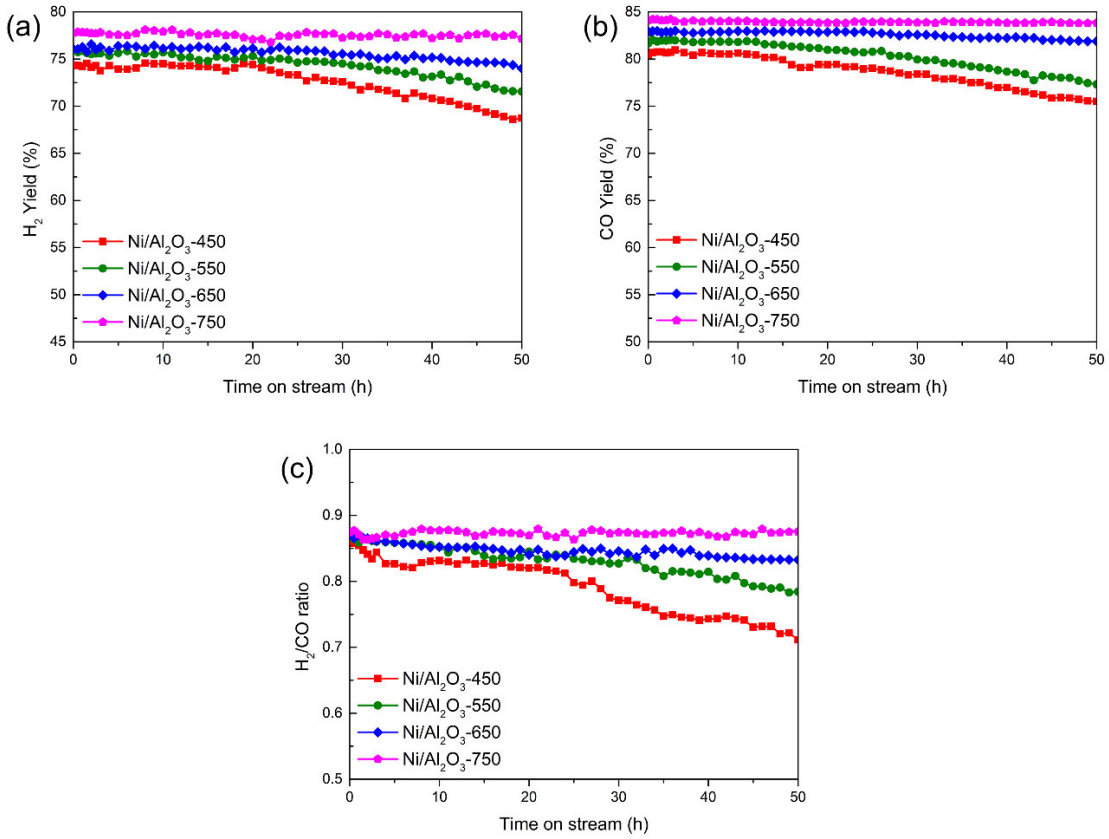

Figure S2. (**a**) H_2 yield, (**b**) CO yield and (**c**) H_2/CO ratio as the function of time for stream of Ni/Al_2O_3-x catalysts (50 h test). Reaction conditions: CH_4:CO_2:Ar =1:1:3, GHSV= 24000 mL g^{-1} h^{-1}, 700 °C, atmospheric pressure.

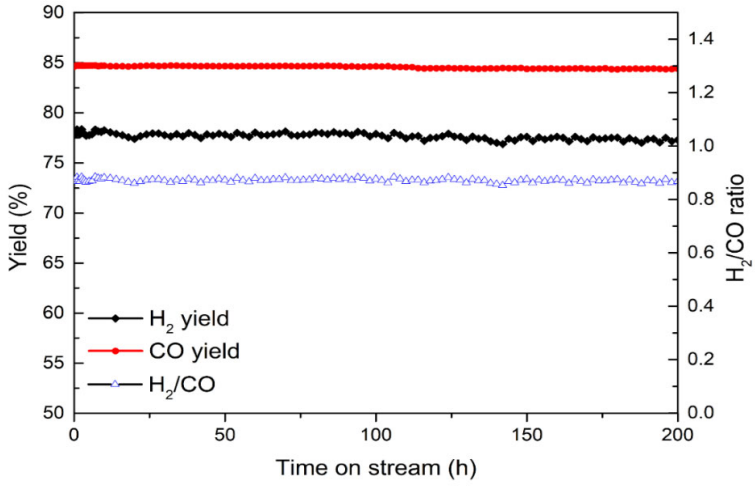

Figure S3. H_2 yield, CO yield and H_2/CO ratio of Ni/Al_2O_3-750 catalyst in the long-term stability (200 h) test for dry reforming of methane reaction. Reaction conditions: CH_4:CO_2:Ar =1:1:3, GHSV= 24000 mL g^{-1} h^{-1}, 700 °C, atmospheric pressure.

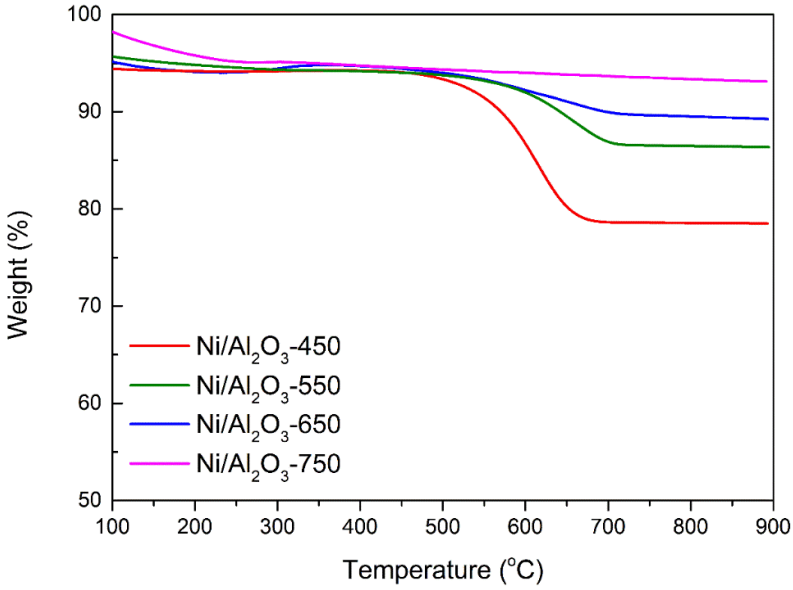

Figure S4. TG analysis of spent Ni/Al_2O_3-x catalysts after the 50 h reaction.