

Supplementary Materials: Surface Modification of a MOF-based Catalyst with Lewis Metal Salts for Improved Catalytic Activity in the Fixation of CO₂ into Polymers

Sudakar Padmanaban and Sungho Yoon

Supplementary Data

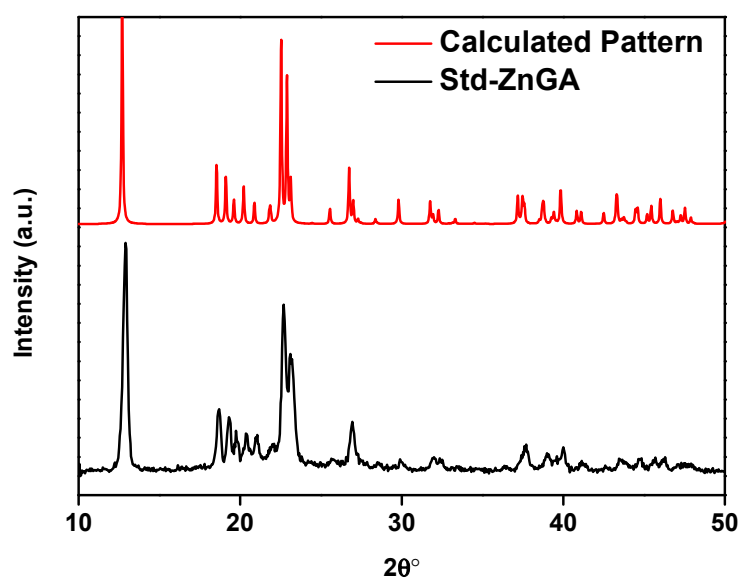


Figure S1. PXRD pattern of std-ZnGA and PXRD pattern calculated from the crystal structure of ZnGA via Mercury 3.7

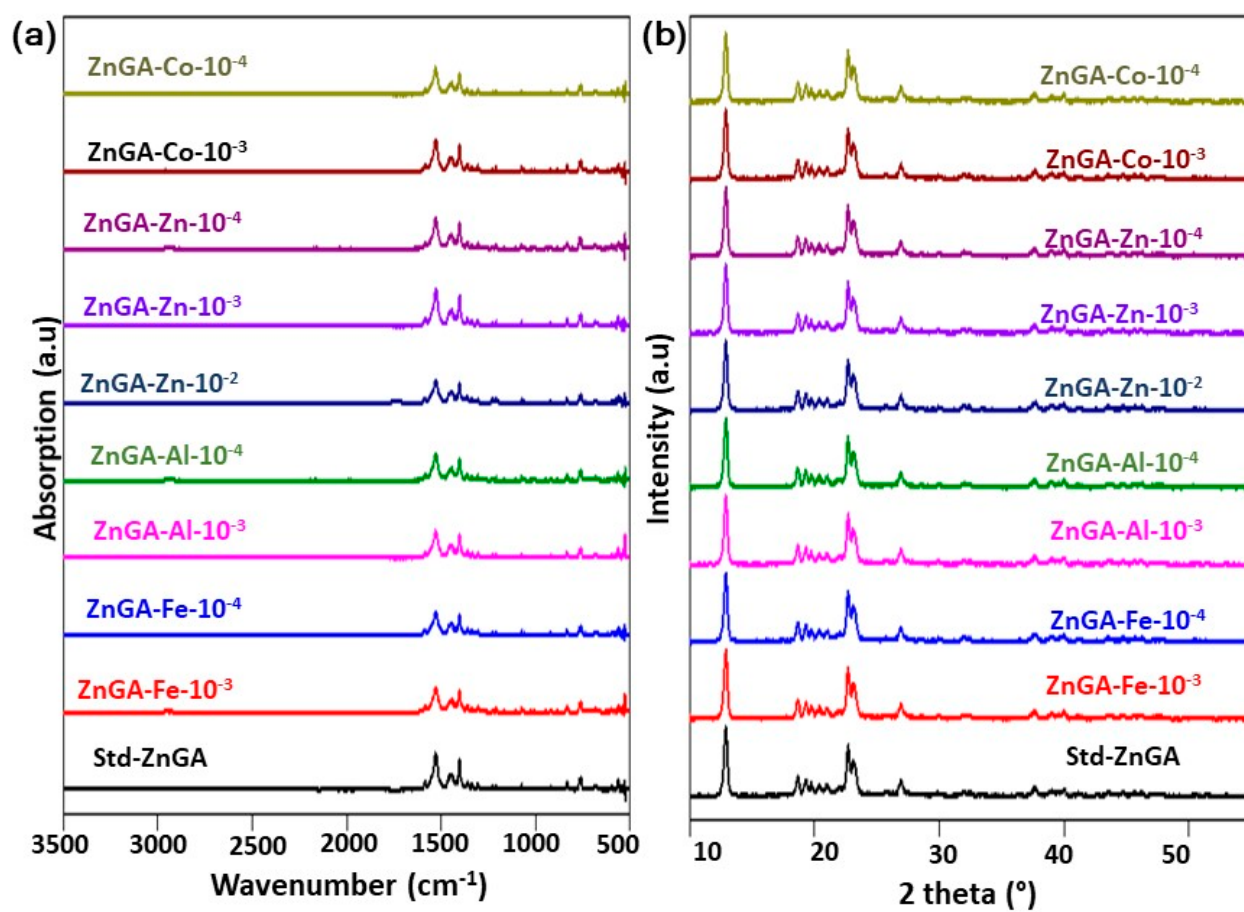


Figure S2(a) FT-IR spectra of std-ZnGA and ZnGA-M catalysts, (b) PXRD patterns of std-ZnGA and ZnGA-M catalysts.

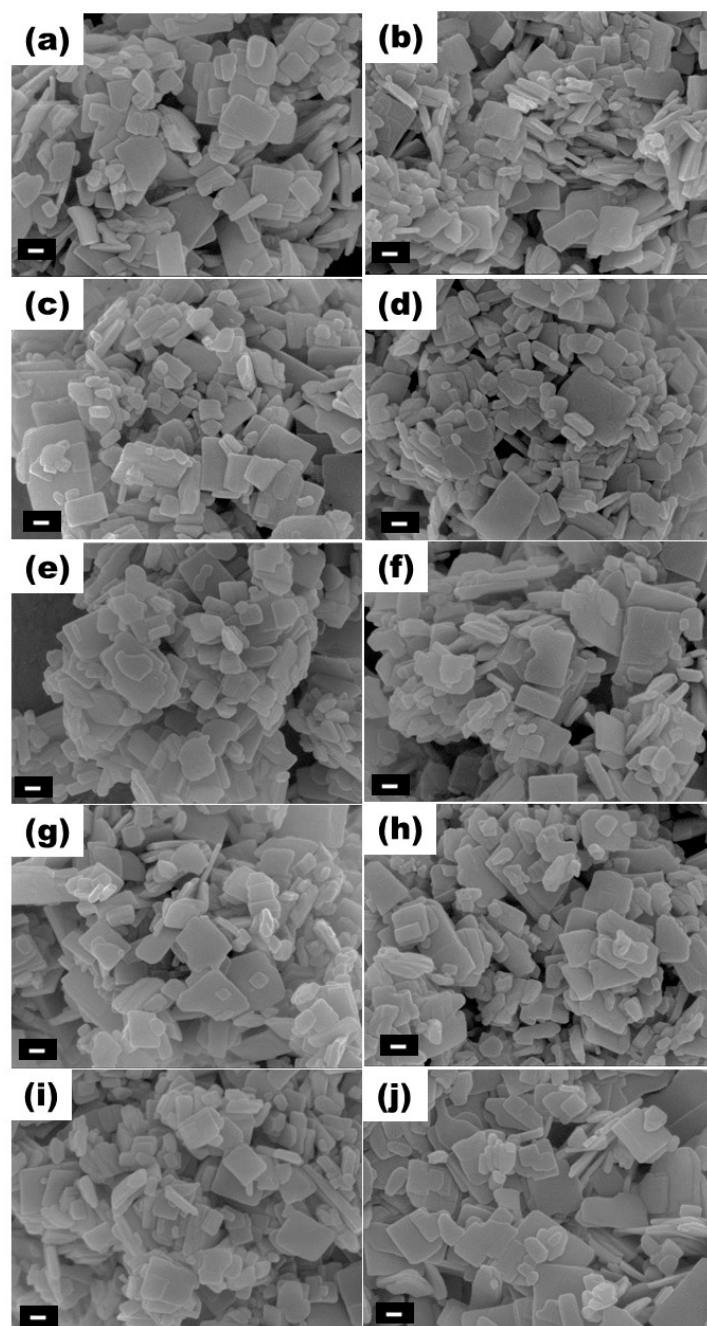


Figure S3. SEM images of std-ZnGA and ZnGA-MCl_n. (a) std-ZnGA, (b) ZnGA-Cr-10⁻³, (c) ZnGA-Cr-10⁻⁴ (d) ZnGA-Zn-10⁻², (e) ZnGA-Zn-10⁻³ (f) std-ZnGA-Zn-10⁻⁴, (g) ZnGA-Al-10⁻³, (h) ZnGA-Al-10⁻⁴, (i) ZnGA-Co-10⁻³, (j) ZnGA-Co-10⁻⁴, (k) ZnGA-Fe-10⁻³, and (l) ZnGA-Fe-10⁻⁴ (Scale bar = 100 nm).

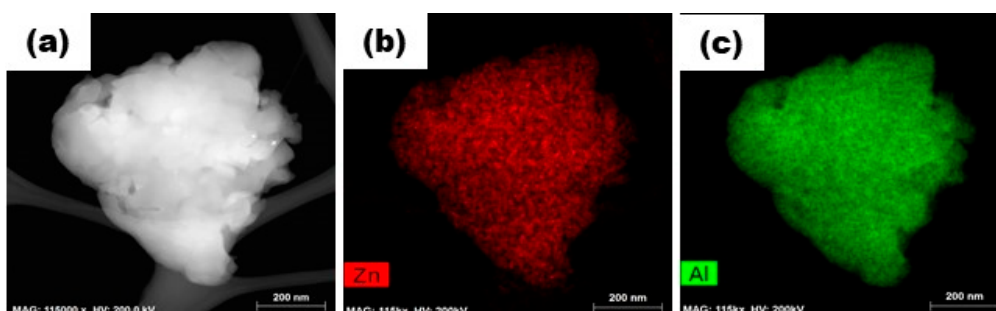


Figure S4. STEM image and EDS mapping. (a) STEM image of ZnGA-Al-1; STEM-EDS mapping of (b) Zn (red) and (c) Al (green) elements in ZnGA-Al-1; (Scale bar: = 200 nm).

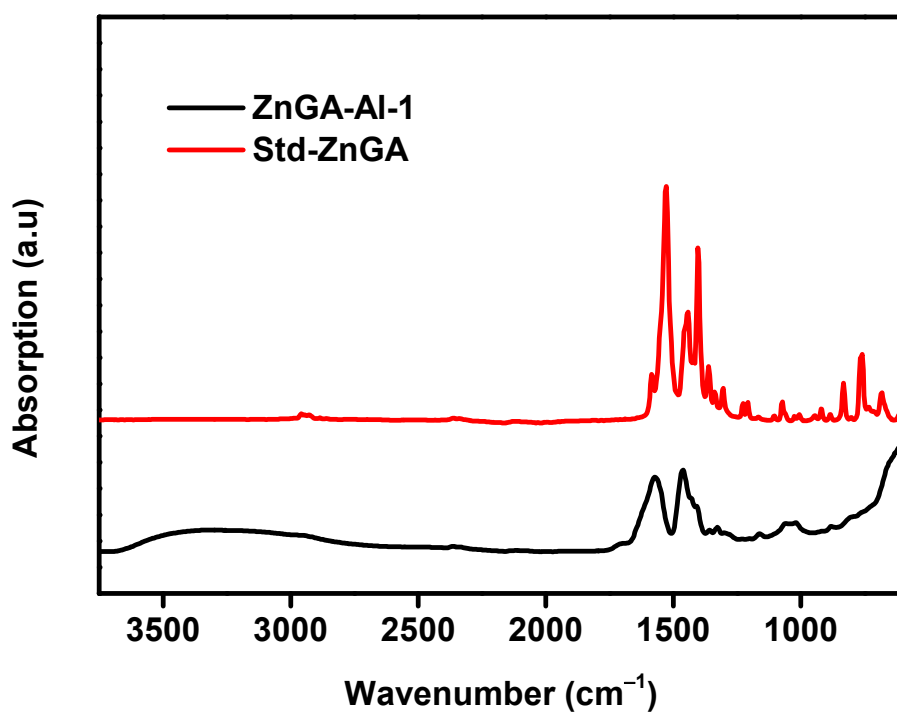


Figure S5. FT-IR spectra of std-ZnGA and ZnGA-Al-1.

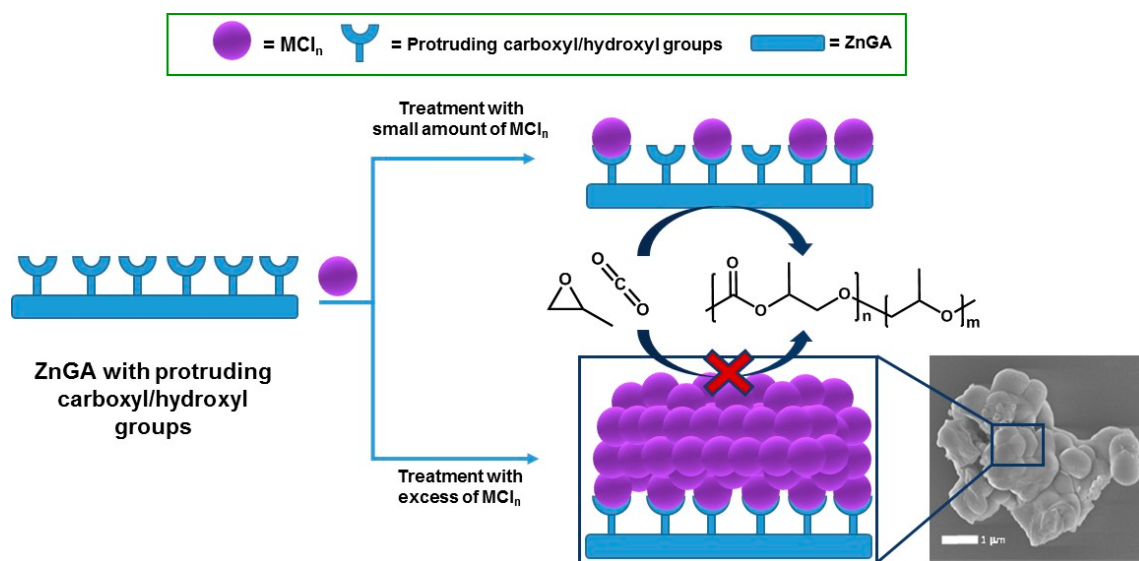


Figure S6. Expected coordination modes of MCl_n on the std-ZnGA surface.

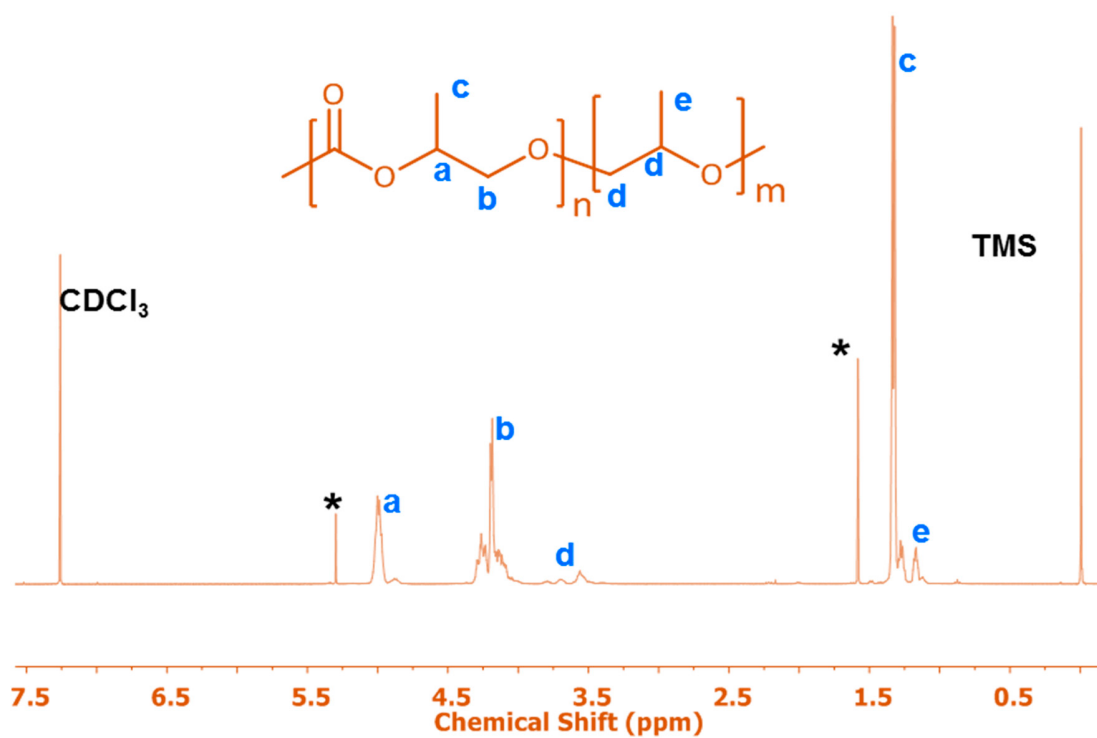


Figure S7. ^1H NMR spectrum of PPC from entry 3 in Table 1.

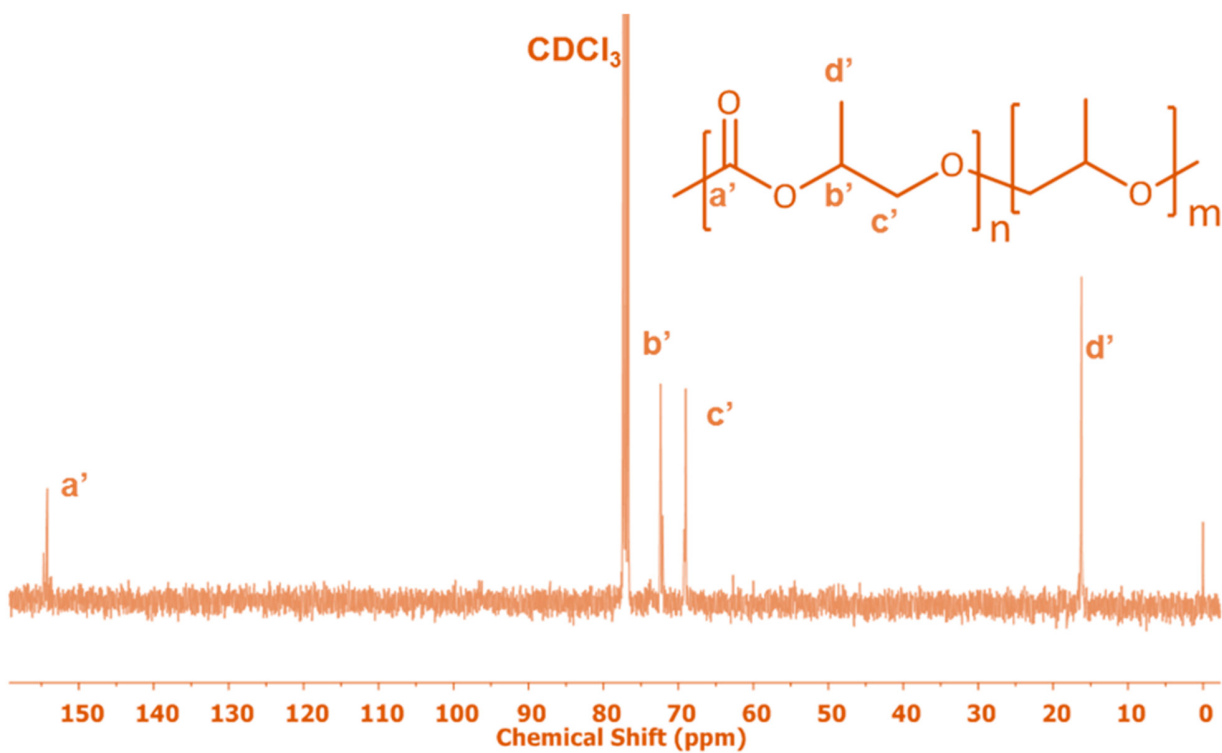


Figure S8. ^{13}C NMR spectrum of PPC from entry 3 in Table 1.

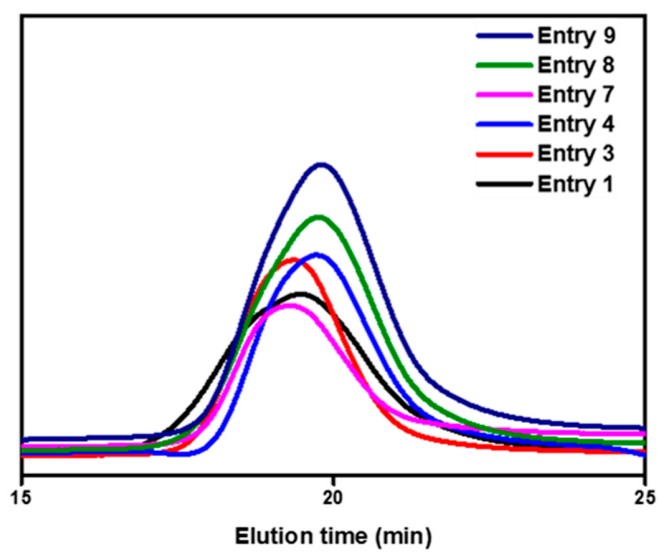


Figure S9. GPC elugrams for some selected polymers from Table 1.

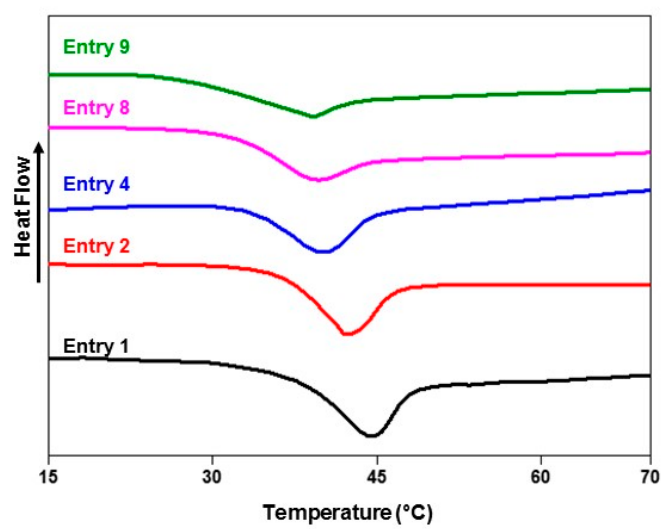


Figure S10. DSC curves of selected polymers from Table 1.