Supporting Information

High surface area VO_x/TiO_2/SBA-15 model catalysts for ammonia SCR prepared by atomic layer deposition

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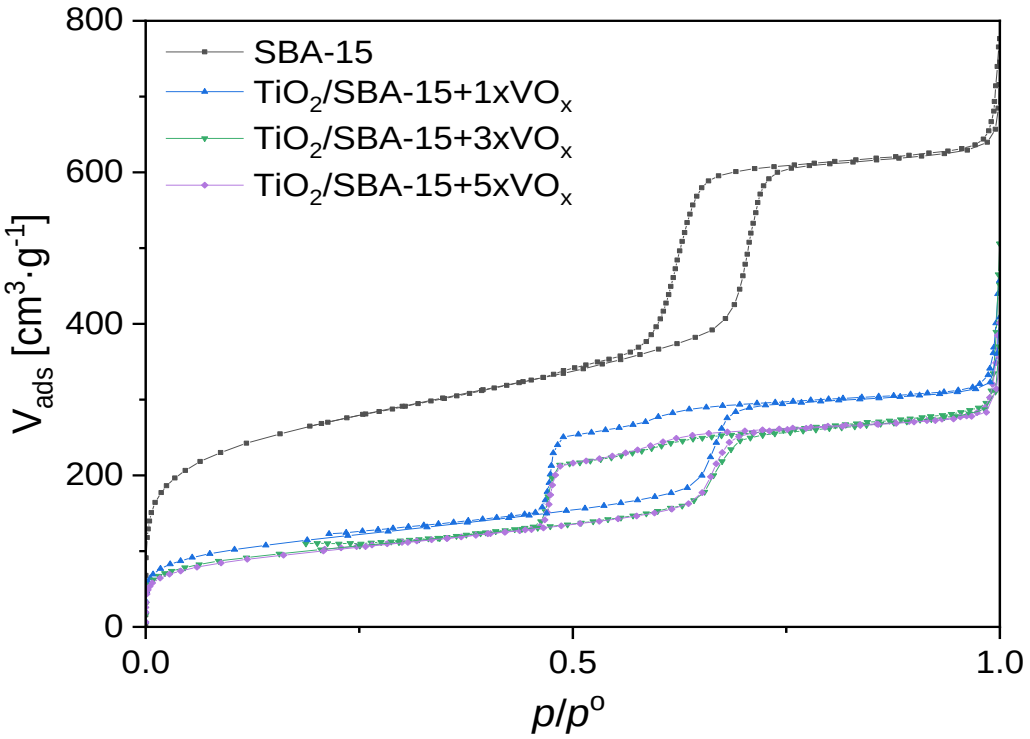

Figure S1. N_2 adsorption-desorption isotherms of TiO_2/SBA-15+*n*VO_x (*n* = 1, 3, and 5) materials and SBA-15.

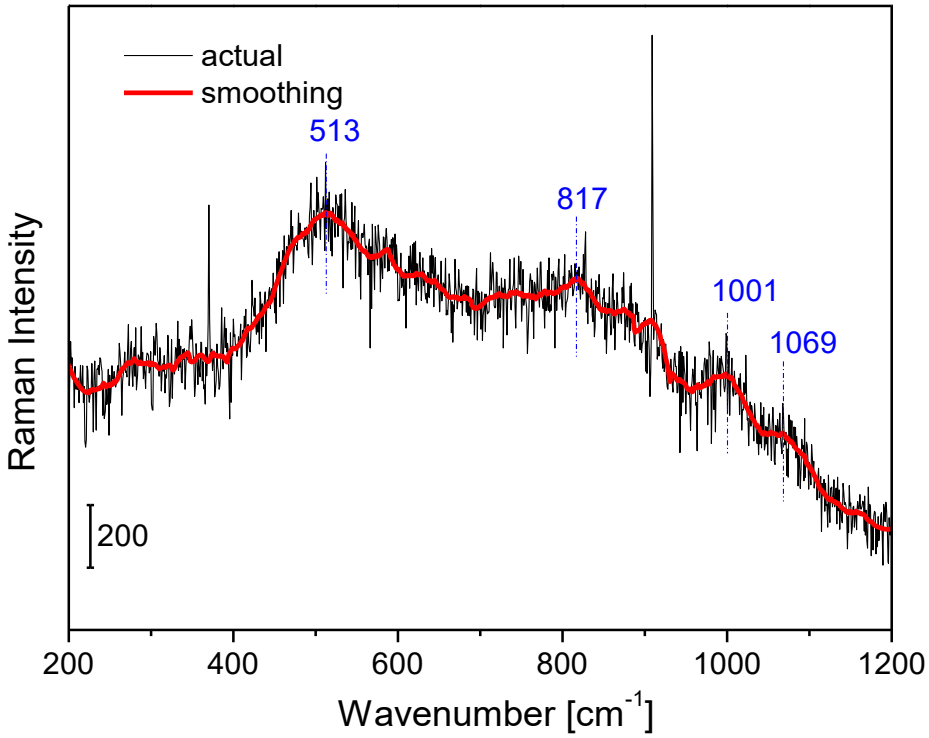

Figure S2. UV-Raman (256.7 nm) of the TiO_2/SBA-15+3xVO_x sample. Prior to VO_x deposition the TiO_2/SBA-15 sample was calcined at 500°C for 2h.

Table S1. Results of the XPS analysis of TiO_2/SBA-15+3xVO_x.

Elements	Position (eV)	FWHM (eV)	% Area	% Area in total
Si	103.8	2.6		23.5
C				5.5
O	532.9	3.4		65.8
V				2.4
V^{4+}	517.6	3.2	66.5	
V^{5+}	516.3	3.2	33.5	
Ti				2.8
Ti-O-Ti	458.7	2.0	51.7	
Ti-O-Si	459.9	2.4	48.3	

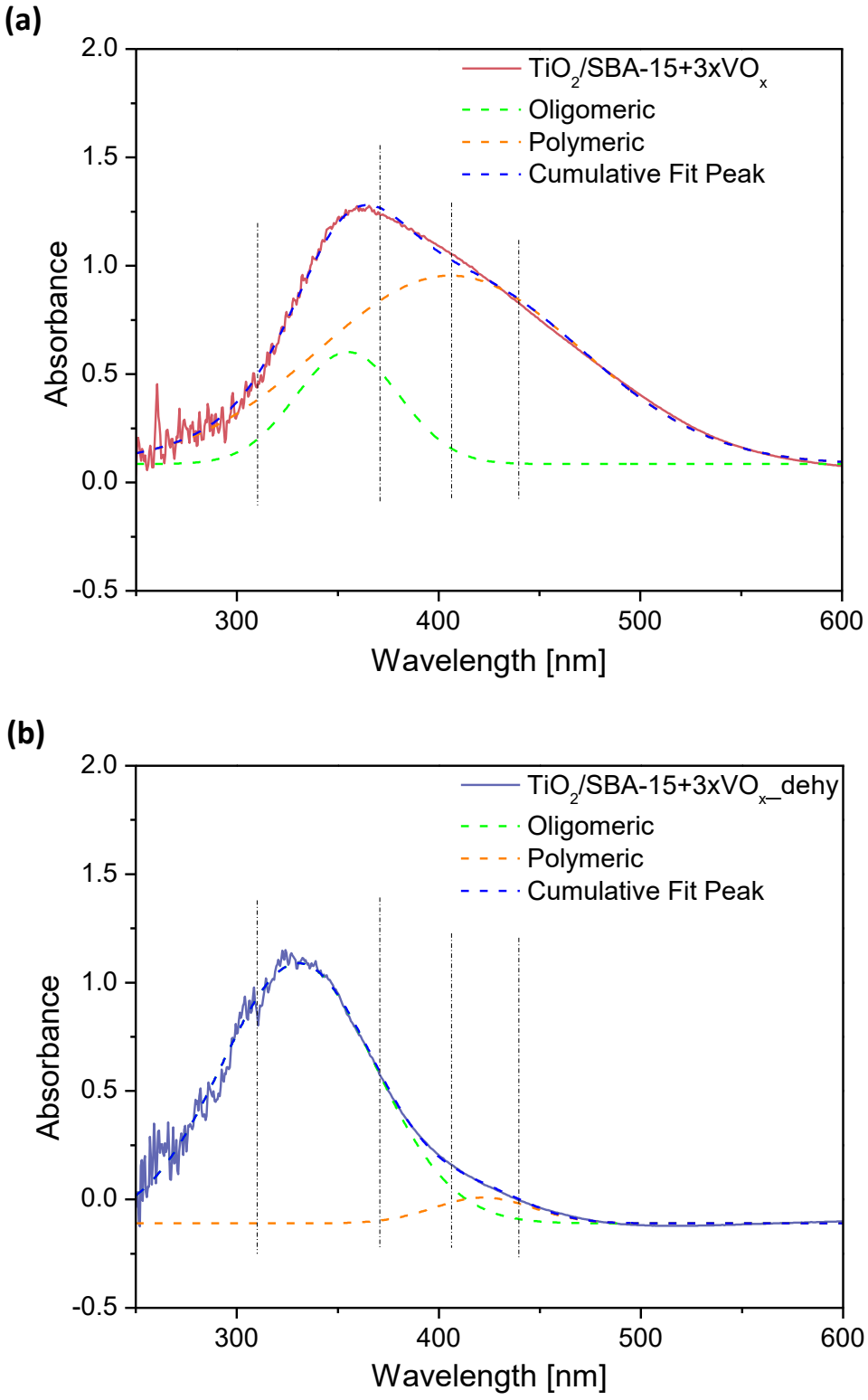

Figure S3. UV-Vis DRS of TiO_2/SBA-15+3xVO_x sample using TiO_2/SBA-15 as the reference background. (a) hydrated, (b) dehydrated.

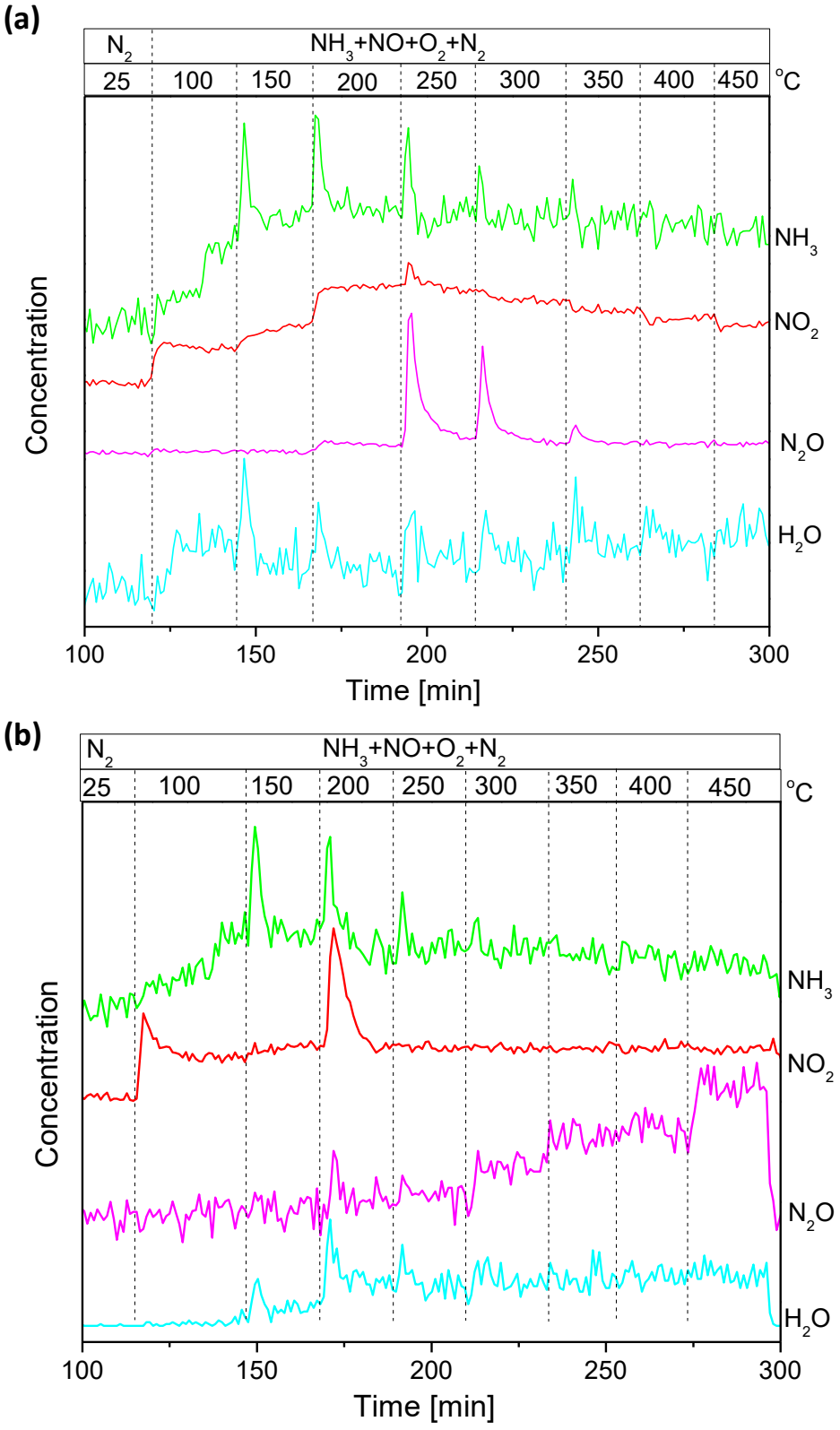

Figure S4. *In situ* detection of the exhaust gas during NH_3-SCR reaction over (a) TiO_2/SBA-15+1xVO_x and (b) TiO_2/SBA-15+5xVO_x catalysts at 100-450°C. The gas feed consisted of 500 ppm NH_3, 500 ppm NO, and 5% O_2 (balanced with N_2). The total flow rate was 50 Nml/min (GHSV = 40000 h^{-1}).