

Supporting information

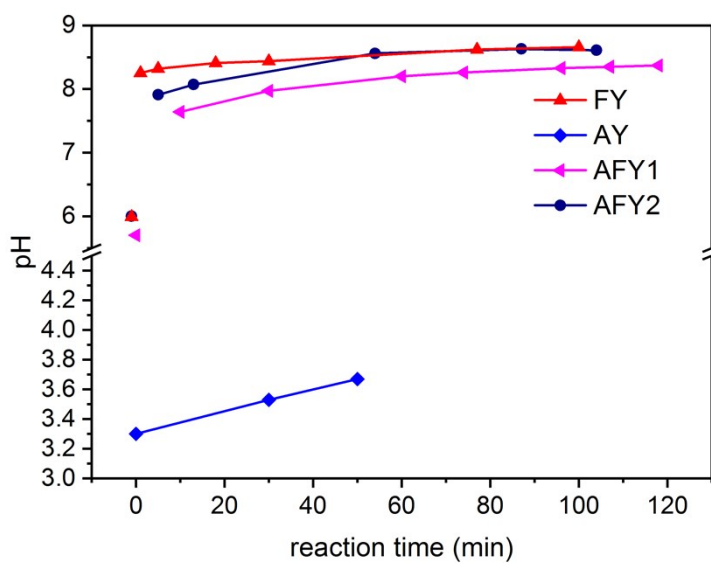


Figure S1 Variations of pH of the zeolite-etchant mixtures along with the extension of reaction time applied for the preparation of samples AY, FY and AFY.

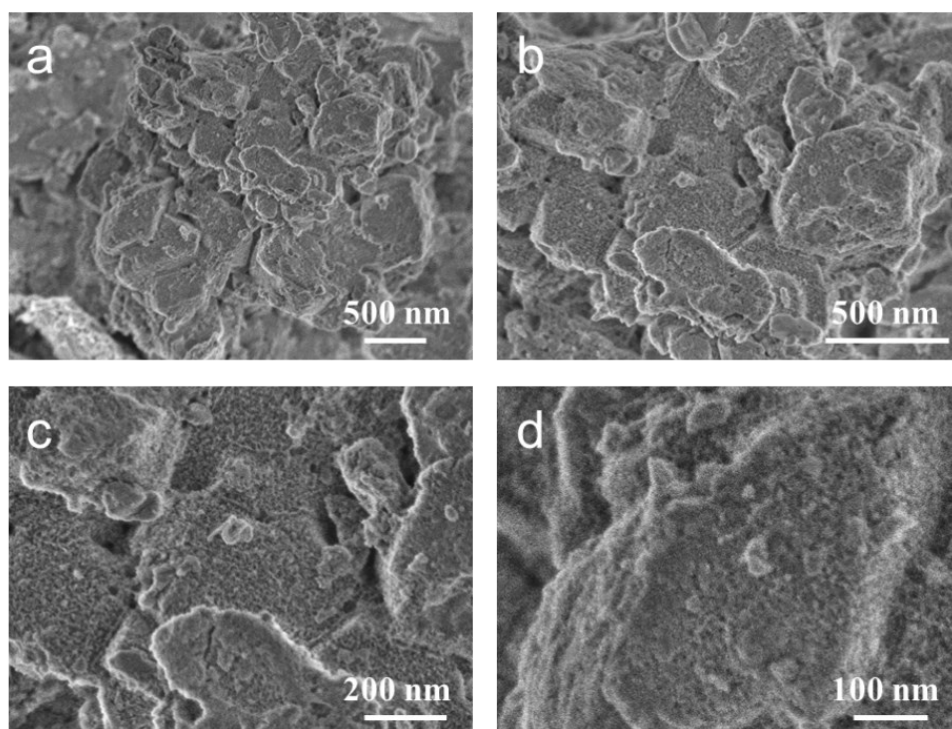


Figure S2 SEM images of the AFY1 zeolite at different magnifications (a-d).

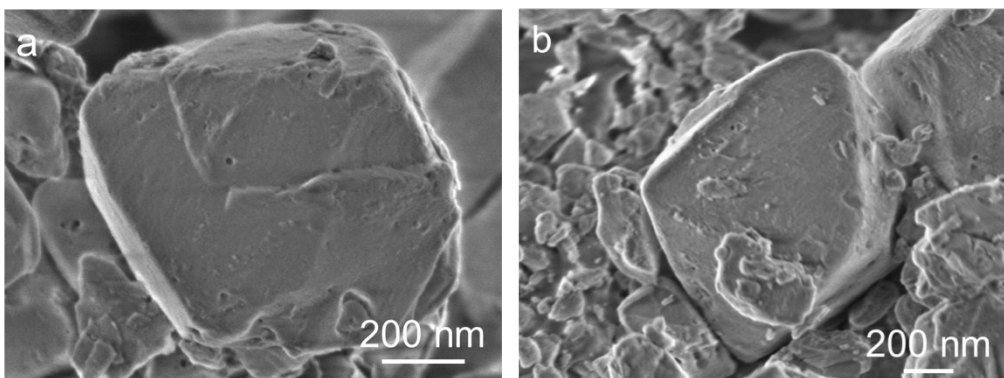


Figure S3 SEM images of the oxalic acid treated (a) and the  $\text{NH}_4\text{F}$  treated (b) zeolite Y samples.

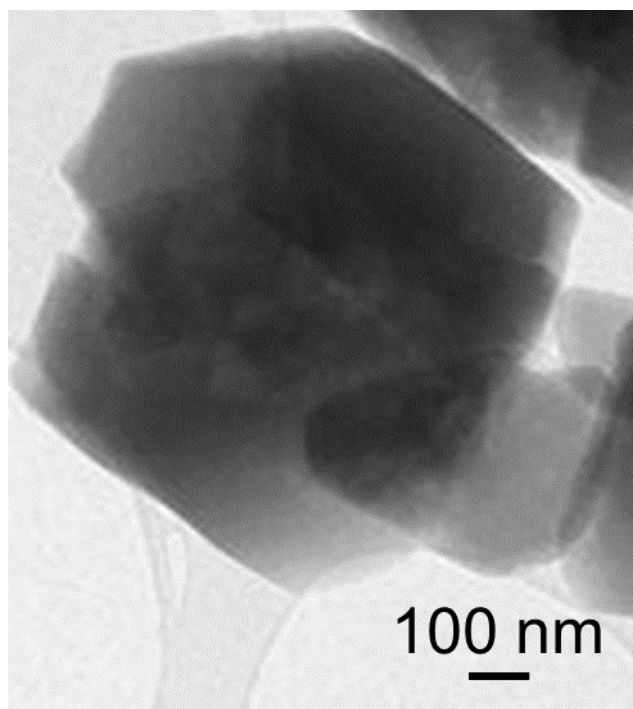


Figure S4 TEM image of the parent zeolite Y (PY)

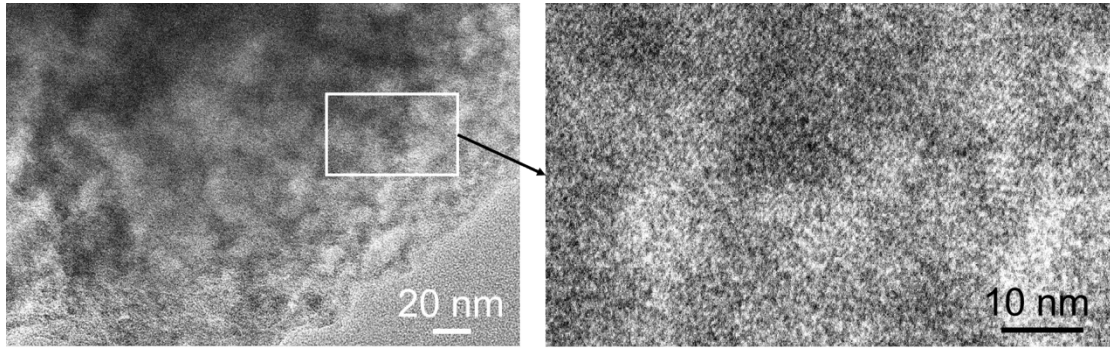


Figure S5 HRTEM pictures showing the presence of lattice fringes in the AFY1 sample.

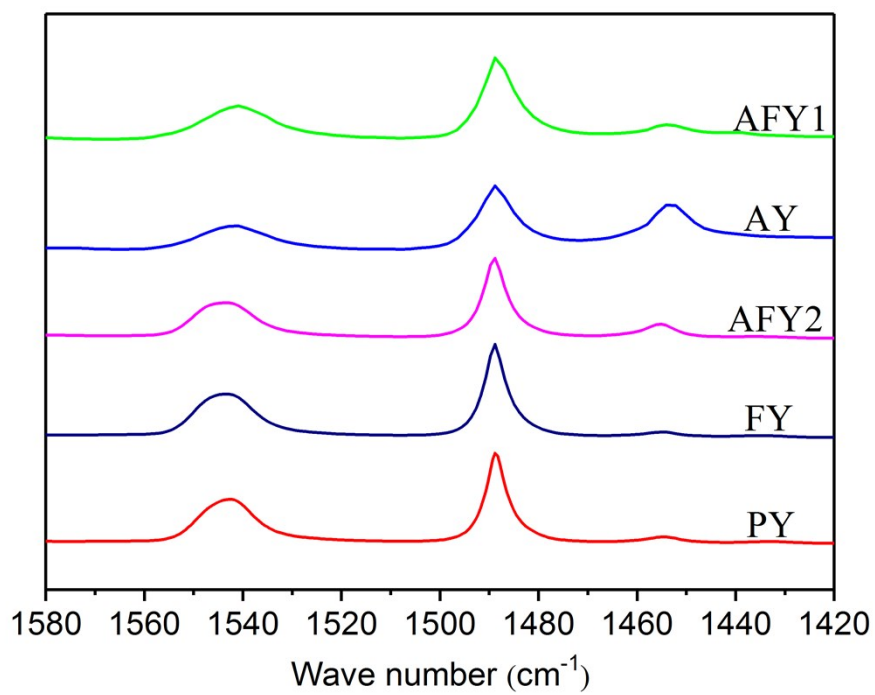


Figure S6 IR spectra using pyridine on parent and treated samples

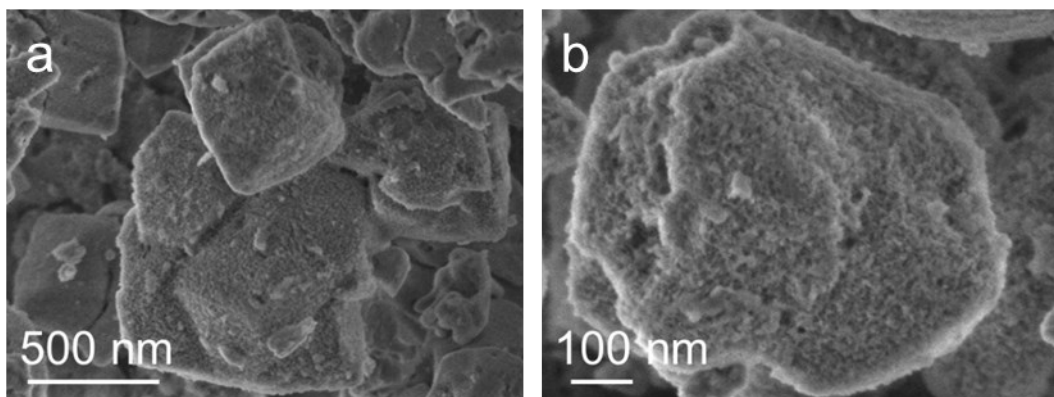


Figure S7 SEM images of the AFY2 zeolite at different magnifications.

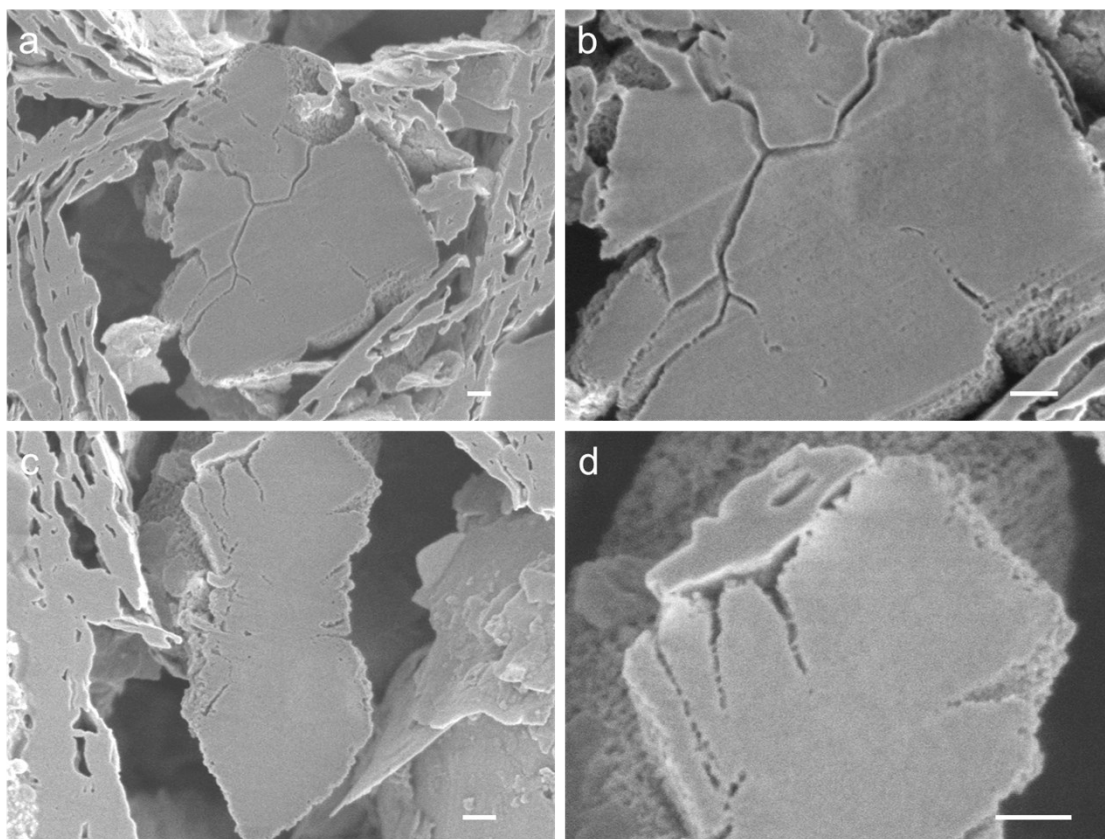


Figure S8 Cross-section SEM images of the AFY2 zeolite crystals (a-d, scale bar = 100 nm).