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Supporting information

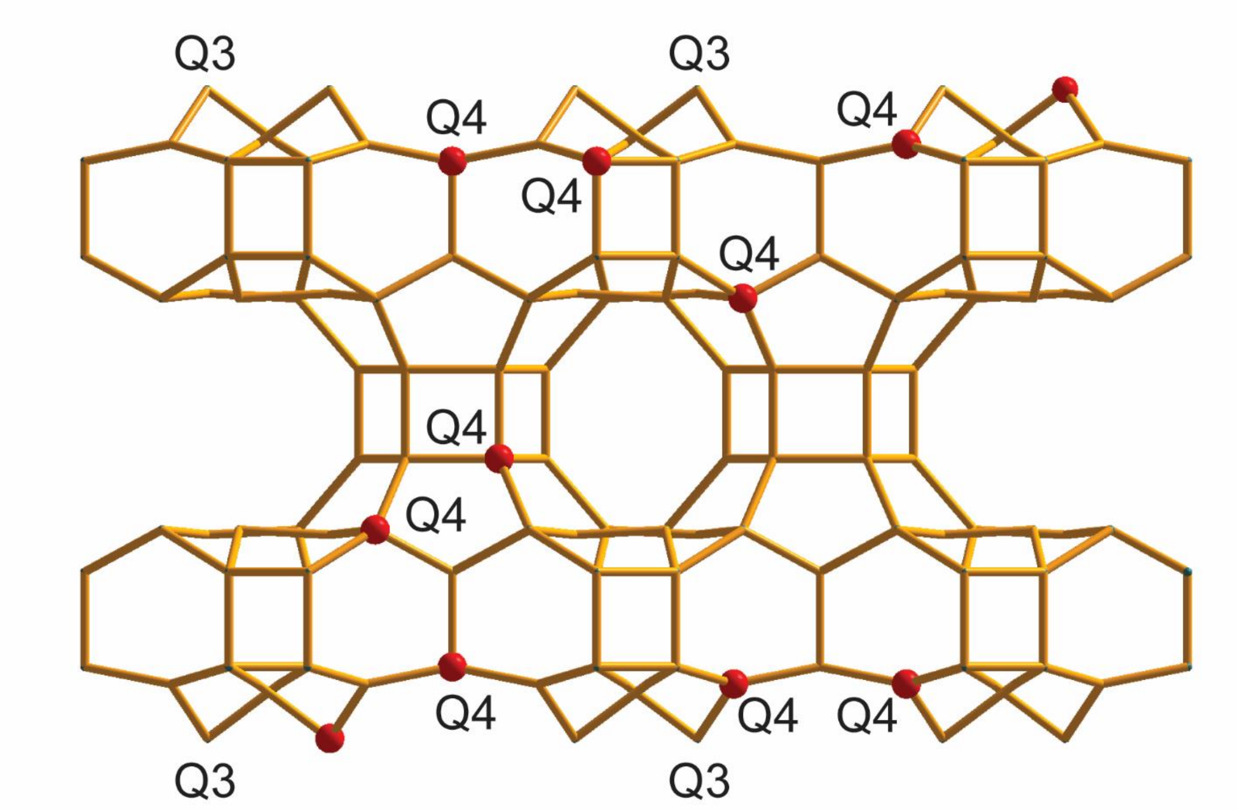

Figure S1: Distribution of B-sites in zeolite framework B-SSZ-70 (B-sites are highlighted as red spheres). Exchange of titanium atoms for boron heteroatoms labeled as 'Q4' will lead to framework titanium sites. In addition, titanium can bind to sites labeled 'Q3', which represent isolated silanol groups on the external surface. Compared to the number of framework titanium sites after Ti-B-exchange, the Ti-sites bound to external silanol groups are a minority.

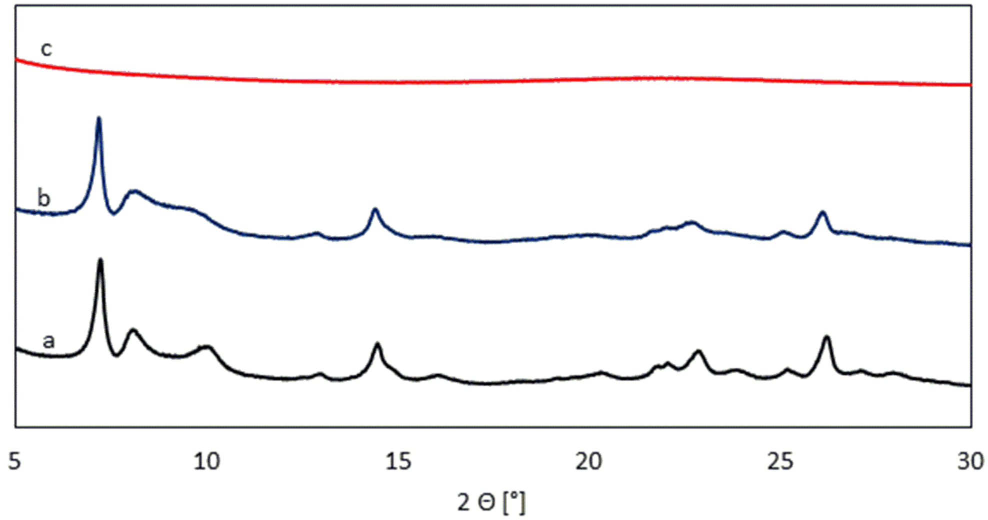

Figure S2: PXRD-pattern for the precursors B-SSZ-70 (a), UCB-4 (b) andSiO_2 (c) described in the manuscript.

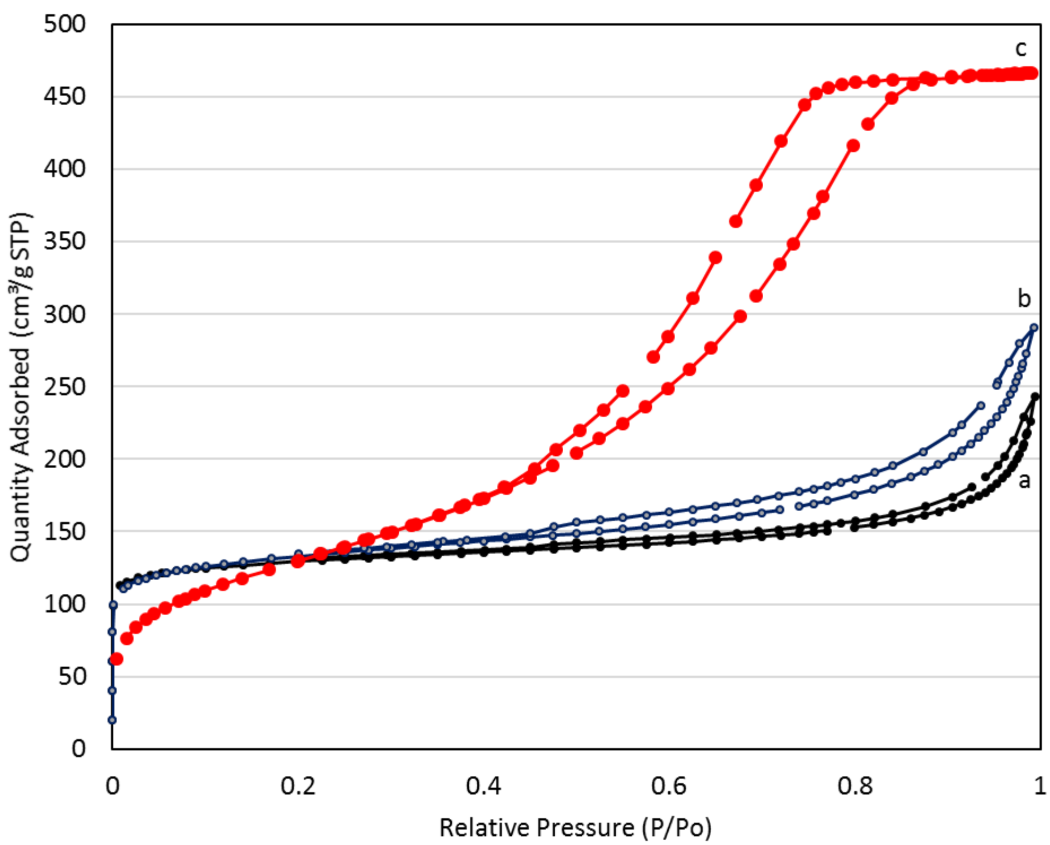

Figure S3: N_2 adsorption isotherms for B-SSZ-70 (a), UCB-4 (b), and SiO_2 (c) described in the manuscript.

Scanning electron microscopy images

Figure S4 and *Figure* show images of the surface attained by scanning electron microscopy (SEM) of the amorphous Ti-SiO_2 and the crystalline Ti-UCB-4 before and after their use in flow catalysis. The surface of titanium on amorphous silica (Figure S4) shows in a scale of 10 µm no significant visible changes. The crystalline Ti-UCB-4 (*Figure*S5) shows small plates, which indicate the delaminated zeolite, but in this magnitude of 10 µm no notable change of the surface caused by catalysis is observed.

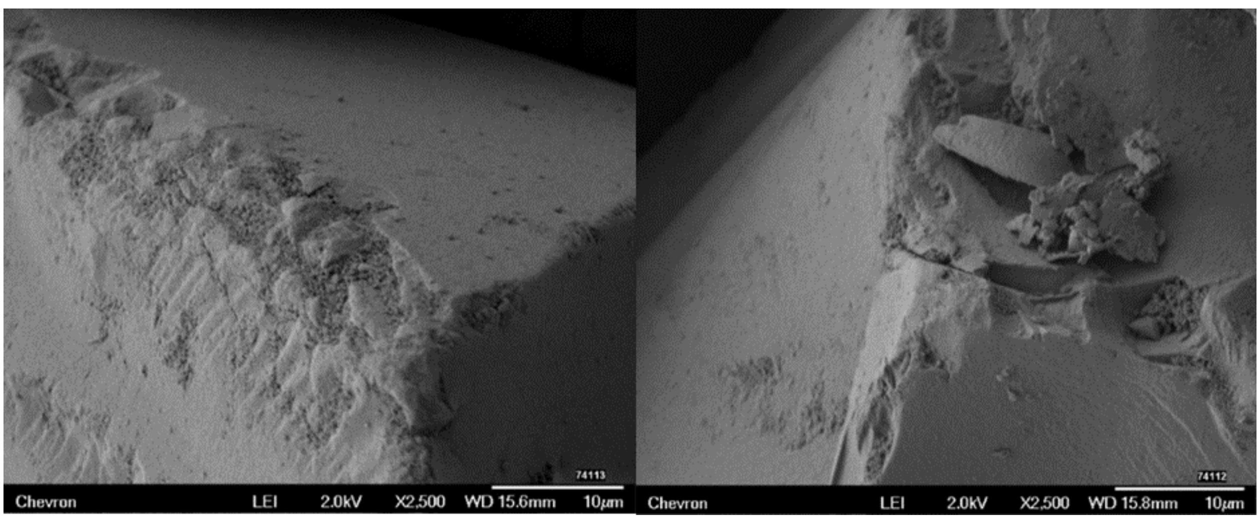

Figure S4: SEM pictures of Ti-SiO_2 before (left) and after using as catalyst in an epoxidation flow test (right).

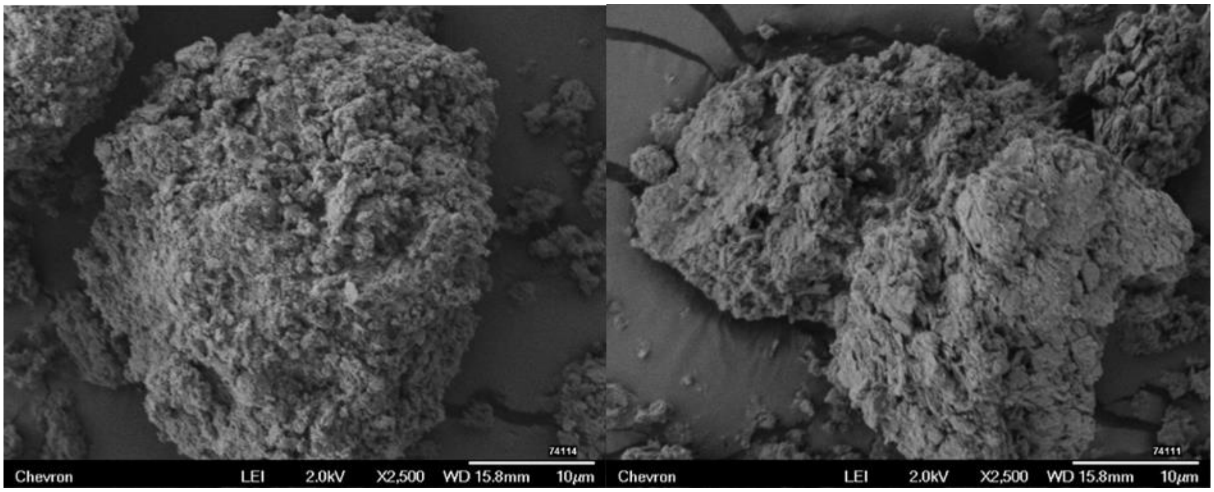

Figure S5: SEM images of Ti-UCB-4 before (left) and after using in a flow experiment (right).

Additional catalysis experiment

To illustrate that the increase for the selectivity at 23 and 24 hours of flow in Figure 3a is not a trend, Figure shows a reproduction of this experiment for Ti-SiO_2. The EBHP conversion decreases comparable to the EBHP conversion in Figure 3b and the selectivity is stable at 64 ±4%.

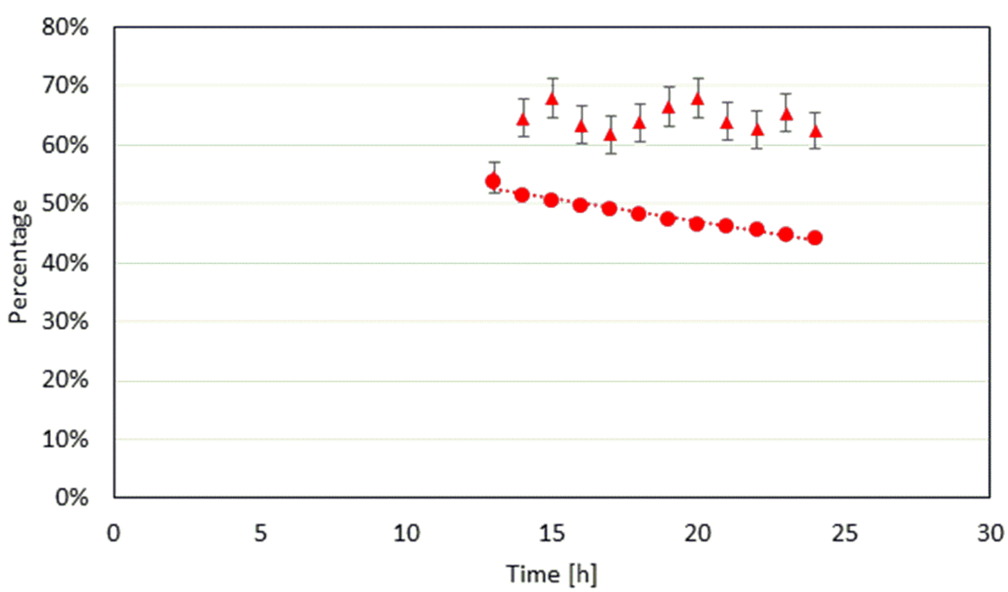

Figure S6: Reproduction of Catalysis data for Ti-SiO_2 for low target conversion (conversion of EBHP (•), selectivity of 1,2-epoxyoctane (▲)). The conversion is decreasing and the selectivity is stable.

Calculations

Calculation for reaction rate constant based on catalyst mass k':

$$k' = \frac{-\ln(1 - X_{EBHP}) \cdot \dot{v}}{m_{cat}}$$

Calculation for reaction rate constant based on Ti-content k:

$$k' = \frac{-\ln(1 - X_{EBHP}) \cdot \dot{v}}{m_{Ti}}$$

X_{EBHP} = average EBHP conversion from the run with the highest conversion; 0.84 for Ti-SiO_2, 0.92 for Ti-UCB-4

$\dot{v}$ = flow rate [mL/h]; 1.3 mL/h for Ti-SiO_2, 1.0 mL/h for Ti-UCB-4

m_{cat} = mass of the catalyst; 0.018 g Ti-SiO_2, 0.025 g Ti-UCB-4

m_{Ti} = mass of titanium in the catalyst; $2.484 \cdot 10^{-4}$ g in Ti-SiO_2, $1.025 \cdot 10^{-4}$ g in Ti-UCB-4