Supporting information

"Efficient Oligomerization of Pentene into Liquid Fuels on Nanocrystalline Beta Zeolites"

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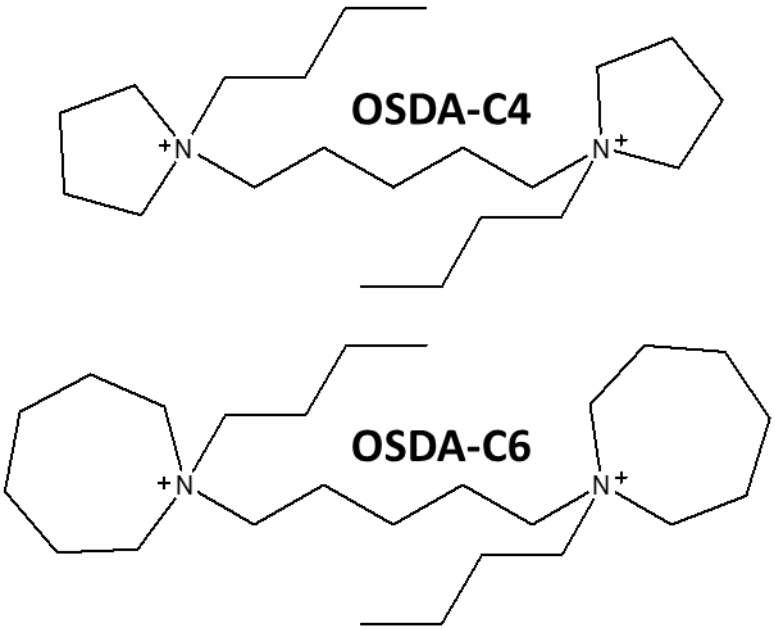

Figure S1: Organic structure directing agents used for the synthesis of the nanocrystalline Beta zeolites**.**

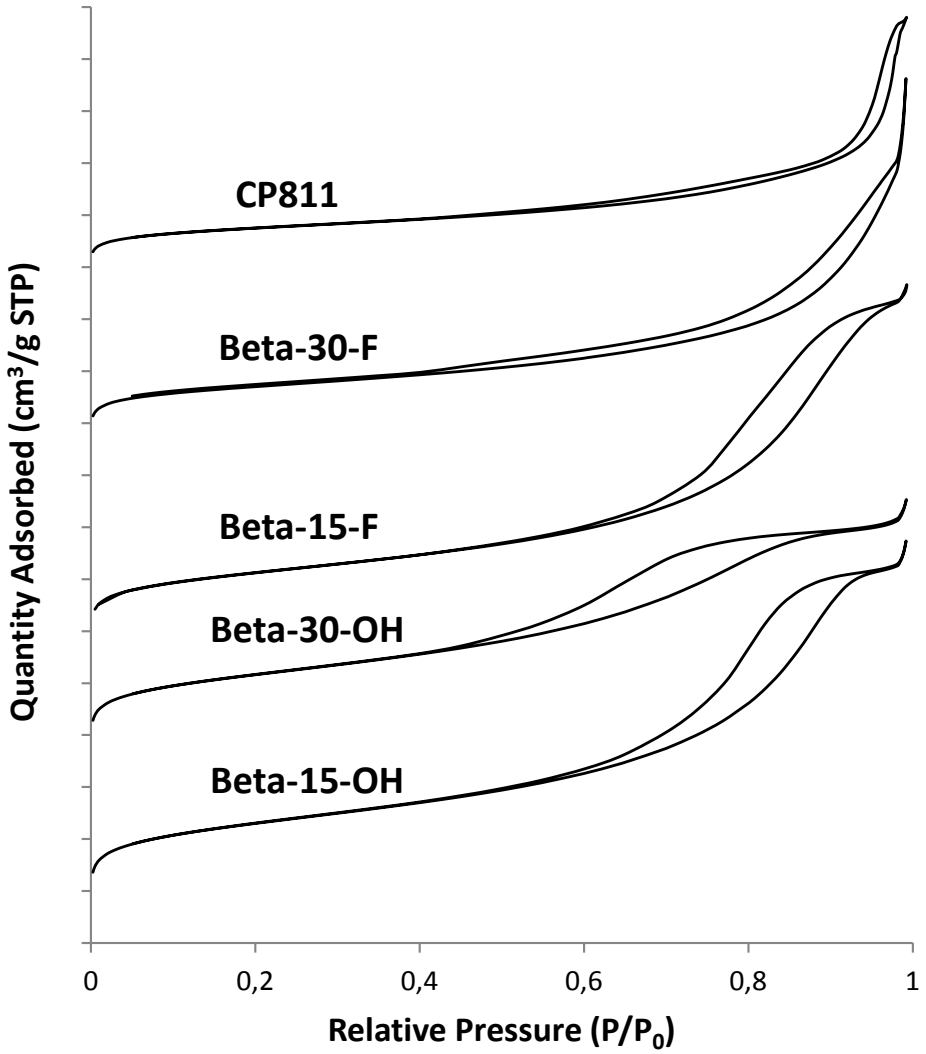

Figure S2. N_2 adsorption isotherms of the nanosized Beta zeolites in their calcined form.

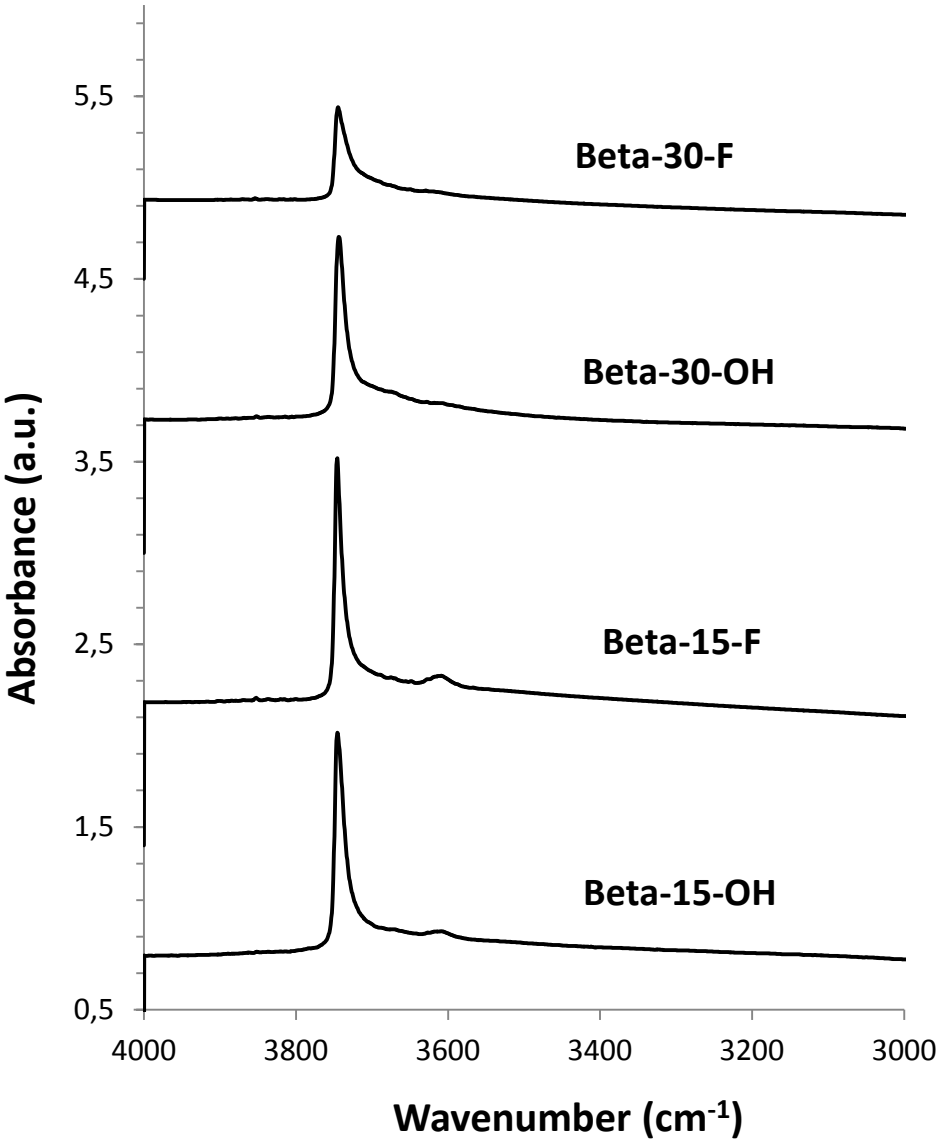

Figure S3. Transmission FTIR spectra in the O-H region of the different nanosized Beta zeolites.

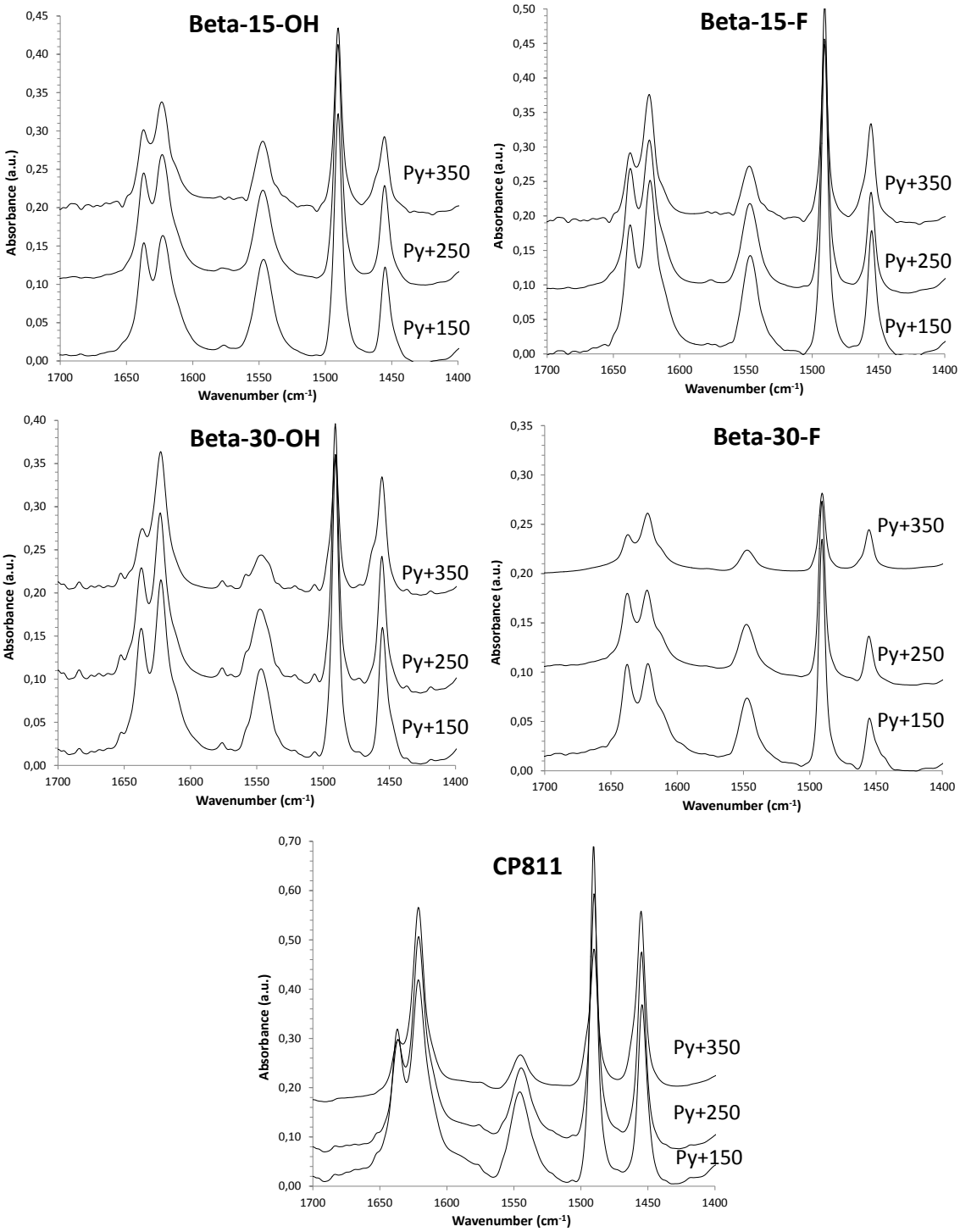

Figure S4. Transmission FTIR spectra in the stretching C–C region of the different nanosized Beta zeolites after adsorbing pyridine followed by desorption at 150, 250, and 350ºC.

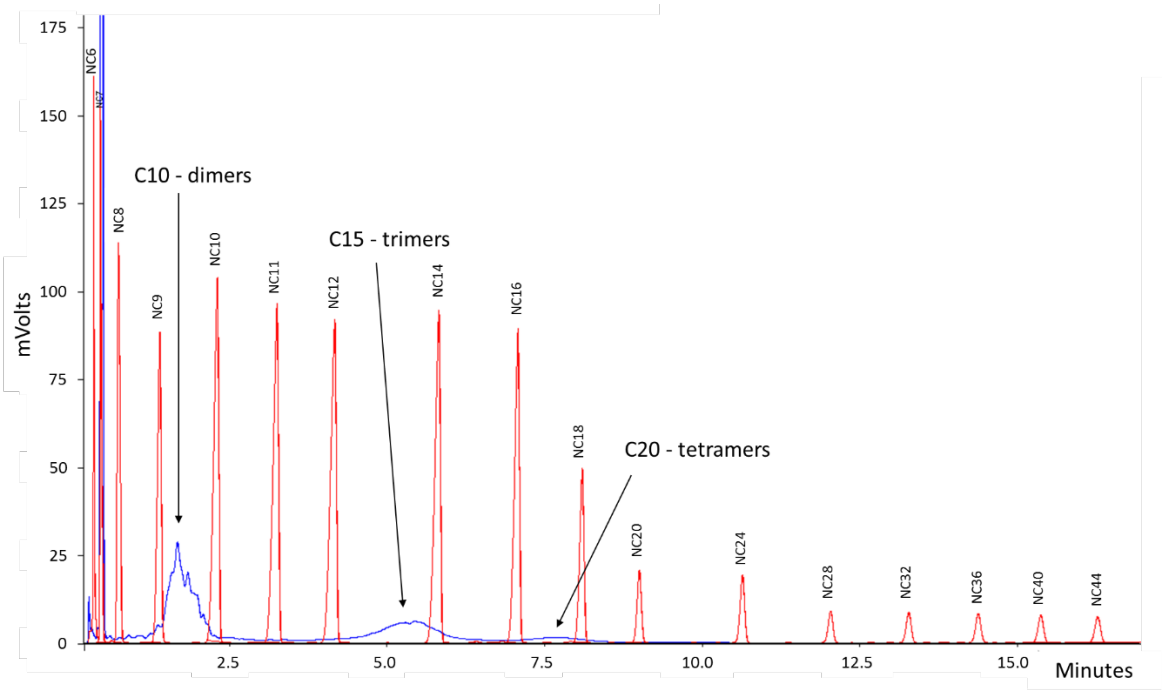

Figure S5: Product distribution within the liquids collected during the first three hours TOS for Beta-15-OH catalysts, according to simulated distillation and compared with a D2887-pattern of n-paraffins. W/F=2.8 g·h·mol^{-1}, T=200°C, P = 4.0 MPa and 60% mol olefin in the feed.

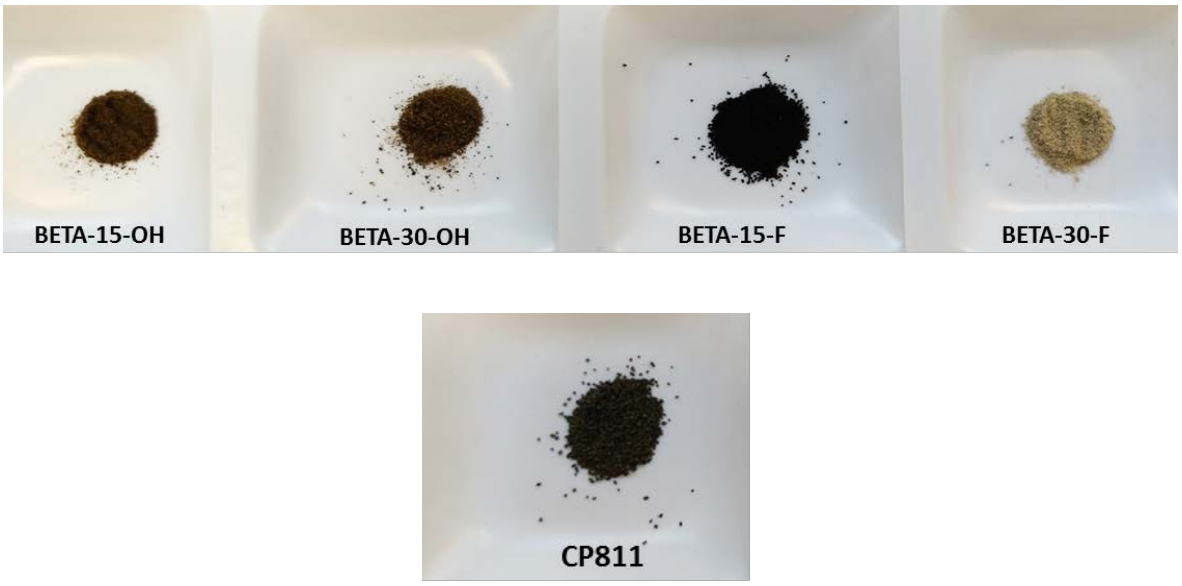

Figure S6: Color of the spent catalysts obtained after 1-pentene oligomerization at W/F = 2.8 g·h·mol^{-1} T=200ºC, P = 4.0 MPa and 60% mol olefin in the feed.

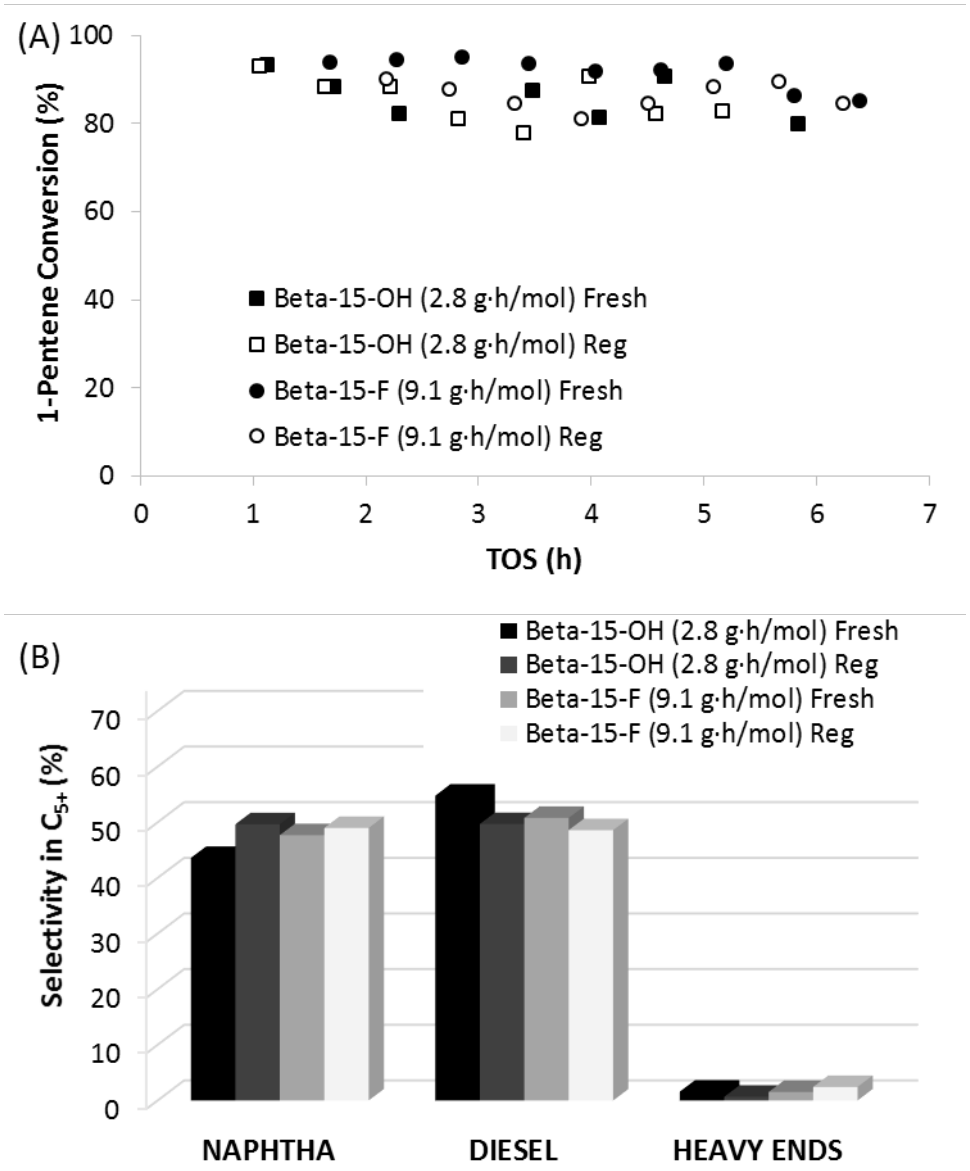

Figure S7: (A) Pentene conversion vs. TOS and (B) Selectivity within the accumulated C_{5+} liquid fractions (TOS = 0-3 h) for the Beta-15-OH and Beta-15-F at W/F = 2.8 and 9.1 $g \cdot h \cdot mol^{-1}$, respectively, fresh and regenerated (Reg).