

<Electronic Supplementary Information>

Unusual porous crystals via catenation of 1D ladders: unprecedented mixture effects on adsorption of xylene isomers in SCSC mode

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Electronic Supplementary Information (ESI) available: Experimental details and crystal structure determination. TGA curves of [(2dioxane)@Ag(ClO₄)L] and [(1.5o-X)@Ag(ClO₄)L]; ¹H NMR spectra and IR spectra of Ligand, [(2dioxane)@Ag(ClO₄)L], [(1.5p-X)@Ag(ClO₄)L], [(1.5m-X)@Ag(ClO₄)L] and [(1.5o-X)@Ag(ClO₄)L]. CCDC reference numbers 2017538 and 2017539.

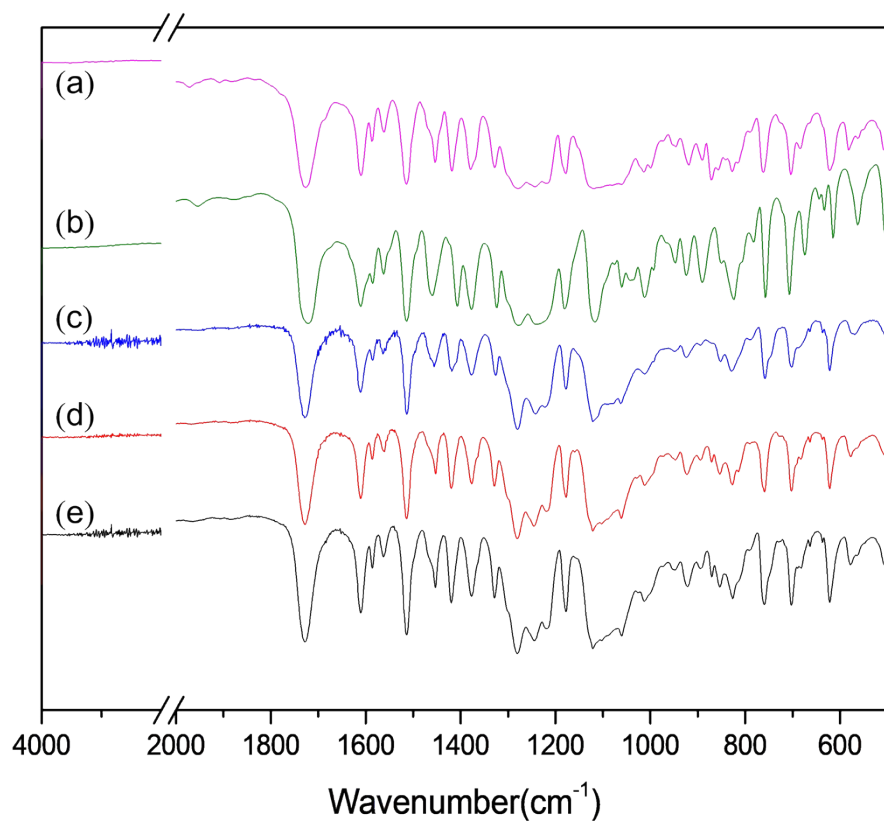


Fig. S1 IR spectra of L (a), [(2dioxane)@Ag(ClO₄)L] (b), [(1.5*p*-X)@Ag(ClO₄)L] (c), [(1.5*m*-X)@Ag(ClO₄)L] (d), [(1.5*o*-X)@Ag(ClO₄)L] (e).

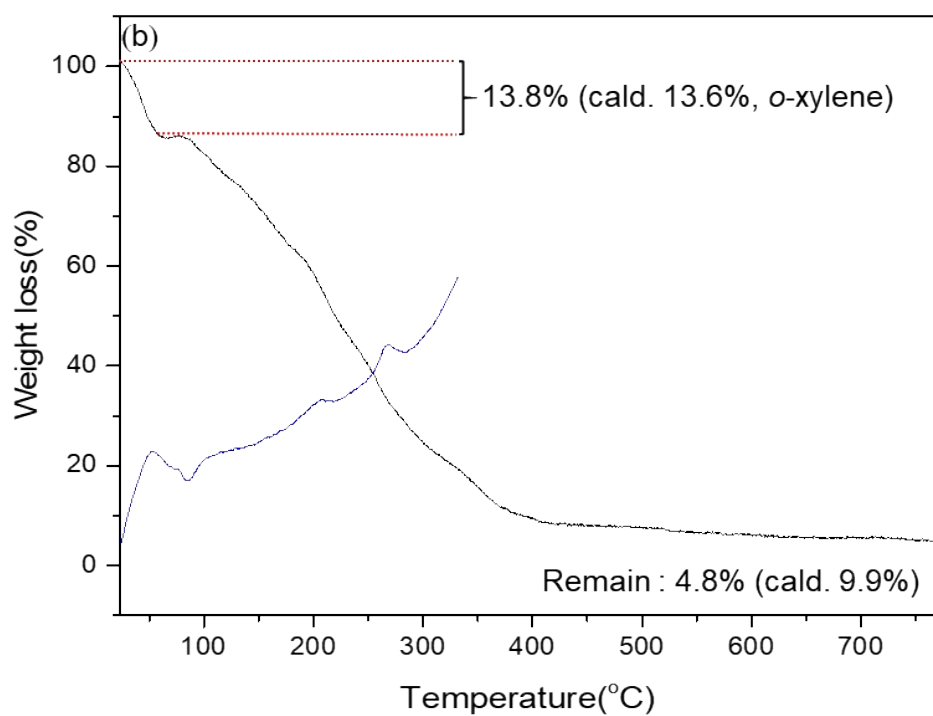
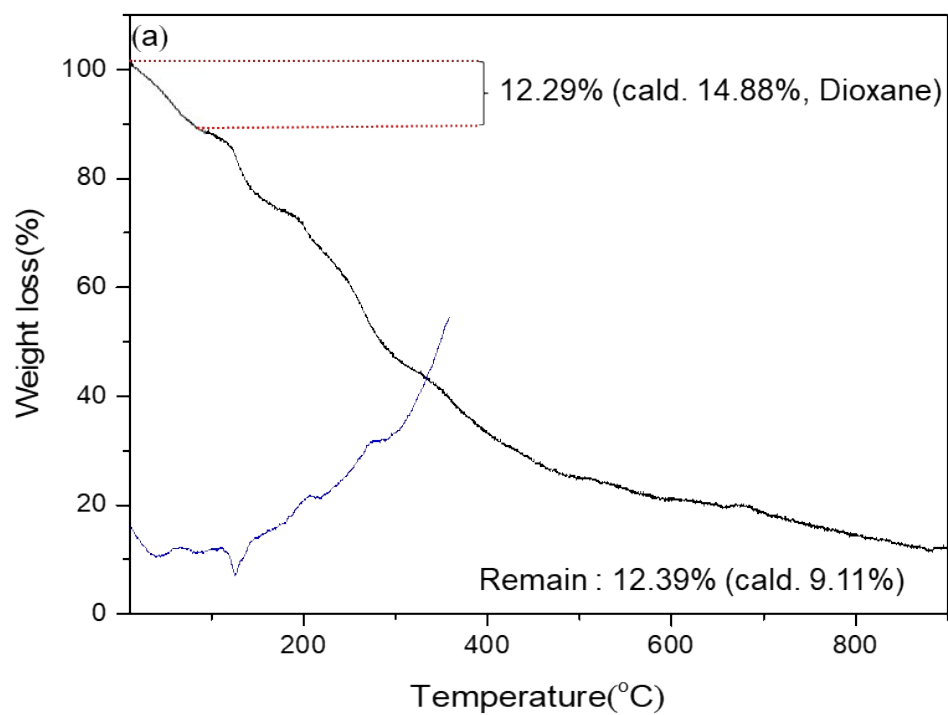


Fig. S2 TGA and DSC overlays of [(2dioxane)@Ag(ClO₄)L] (a) and [(1.5o-X)@Ag(ClO₄)L] (b).

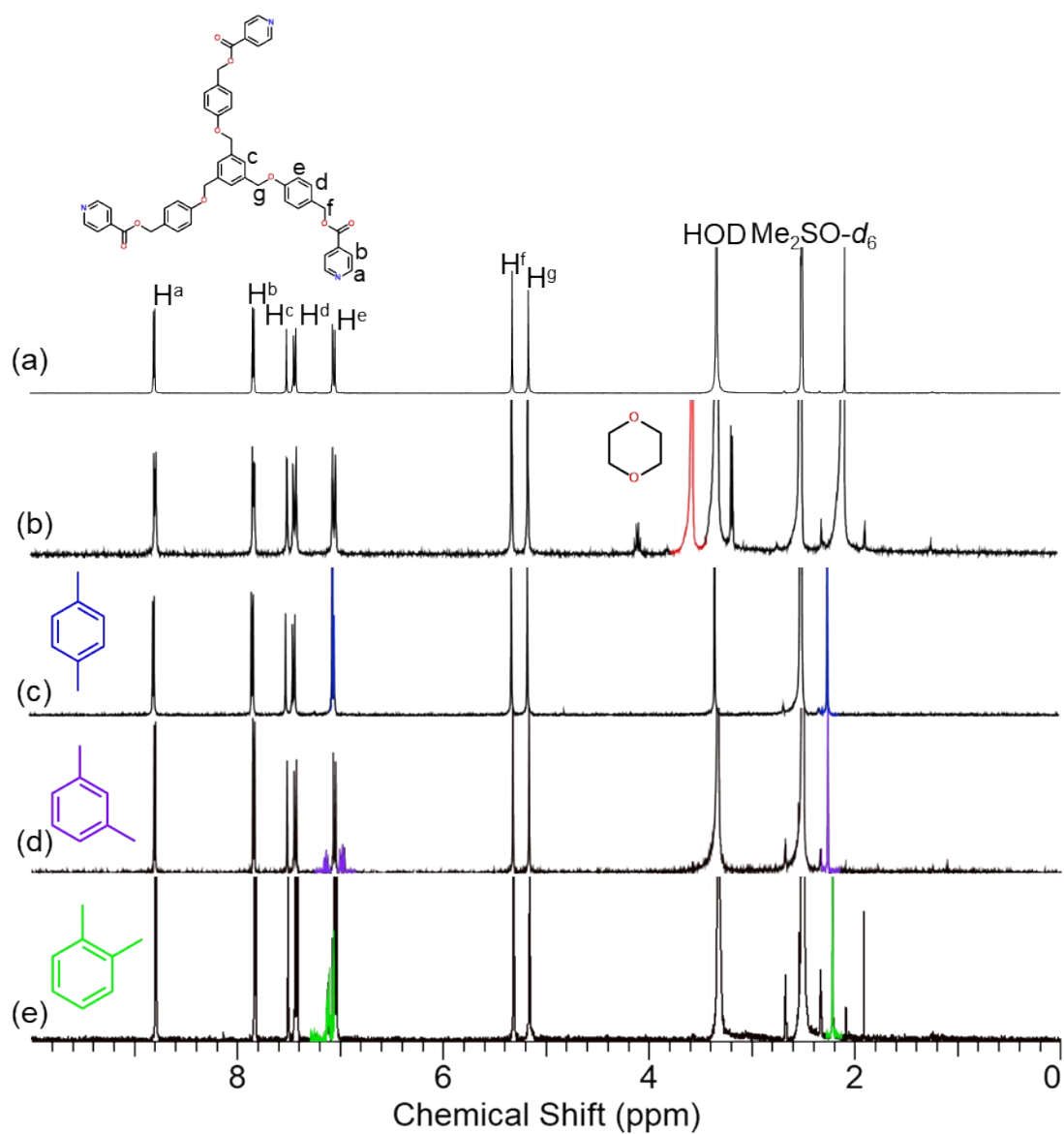


Fig. S3 ^1H NMR spectra of L (a), $[(2\text{dioxane})@Ag(\text{ClO}_4)_2L]$ (b), $[(1.5p\text{-X})@Ag(\text{ClO}_4)_2L]$ (c), $[(1.5m\text{-X})@Ag(\text{ClO}_4)_2L]$ (d), and $[(1.5o\text{-X})@Ag(\text{ClO}_4)_2L]$ (e).

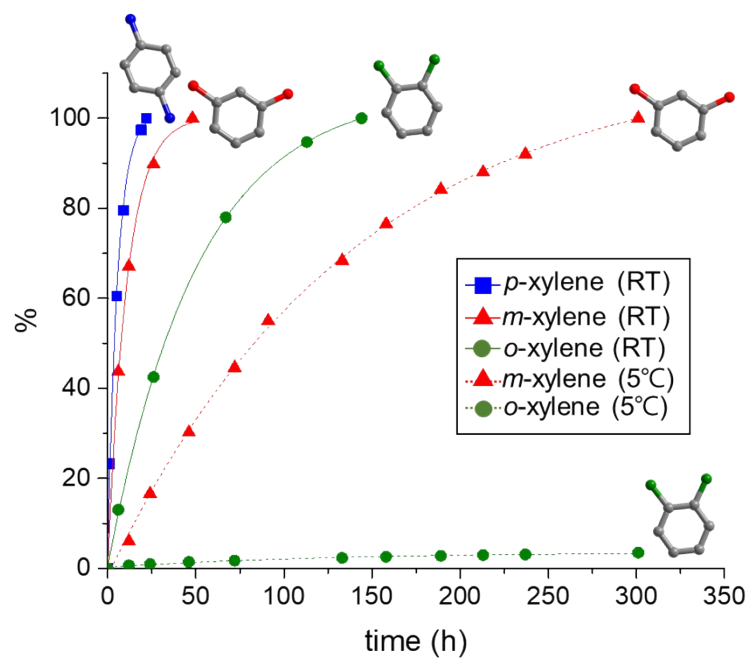


Fig. S4 Adsorption of *p*-X, *m*-X, and *o*-X at room temperature and at 5 °C.

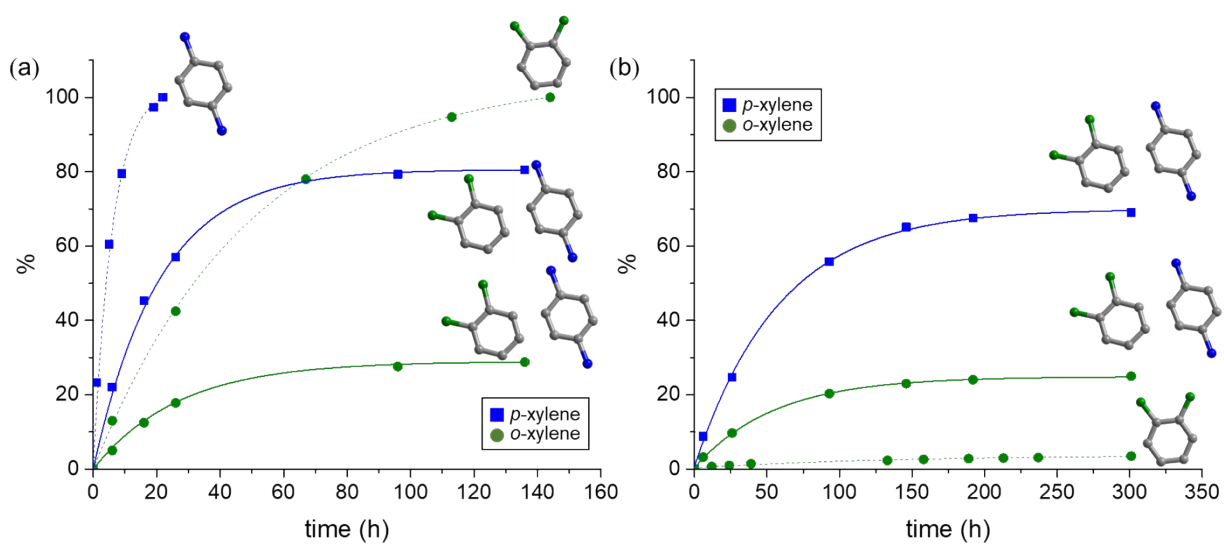


Fig. S5 Exchange rate in the 1 : 1 mixture of *p*-X and *o*-X at room temperature (a) and 5 °C (b).

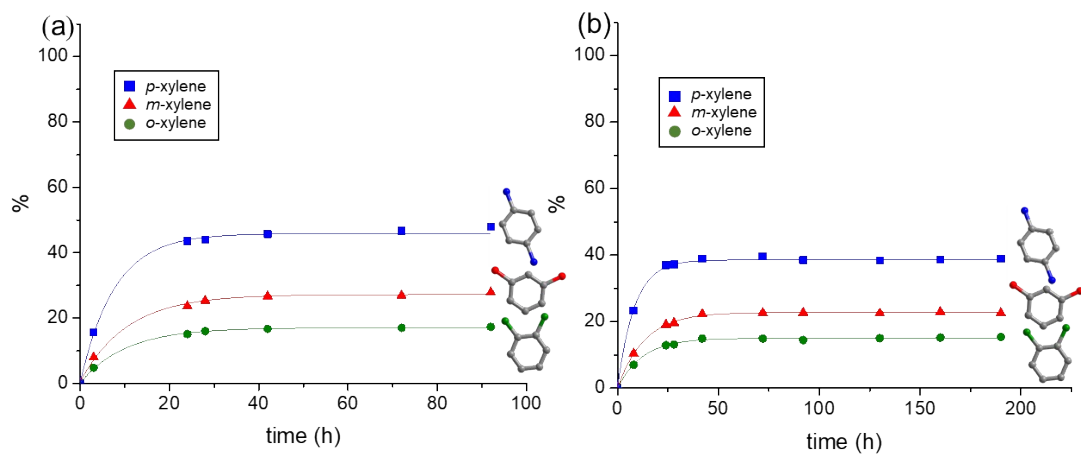


Fig. S6 Exchange rate in the 1 : 1 : 1 mixture of *o*-X : *m*-X : *p*-X at room temperature (a) and at 5 °C (b).