

Supplementary Information

High surface area zincosilicates as efficient catalysts for the synthesis of ethyl lactate: an in-depth structural investigation

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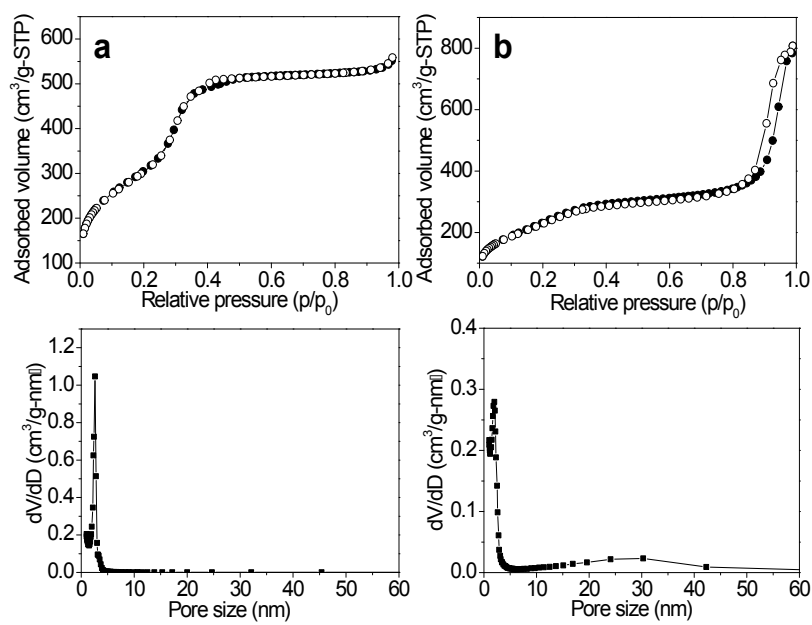


Fig. S1. Nitrogen adsorption-desorption isotherms (top) and pore size distribution (bottom) of XS-Zn-MCM-41-C (a) and XS-Zn-MCM-D (b).

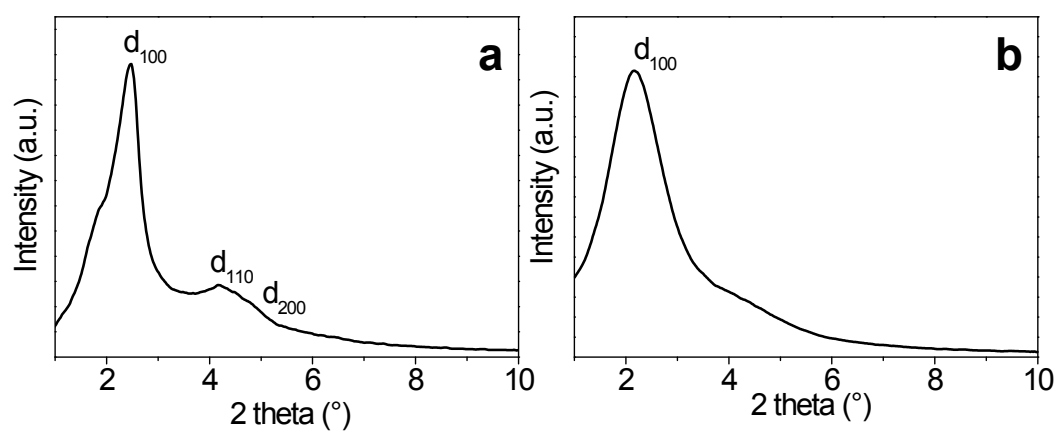


Fig. S2. X-ray diffraction pattern of XS-Zn-MCM-41-C (a) and -D (b) in the small angle range ($2\theta = 1-10^\circ$).

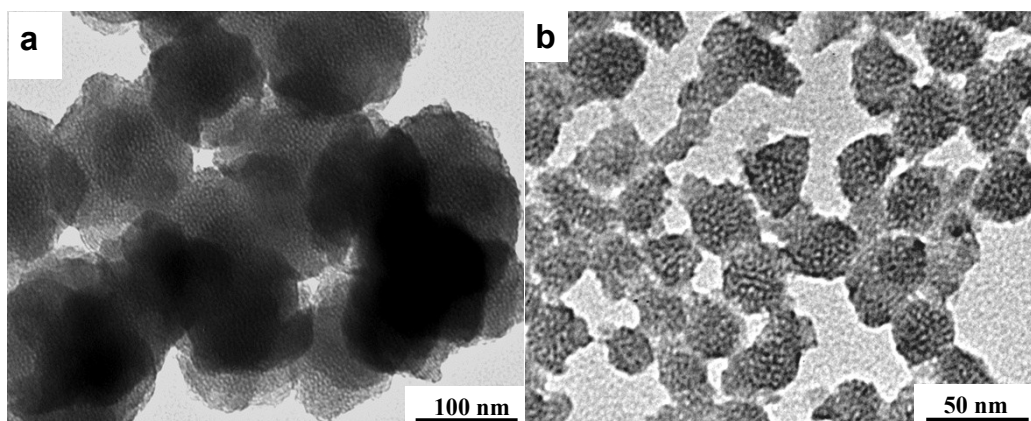


Fig. S3. TEM pictures of XS-Zn-MCM-41-C (a) and XS-Zn-MCM-41-D (b).

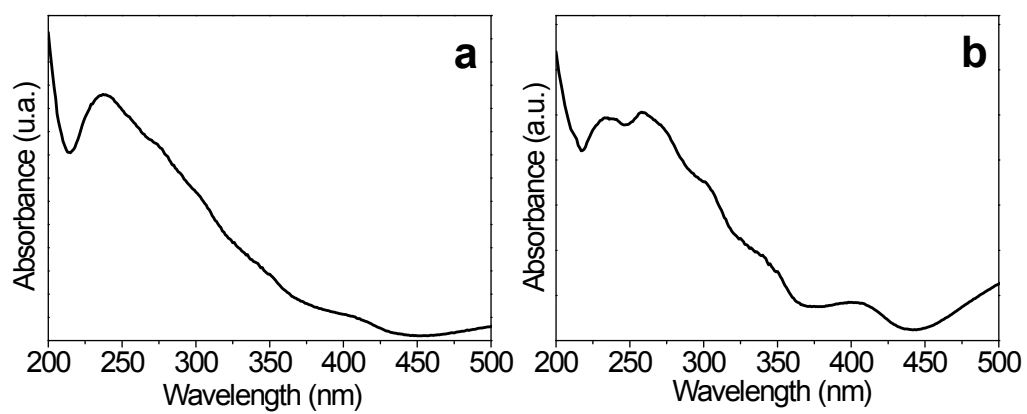


Fig. S4. Diffuse reflectance UV-Vis spectra of XS-Zn-MCM-41-C (a) and XS-Zn-MCM-41-D (b).

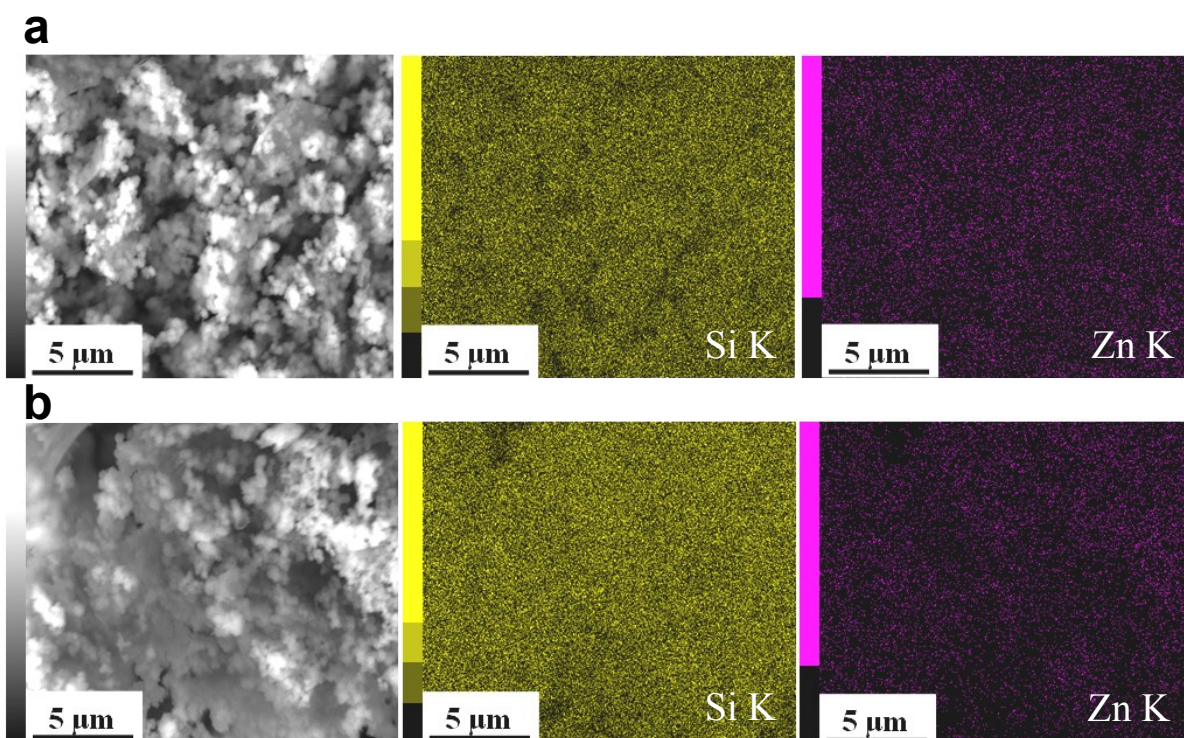


Fig. S5. Energy dispersive X-ray spectroscopy mapping of XS-Zn-MCM-41-A (a) and -B (b).

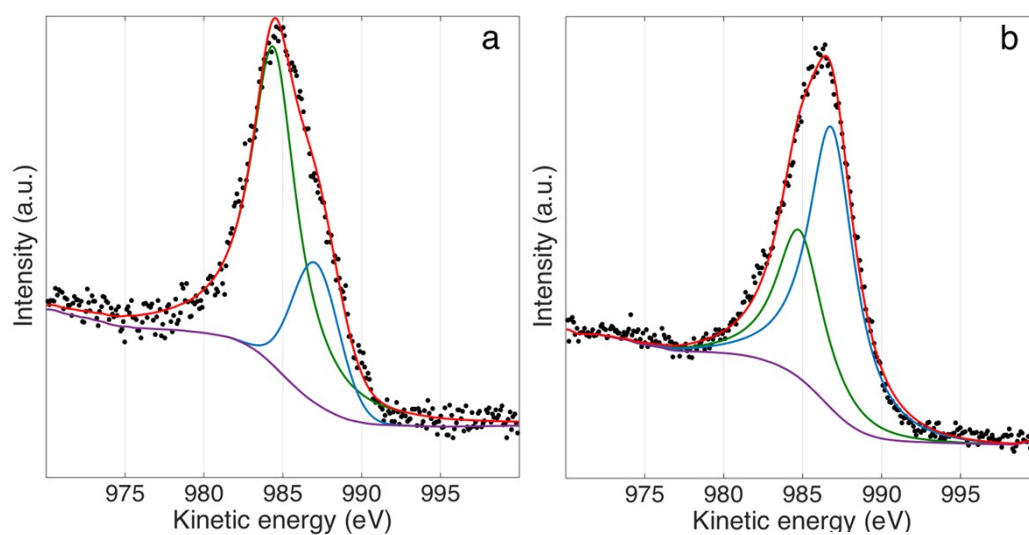


Fig. S6. Auger electron spectroscopy of Zn ($L_3M_{45}M_{45}$) spectra of XS-Zn-MCM-41-C (a) and -D (b).

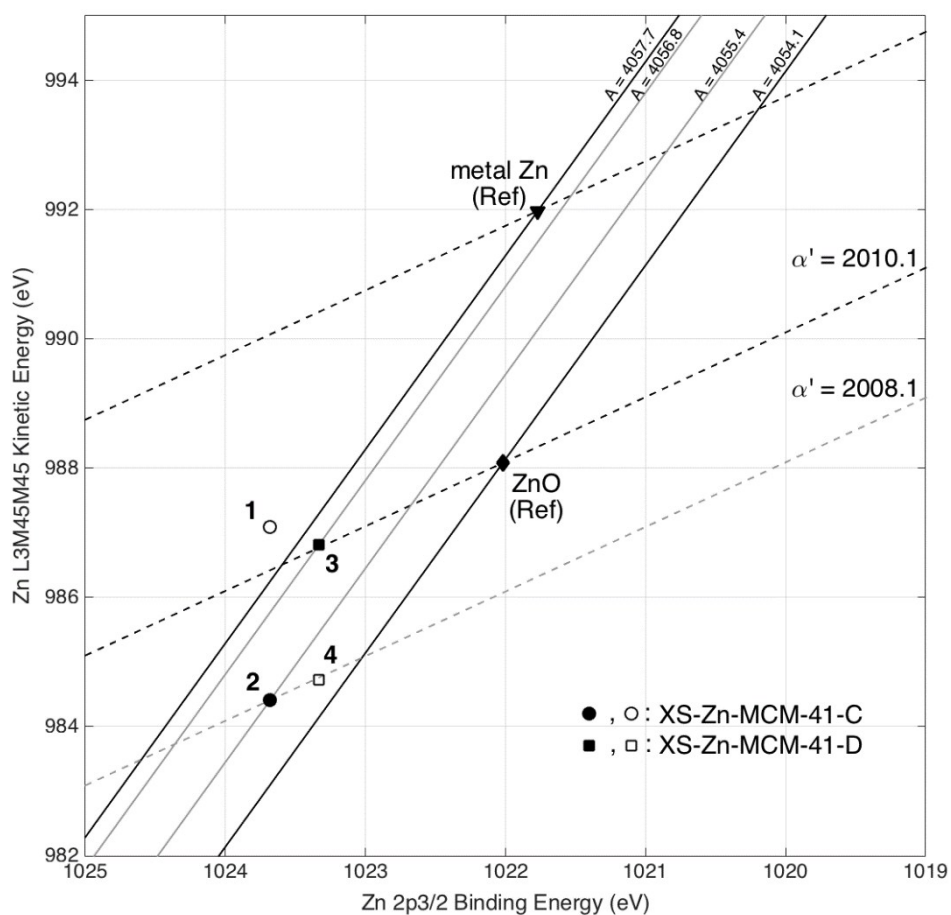


Fig. S7. Wagner plot (Zn $L_3M_{45}M_{45}$ Auger vs. XPS $Zn2p_{3/2}$) of XS-Zn-MCM-41-C and -D. Filled circle/square represents the most intense component and empty circle/square the smallest one.

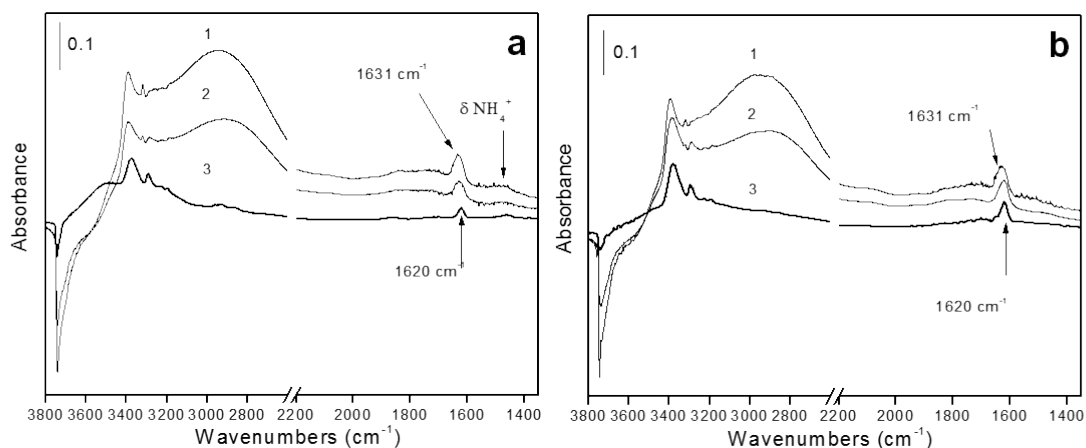


Fig. S8. IR difference spectra concerning NH_3 adsorption at r.t. on XS-Zn-MCM-41-C (a) and on XS-Zn-MCM-41-D (b) outgassed 673 K. Curve 1-2 are related to spectra obtained, respectively, under *ca.* 20 mbar and *ca.* 5 mbar NH_3 equilibrium pressures. Curve 3: prolonged outgassing at RT after ammonia dosages. Spectra show breaks in the 2500-2000 cm^{-1} range.