

Supporting Information

Effect of Heteroatom Concentration in SSZ-13 on the Methanol-to-Olefins Reaction

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SSZ-13 XRD Patterns Showing Peak Shift with Si/Al Change

Cropped SSZ-13 XRD patterns (adapted from Figure 3) are shown to demonstrate how the unit cell size changes with changing Al content, as expected. Note how the main peak at approximately 9.5° shifts to lower 2 Θ values (as indicated by the red trace).

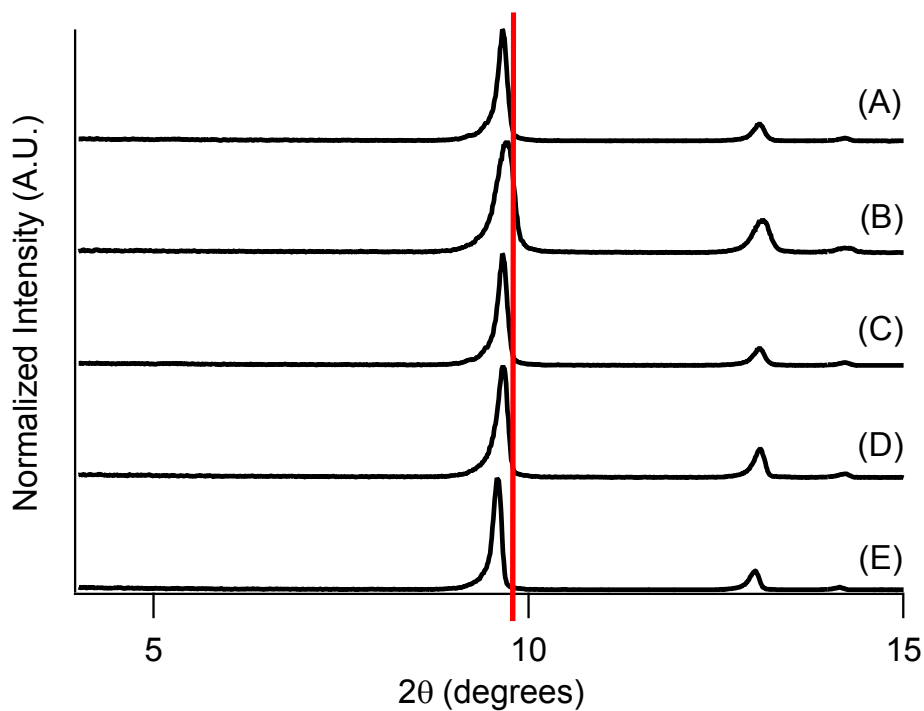


Figure S1. Cropped SSZ-13 XRDs.

SEM Images of SSZ-13 Samples

SEM images of some of the SSZ-13 samples are added to show crystallinity of the samples.

SSZ-13A:

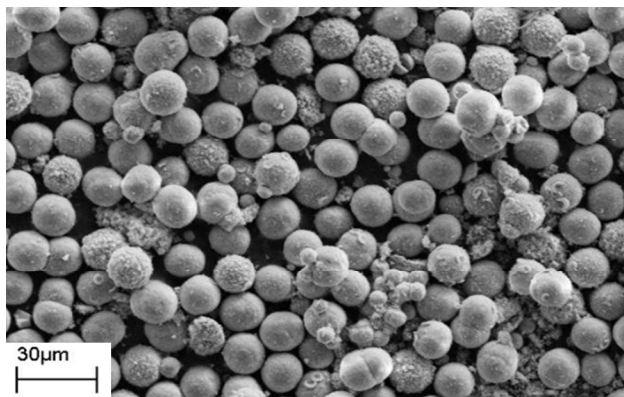


Figure S2. SEM of SSZ-13A.

SSZ-13E:

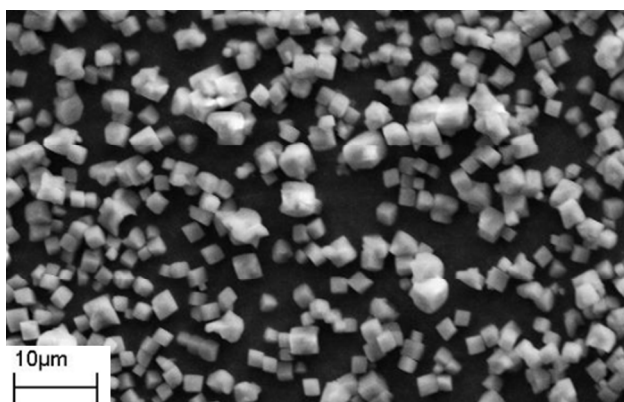


Figure S3. SEM of SSZ-13E.

Reaction Data for Steamed and Cu²⁺-exchanged SSZ-13 Samples

These SSZ-13 samples were synthesized, steamed, and Cu-exchanged according to the procedures reported in the manuscript. Reaction conditions were slightly different, with tests being conducted on a BTRS, Jr. reaction apparatus at 400°C, 1.3 h⁻¹ WHSV, 10% MeOH in inerts (5% Ar/95% He), and atmospheric pressure using 200 mg of dry catalyst sieved to between 30 and 100 mesh.

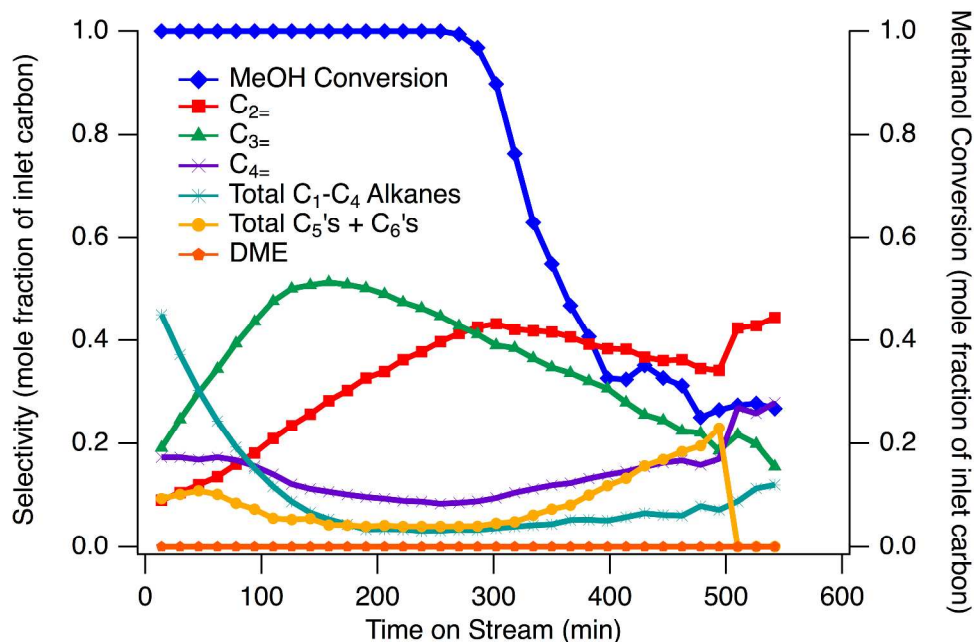


Figure S4. MTO Data for Unsteamed H-SSZ-13.

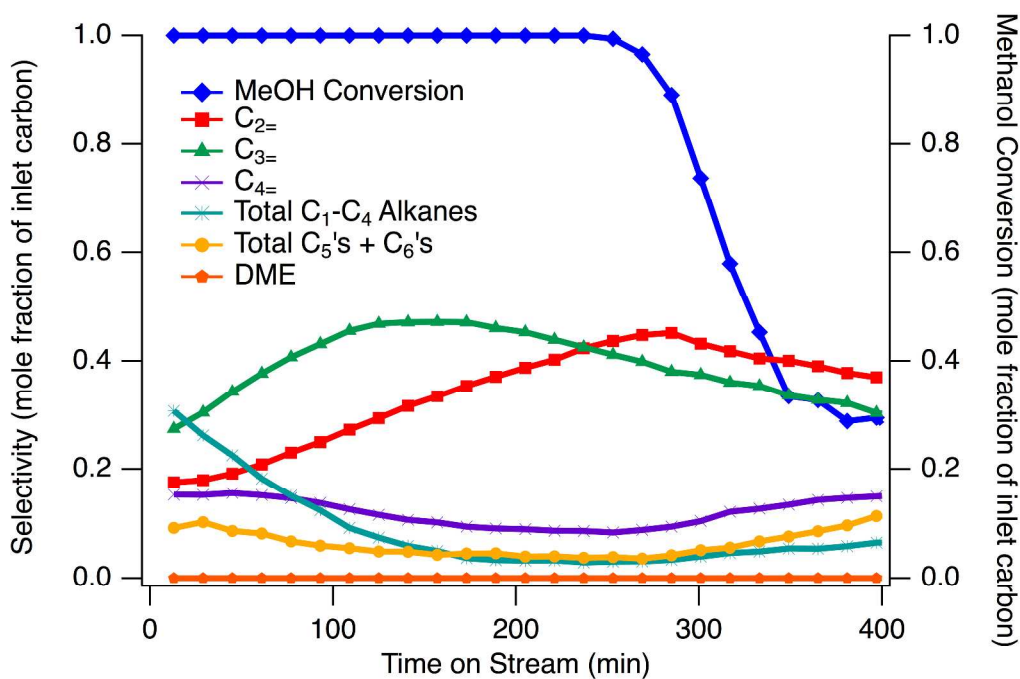


Figure S5. MTO Data for Unsteamed Cu-SSZ-13.

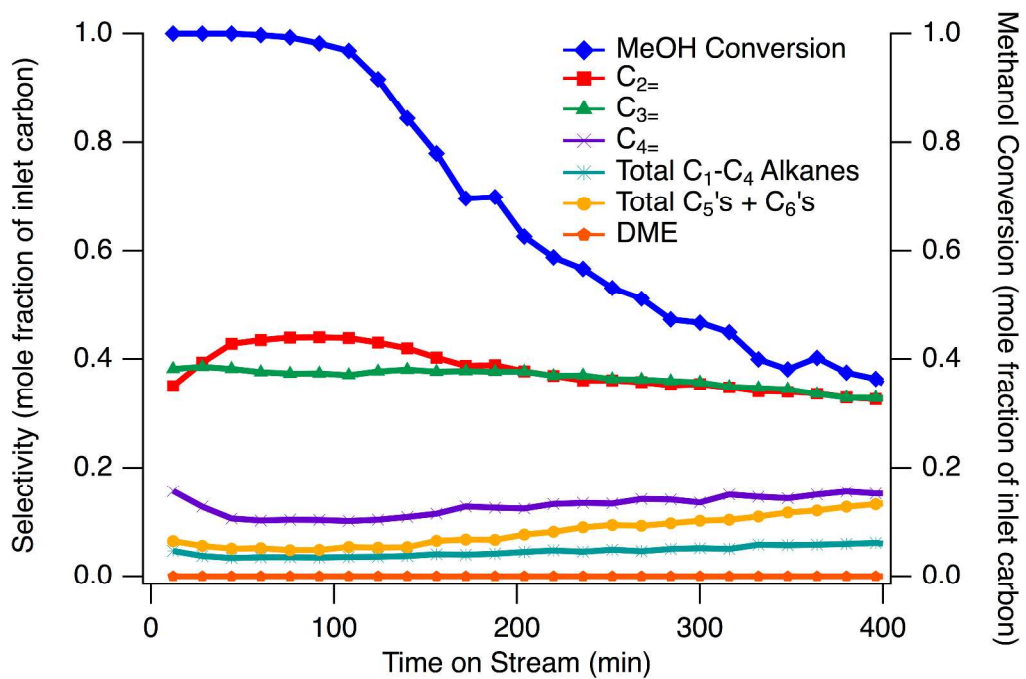


Figure S6. MTO Data for Steamed H-SSZ-13.

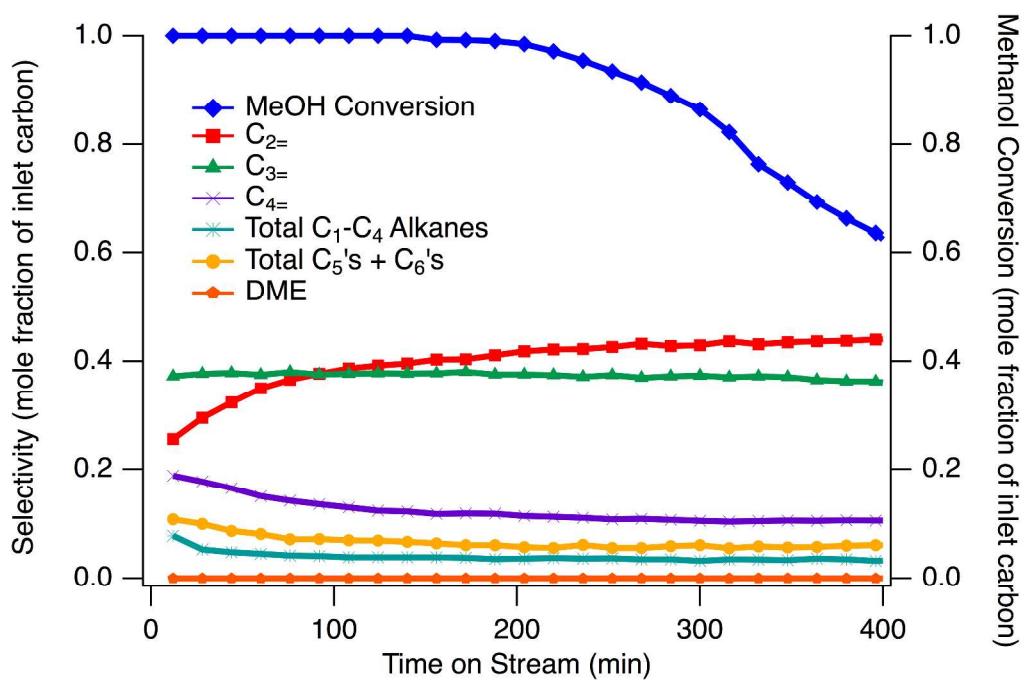


Figure S7. MTO Data for Steamed Cu-SSZ-13.

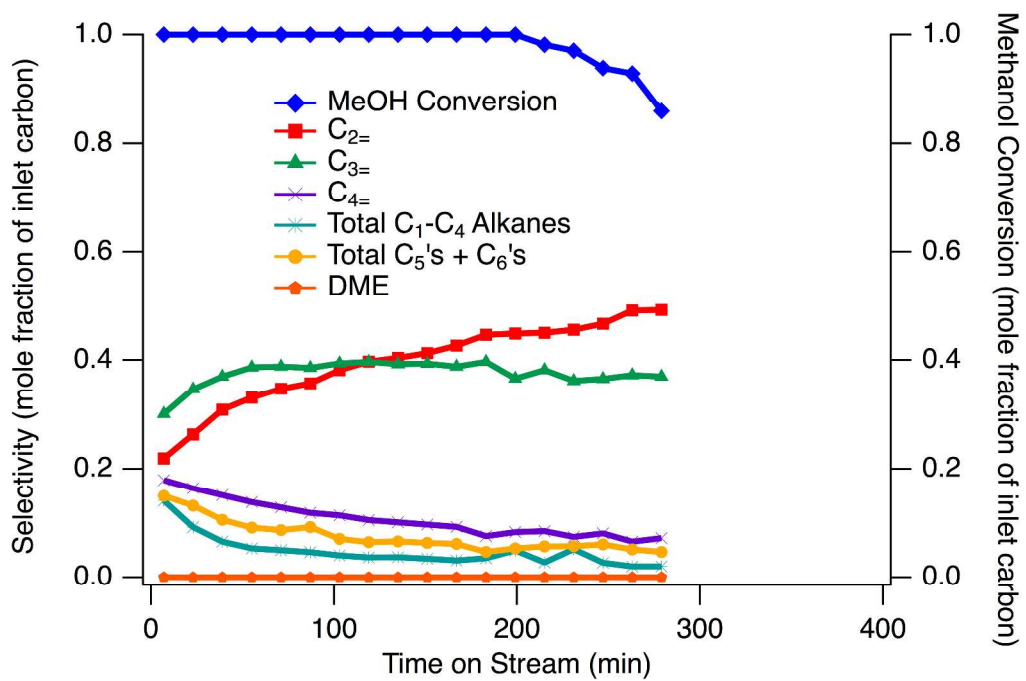


Figure S8. MTO Data for Steamed, Back-exchanged Cu-SSZ-13