Supporting information

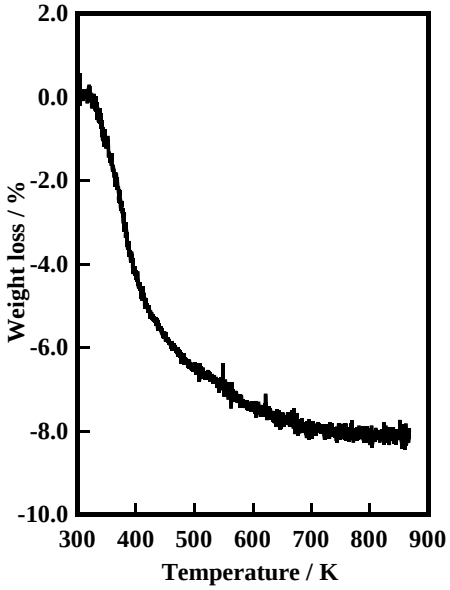

Figure S1. TG data of the titanium oxyhydroxide sample, $TiO_2 \cdot TiO(OH)_2$(W).

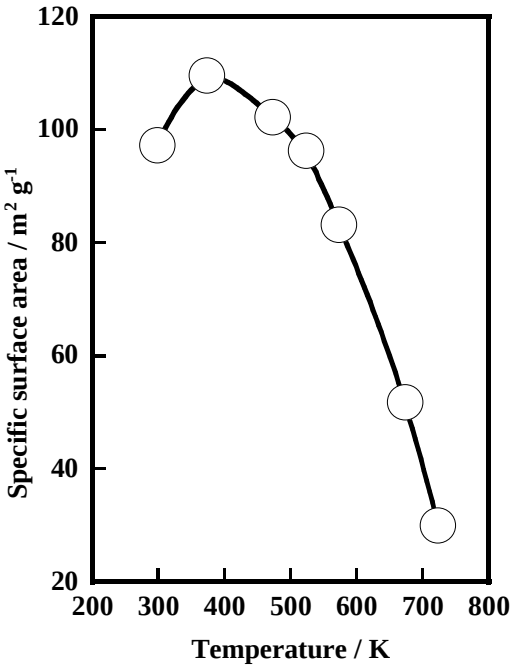

Figure S2. Specific surface area of the $TiO_2 \cdot TiO(OH)_2$(W) sample after evacuation at various temperatures.

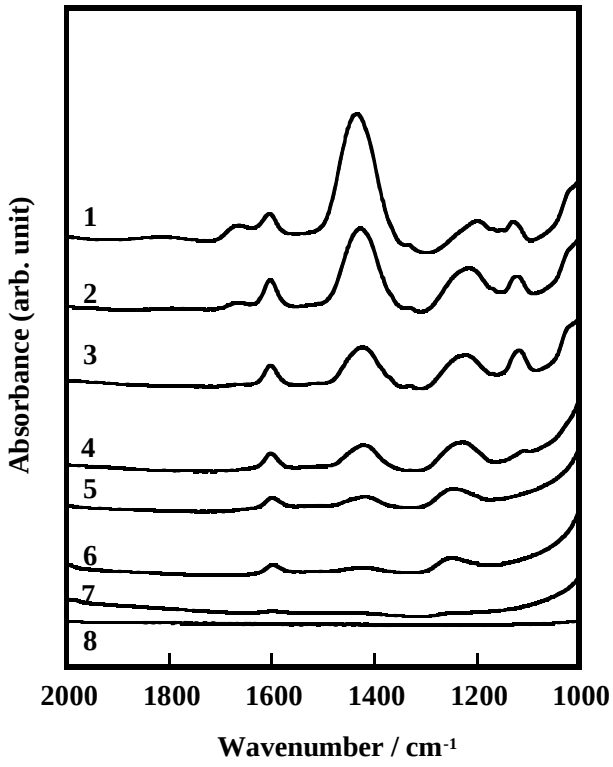

Figure S3. IR spectra in the region of 2000–1000 cm^{-1} for the $TiO_2 \cdot TiO(OH)_2$(A) sample evacuated at various temperatures: (1) 300, (2) 373, (3) 423, (4) 473, (5) 523, (6) 573, (7) 623, and (8) 673 K.

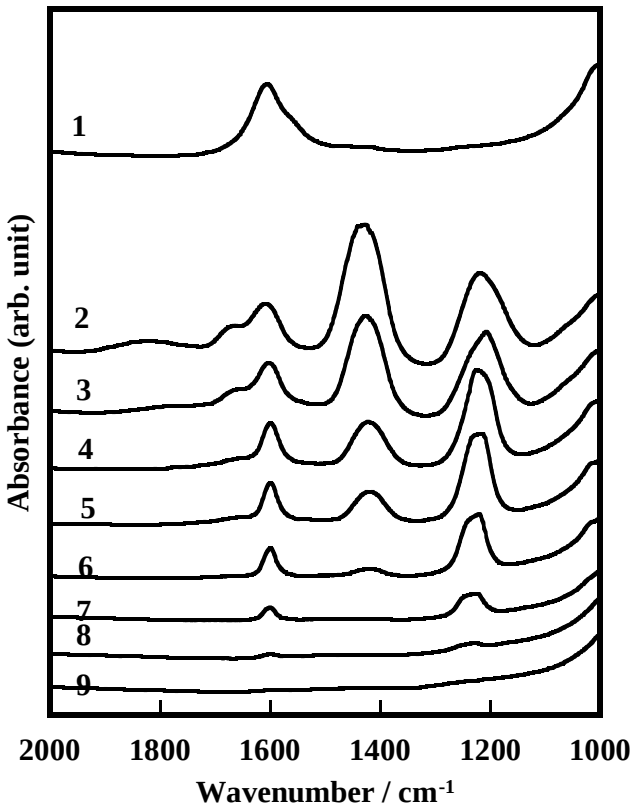

Figure S4. IR spectra in the region of 2000–1000 cm^{-1} for NH_3 adsorption and succeeding evacuation processes of the $TiO_2 \cdot TiO(OH)_2$(W) sample which had been evacuated at 300 K. The number represents the evacuation temperature: (1) 300 K-evacuated, (2) equilibrated with NH_3 gas under a pressure of 1.3 kPa at 300 K, followed by reevacuation at (3) 300, (4) 373, (5) 423, (6) 473, (7) 523, (8) 573, and (9) 623 K.

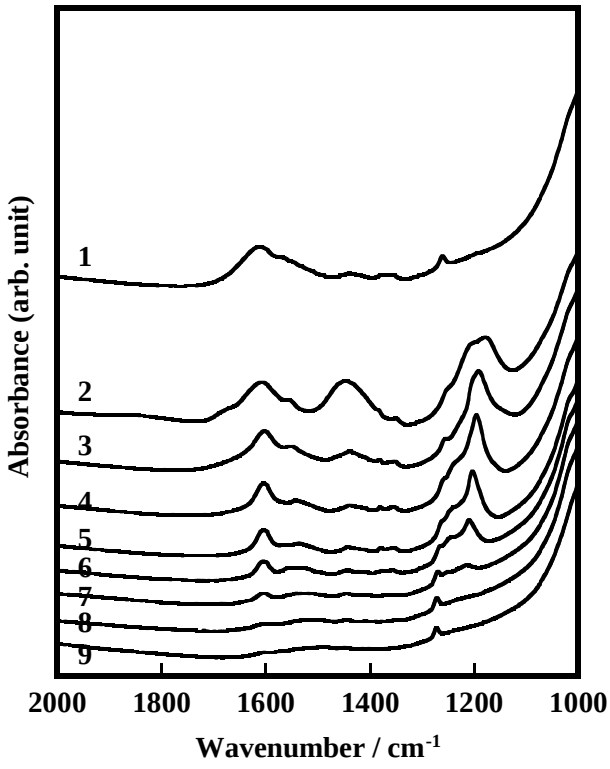

Figure S5. IR spectra in the region of 2000–1000 cm^{-1} for NH_3 adsorption and succeeding evacuation processes of the $TiO_2 \cdot TiO(OH)_2$(W) sample which had been evacuated at 523 K. The number represents the evacuation temperature: (1) 300 K-evacuated, (2) equilibrated with NH_3 gas under a pressure of 1.3 kPa at 300 K, followed by reevacuation at (3) 300, (4) 373, (5) 423, (6) 473, (7) 523, (8) 573, and (9) 623 K.

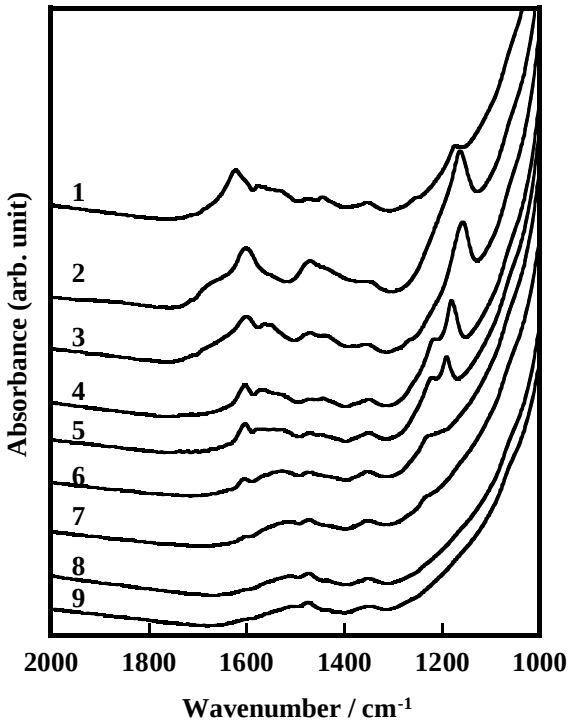

Figure S6. IR spectra in the region of 2000–1000 cm^{-1} for NH_3 adsorption and succeeding evacuation processes of the $TiO_2 \cdot TiO(OH)_2$(W) sample which had been evacuated at 723 K. The number represents the evacuation temperature: (1) 300 K-evacuated, (2) equilibrated with NH_3 gas under a pressure of 1.3 kPa at 300 K, followed by reevacuation at (3) 300, (4) 373, (5) 423, (6) 473, (7) 523, (8) 573, and (9) 623 K.

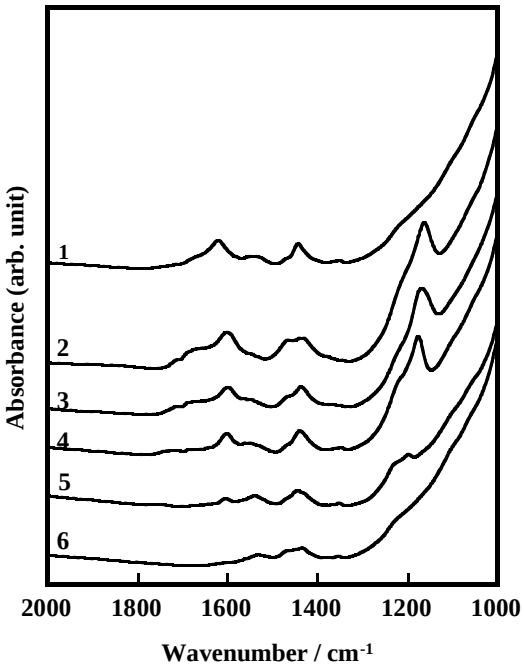

Figure S7. IR spectra in the region of 2000–1000 cm^{-1} for NH_3 adsorption and succeeding evacuation processes of the TiO_2 (P) sample which had been evacuated at 300 K. The number represents the evacuation temperature: (1) 300 K-evacuated, (2) equilibrated with NH_3 gas under a pressure of 1.3 kPa at 300 K, followed by reevacuation at (3) 300, (4) 373, (5) 473, and (6) 573 K.