Supplementary Materials

Ammonium Ion Enhanced V_2O_5-WO_3/TiO_2 Catalysts for Selective Catalytic Reduction with Ammonia

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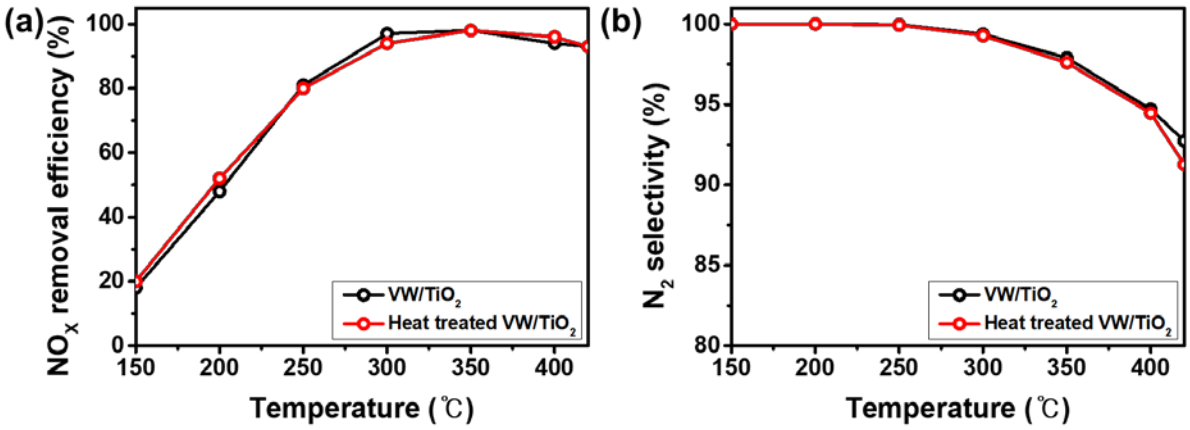

Figure S1. NO_x removal efficiency (**a**) and N_2 selectivity (**b**) of V_2O_5–WO_3/TiO_2 (black line) and heat-treated V_2O_5–WO_3/TiO_2 without the silane coating process (red line). Reaction conditions: [NO] = 300 ppm, [NH_3] = 300 ppm, [SO_2] = 600 ppm, [O_2] = 5 vol.%, and GHSV = 60,000 h^{-1}. There was no significant differences in the NOx removal efficiency and N_2 selectivity between V_2O_5–WO_3/TiO_2 and heat-treated V_2O_5–WO_3/TiO_2 without the silane coating process in the temperature range of 150–420 °C. These results demonstrate that silane coating is a key process in preparing ammonium ion-enhanced V_2O_5–WO_3/TiO_2 catalysts.

Table S1. Atomic percent of elements obtained from the XPS spectra of the heat-treated VW/TiO_2 catalyst without silane coating process.

Sample	Elemental Composition (at. %)								
	N	**O**	**Si**	**F**	**C**	**S**	**V**	**W**	**Ti**
VW/TiO_2	0.40	52.47	-	-	18.28	0.53	1.55	1.82	24.95
Heat-treated VW/TiO_2 (without silane coating)	0.27	55.27	-	-	19.79	0.36	1.29	1.55	21.47

Table S2. X-ray fluorescence analysis of the commercial plate-type monoliths.

Sample	Chemical Composition (wt. %)					
	TiO_2	**V_2O_5**	**WO_3**	**MoO_3**	**Al_2O_3**	**CaO**
Commercial plate-type monoliths	91.08	1.88	0.46	2.15	2.04	1.41