

## Electronic Supplementary Information (ESI)

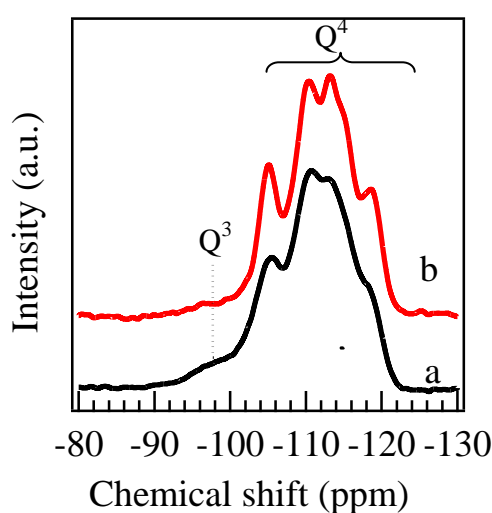
### Post-synthesis, Characterization and Catalytic properties of Fluorine-Planted MWW-Type Titanosilicate

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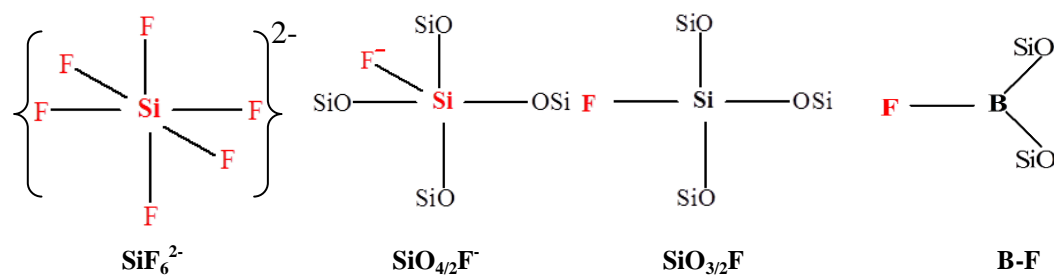
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**Fig. S1** Solid-state <sup>29</sup>Si MAS NMR spectra of Ti-MWW (a) and F-Ti-MWW (b).



**Fig. S2** The possible structure of Si-F species and B-F units in the F-Ti-MWW.

**Table S1** Epoxidation of 1-hexene with  $\text{H}_2\text{O}_2$  over various F-Ti-MWW<sup>a</sup>

No.	Treatment additive <sup>b</sup>	1-Hexene conv. /%	$\text{H}_2\text{O}_2$ conv. /%
1	Conventional Ti-MWW <sup>c</sup>	41.6	49.4
2	$\text{NH}_4\text{F}$	58.5	67.4
3	$\text{NaF}$	56.3	69.7
4	$\text{KF}$	55.2	65.6
5	$\text{HF}$	44.0	59.8
6	$\text{NH}_4\text{NO}_3$	40.3	51.3

<sup>a</sup> Reaction conditions: catalyst, 50 mg; MeCN, 10 mL; 1-hexene, 10 mmol;  $\text{H}_2\text{O}_2$  (30 wt %), 10 mmol; temp., 333 K; time, 2 h.

<sup>b</sup> Treatment conditions: the Ti-MWW precursor ( $\text{Si}/\text{Ti} = 25$  in the gel) was treated in 2 M  $\text{HNO}_3$  solution with the addition of various additives ( $\text{Si}/\text{additive}$  molar ratio = 26) and a solid-to-liquid ratio of 1 g to 30 mL at 377 K for 5 h, then the acid-treated products were finally calcined at 823 K for 6 h.

<sup>c</sup> Ti-MWW prepared with conventional method in the absence of fluorine.

**Table S2** Chemical compositions of fresh and deactivated (used 10 times) catalysts.

No.	Catalyst	Si/Ti	Si/B
1	fresh Ti-MWW	42	87
2	deactivated Ti-MWW	59	237
3	fresh F-Ti-MWW	29	68
4	deactivated F-Ti-MWW	47	203

<sup>a</sup> Molar ratio determined by ICP.