Supporting Information

Catalytic decomposition of hydroxylamine nitrate and hydrazine nitrate using Ru/ZSM-5 catalyst under mild reaction conditions

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List of Supporting Materials

Figure S1 Representative SEM images of fresh (a, b) and used (c, d) Ru/ZSM-5 catalyst.
Figure S2 HR-TEM images of fresh (a, b) Ru/ZSM-5 catalyst.
Figure S3 The effect of reaction temperature on the concentration of nitrous acid.
Figure S4 The effect of concentration of nitric acid on concentration of nitrous acid.

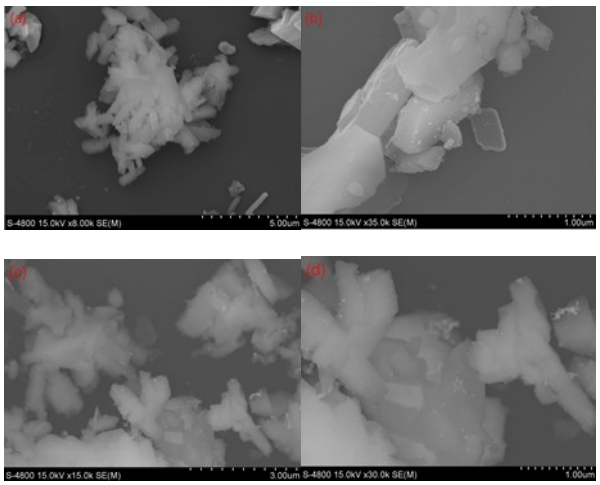


Fig. S1 Representative SEM images of fresh (a, b) and used (c, d) Ru/ZSM-5 catalyst

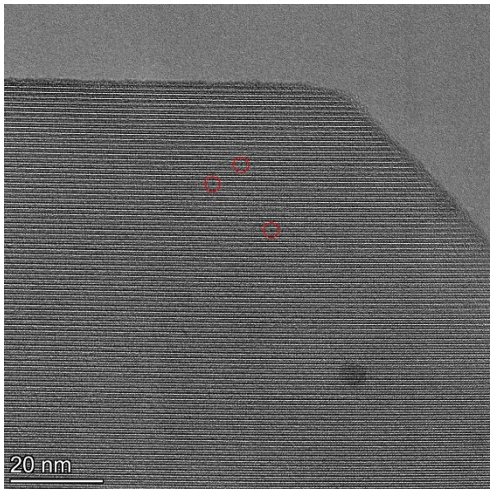
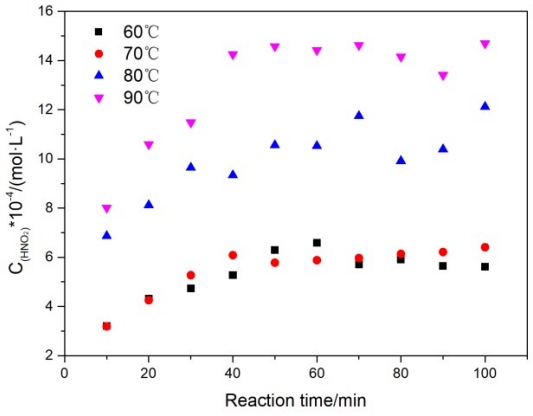


Fig. S2 HR-TEM images of fresh Ru/ZSM-5 catalyst.

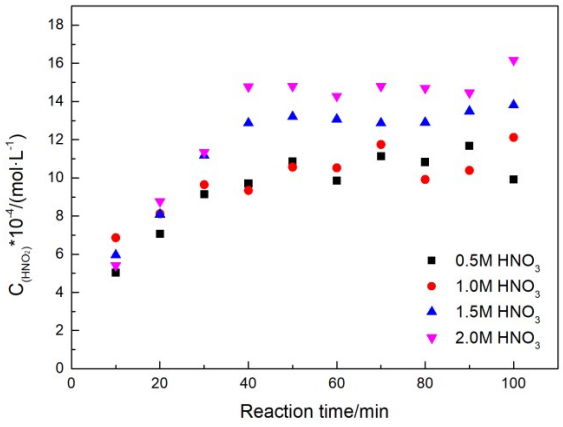
Catalytic conversion of nitric acid to nitrous acid by Ru/ZSM-5 catalyst

The decomposition reaction of HNO_3 was operated using a batch reactor system. In a typical procedure, 2 g of catalyst and 20 mL 1.0 mol/L HNO_3 were loaded in a round-bottom flask equipped with a reflux condenser and exhaust gas absorption device at 80 °C. Analyze the content of nitrous acid every ten minutes by Agilent Cary100 spectrophotometer.



Reaction conditions: C_{HNO_3} = 1.0 mol/L, 2.0 g 5% Ru/ZSM-5, T = 60-90 ℃

Fig. S3 The effect of reaction temperature on the concentration of nitrous acid



Reaction conditions: C_{HNO_3} = 0.5-2.0 mol/L, 2.0 g 5% Ru/ZSM-5, T = 80 ℃

Fig. S4 The effect of concentration of nitric acid on concentration of nitrous acid