Electronic supplementary information (ESI)

Metal–support interaction modulated catalytic activity of Ru nanoparticles on Sm$_2$O$_3$ for efficient ammonia decomposition

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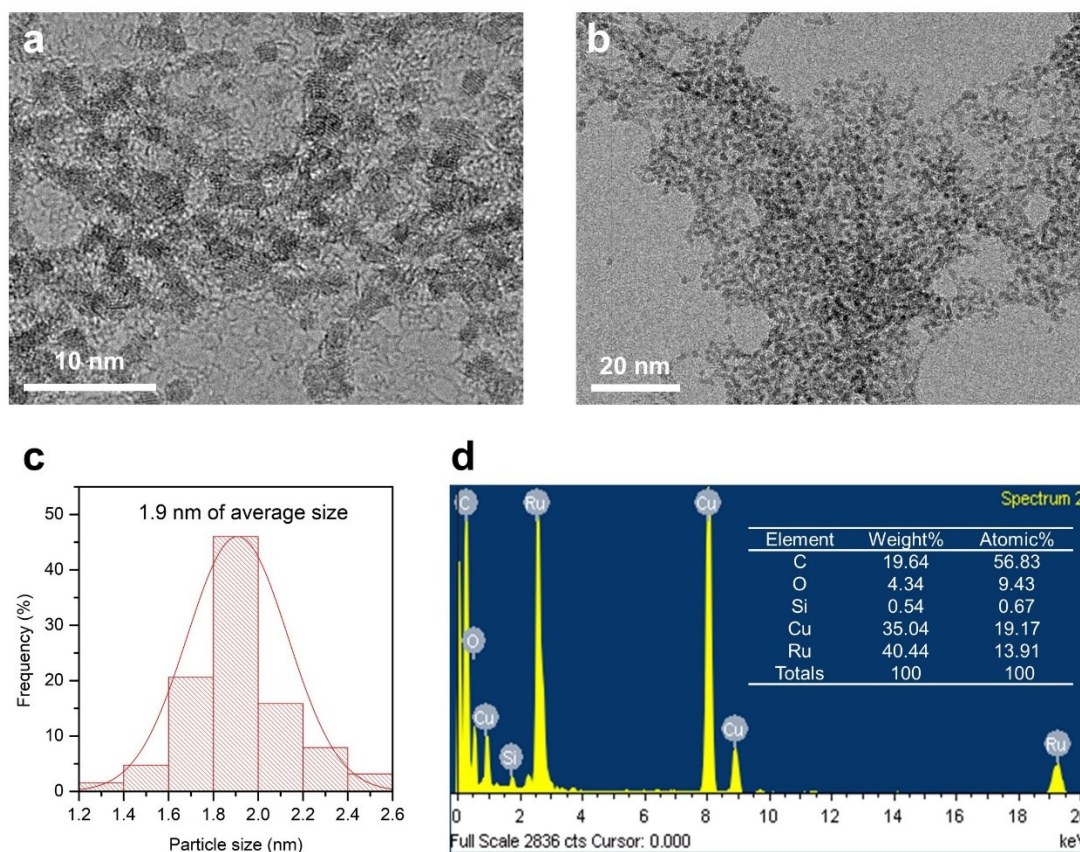*E-mail: liulin@dicp.ac.cn, pchen@dicp.ac.cn*

Fig. S1 TEM images in different scales (a–b), particle size distribution (c) and Energy Dispersive X-Ray (EDX) Spectroscopy (d) of RuO_2 NPs.
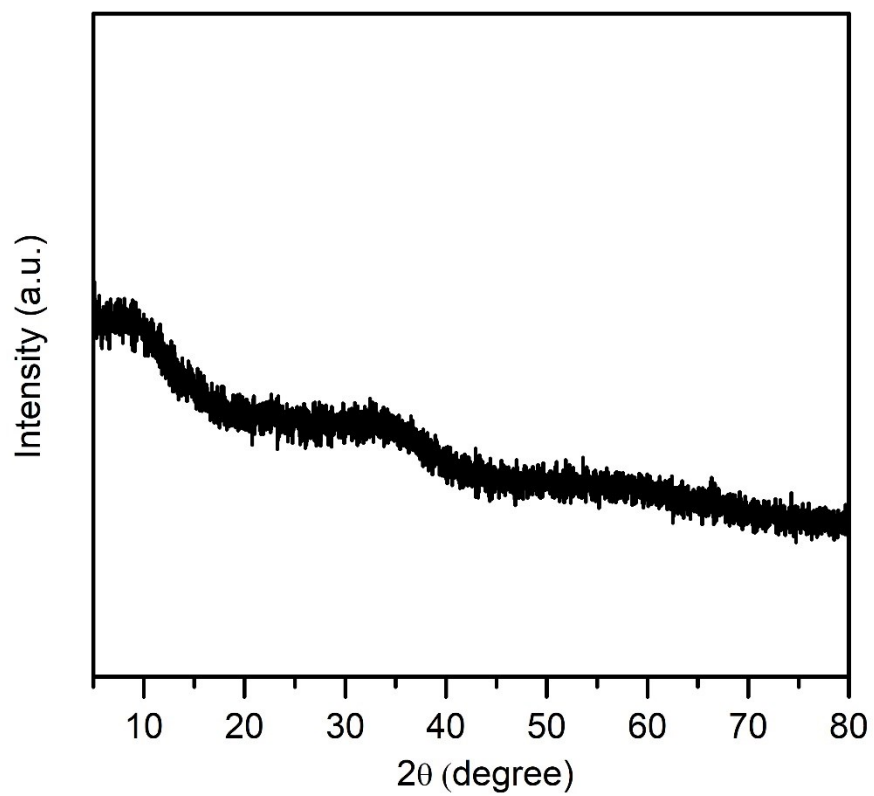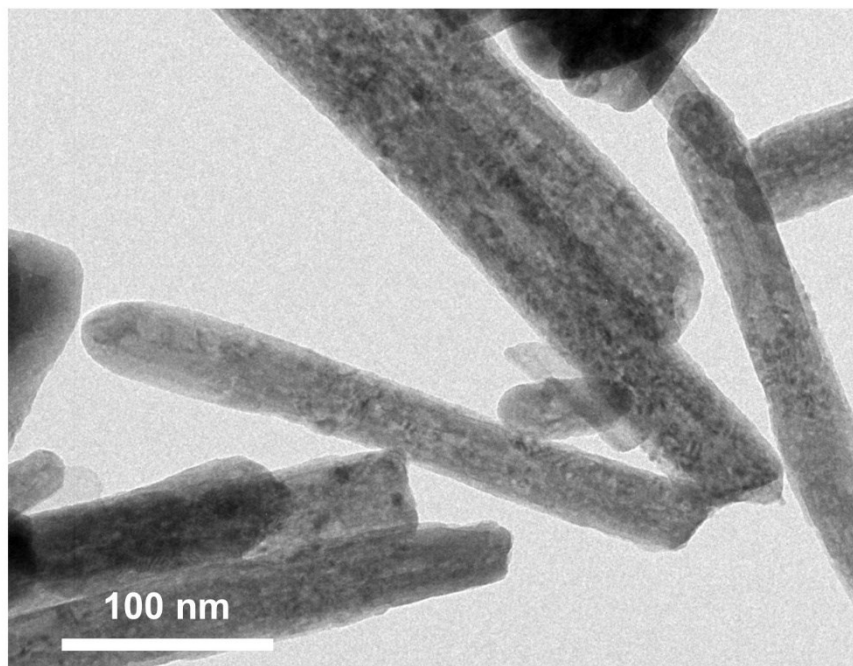
Fig. S2 XRD pattern of RuO_2 NPs.
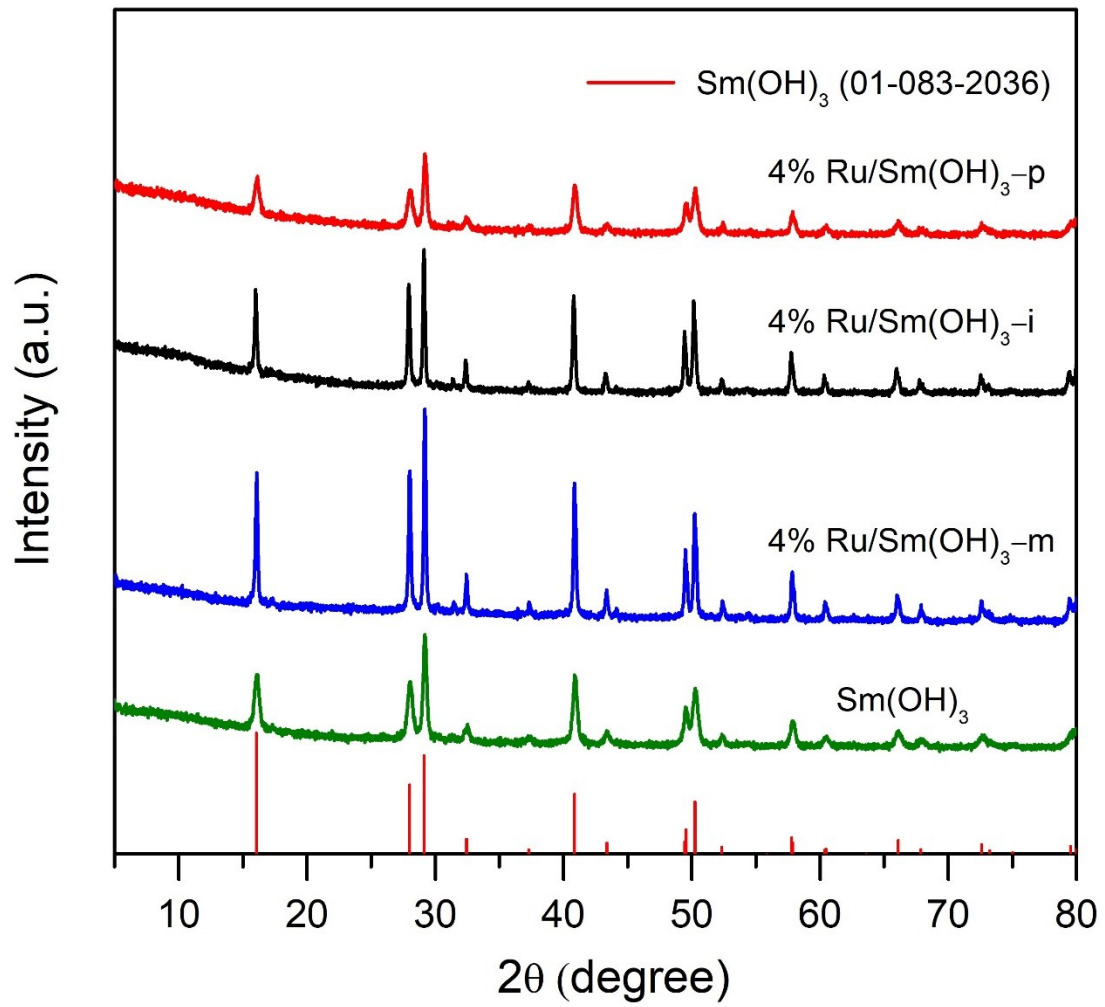
Fig. S3 TEM image of Sm(OH)$_3$ support.

Fig. S4 XRD patterns of Sm(OH)₃, 4% Ru/Sm(OH)₃–m, 4% Ru/Sm(OH)₃–i and 4% Ru/Sm(OH)₃–p precursors.
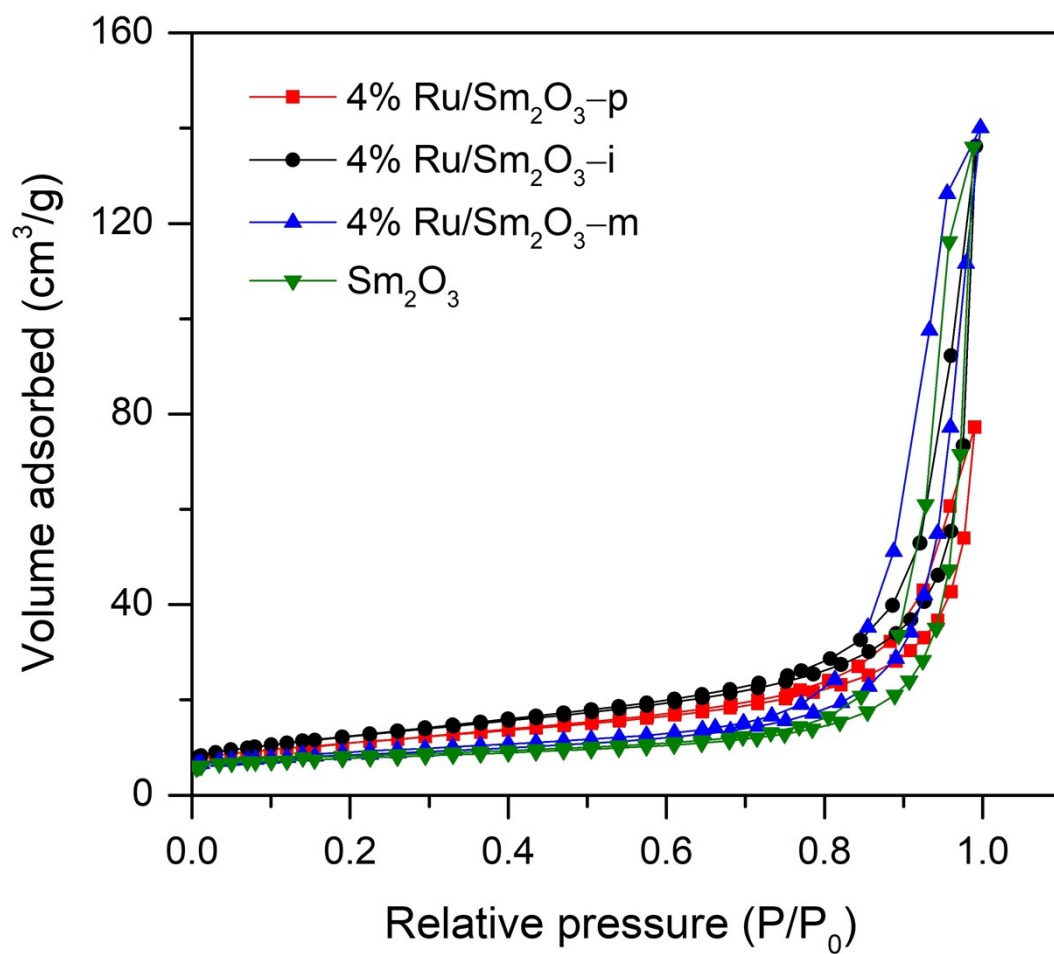
Fig. S5 N_2 adsorption-desorption isotherms of Sm_2O_3 support, 4% Ru/Sm_2O_3–m, 4% Ru/Sm_2O_3–i and 4% Ru/Sm_2O_3–p catalysts.
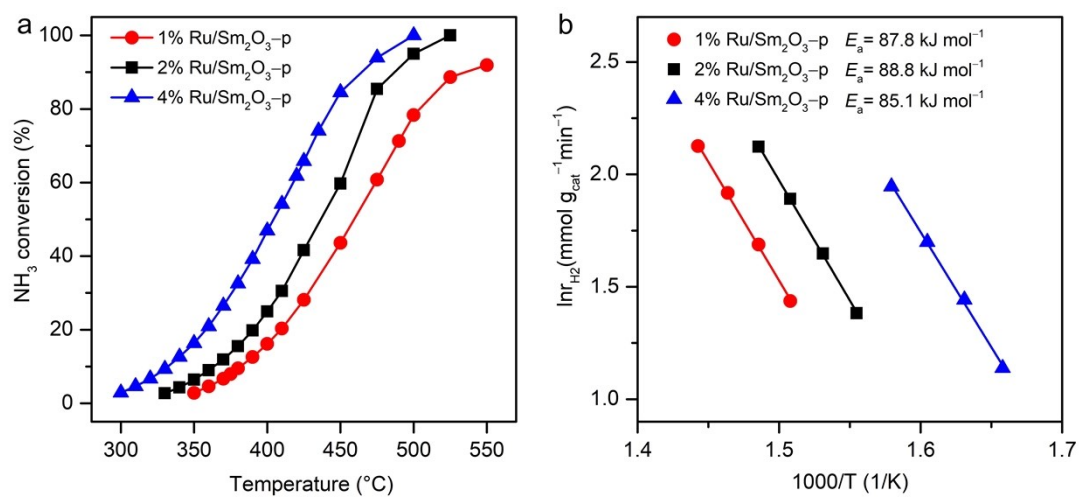
Fig. S6 Temperature-dependent NH_3 conversion (a) and Arrhenius plots (b) of Ru/Sm_2O_3–p with different Ru mass loadings. WHSV= 30,000 mL g_{cat}^{-1} h^{-1}.