catalysts

MDPI

Supplementary Materials

New Insights into the Effect of Ce Doping on the Catalytic Performance and Hydrothermal Stability of Cu-USY Zeolite Catalysts for the Selective Catalytic Reduction of NO with NH_3

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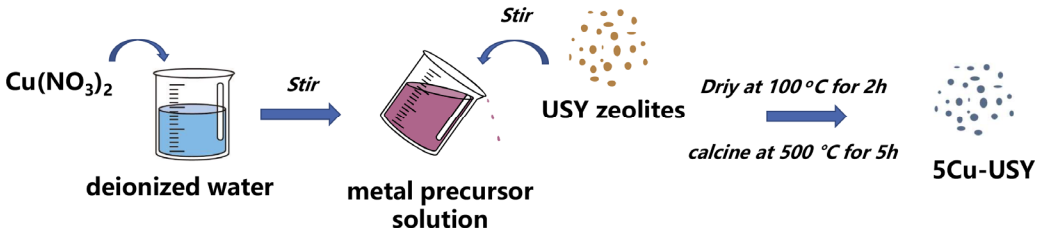


Figure S1. Synthesis scheme of the 5Cu-USY catalysts.

Table S1. Comparison of the NH_3-SCR activity of fresh catalysts in this work with other reports.

Catalysts	Conditions	Operation temperature window	Referenecs
2.4Cu-USY	2000 ppm NO+ 2000 ppm NH_3, 40 mL/min	230~450 °C	[17]
7.2Cu-Y	350 ppm NO+ 375 ppm NH_3, 30000 h^{-1}	250~325 °C	[20]
10Mn8Fe-USY	500 ppm NO+ 500 ppm NH_3, 30 mL/min	150~300 °C	[43]
CuCe-Y zeolites	720 ppm NO+ 800 ppm NH_3, 30000 h^{-1}	160~380 °C	[44]
4.91Cu-USY	2500 ppm NO+ 2500 ppm NH_3, 31600 h^{-1}	200~400 °C	[45]
5Cu-UYS 5Cu8Ce-USY	500 ppm NO+ 500 ppm NH_3, 48000 h^{-1}	200~450 °C 140~450 °C	this work

Table S2. Peak areas and relative proportion of each peak in the H_2-TPR profiles.

Samples	α		β		γ		δ	
	Area	**%**	**Area**	**%**	**Area**	**%**	**Area**	**%**
5Cu8Ce-USY-700H	399.72	8.84	824.75	18.24	136.19	30.08	1937.64	42.85
5Cu8Ce-USY	347.29	6.55	1262.89	23.88	1681.58	31.78	1999.01	37.79
5Cu-USY-700H	234.31	11.00	724.09	32.75	1243.98	56.25	-	-
5Cu-USY	136.13	6.84	608.60	30.57	1245.85	62.59	-	-