Supporting Information

Sn-modified Zr-UiO-66 metal-organic frameworks for dihydroxyacetone conversion into lactic acid

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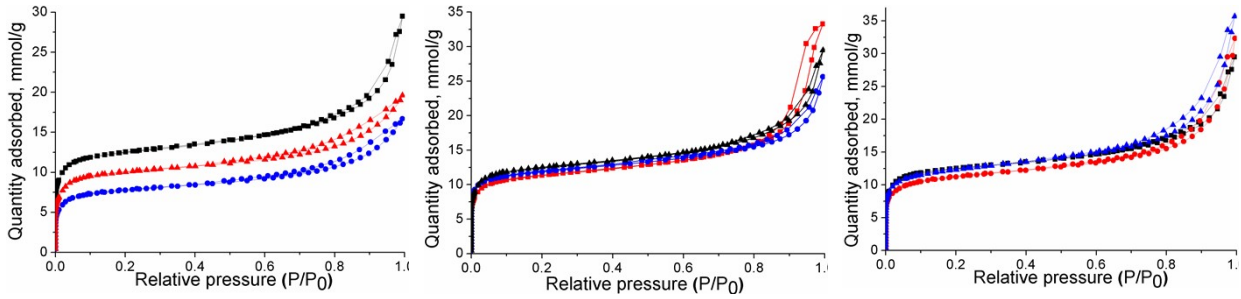

(**a**) Sn(II)-3.6-2/1 (red), Sn(II)-3.6-1/1 (blue), Zr-UiO-66 (black) (**b**) Sn(II)-1.0-2/1 (red), Sn(II)-1.0-1/1 (blue), Zr-UiO-66 (black) **(c)** Sn(IV)-1.0-2/1 (red), Sn(IV)-1.0-1/1 (blue), Zr-UiO-66 (black)

Figure S1. Low-temperature N_2 adsorption isotherms.

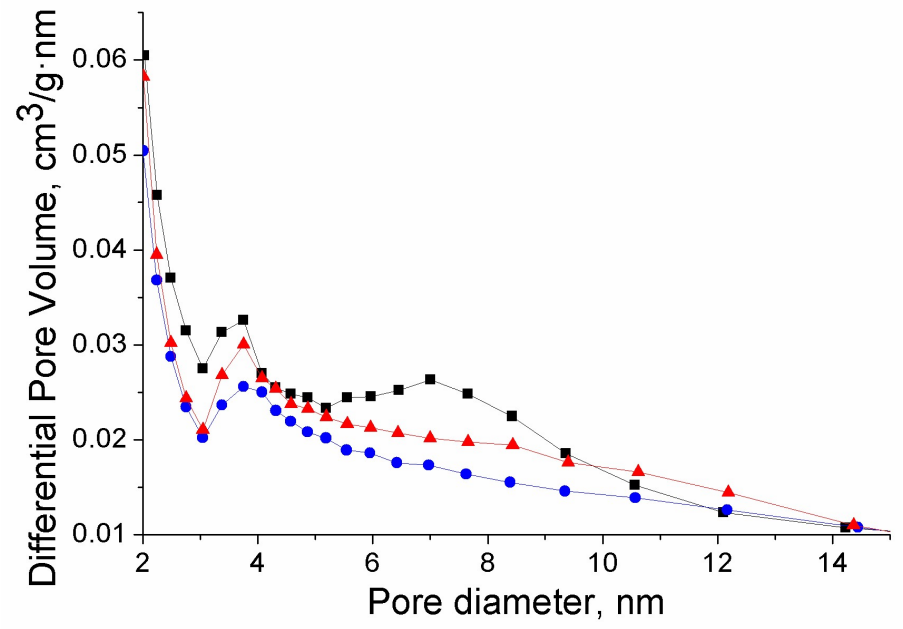

Figure S2. Pore size distribution curves calculated by BJH desorption method for Sn(II)-3.6-2/1 (red), Sn(II)-3.6-1/1 (blue), and Zr-UiO-66 (black).

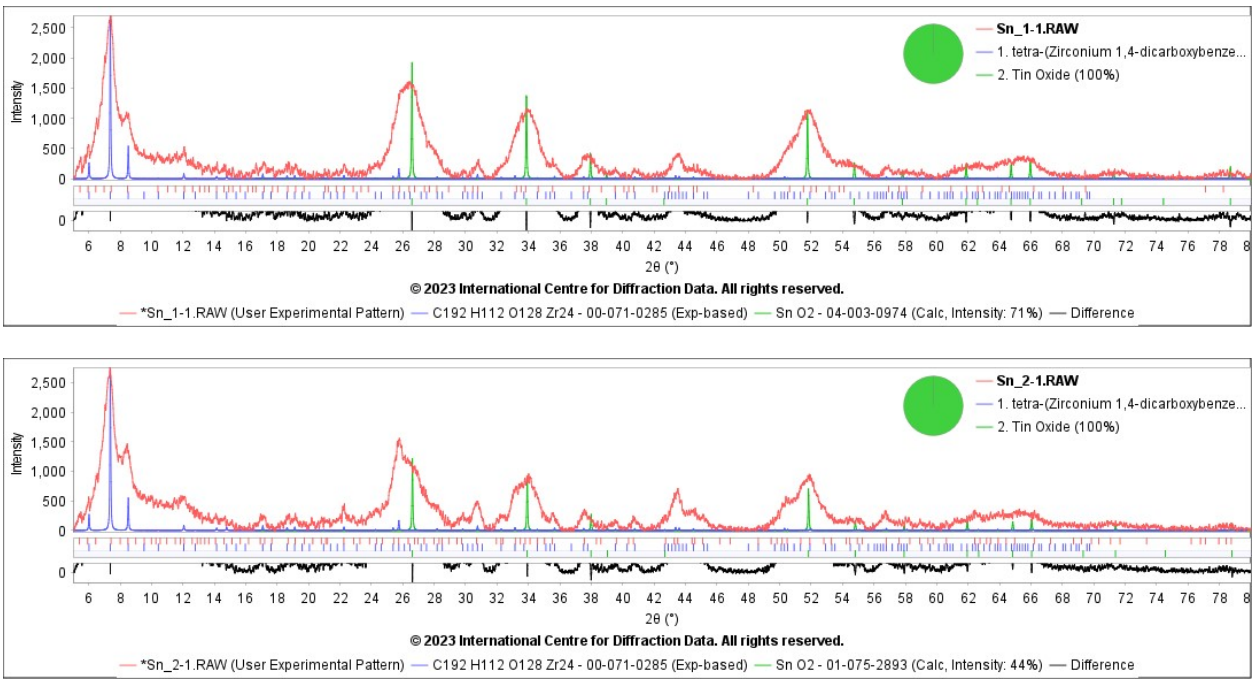

Figure S3. Modeling of phase composition for Sn(II)-3.6-1/1 (top) and Sn(II)-3.6-2/1 (bottom) in PDF4+ package.

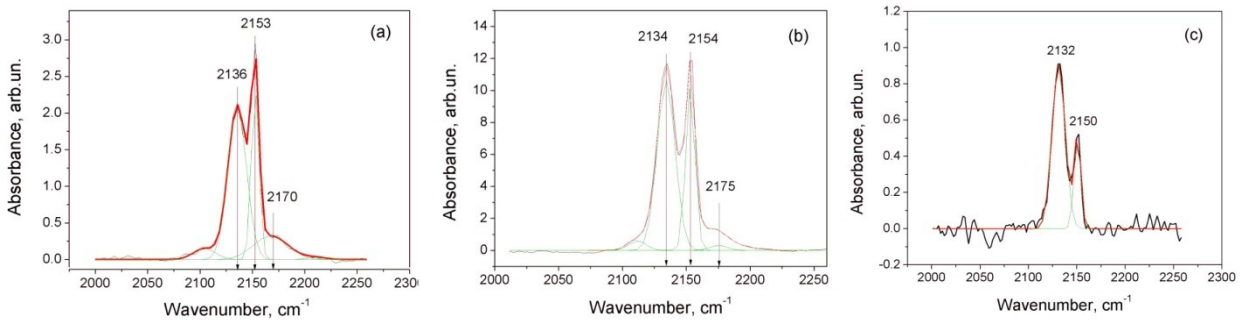

Figure S4. FTIR spectra of CO adsorbed at 77 K on Sn(II)-3.6-1/1 (a), Sn(II)-1.0-2/1 (b) and Sn(IV)-1.0-2/1 (c).

Table S1. Estimated formulas of MOFs of different series calculated from TGA and XRD data.

Sample	Formula
Sn(II)-3.6-1/1	$[Zr_3Sn_3O_4(OH)_4](C_6H_4(COO)_2)_{3.3}Cl_{0.6}(OH)_{2.1}$
Sn(II)-1.0-2/1	$[Zr_{5.8}Sn_{0.2}O_4(OH)_4](C_6H_4(COO)_2)_{7.3}Cl_{0.2}$
Sn(IV)-1.0-2/1	$[Zr_{5.7}Sn_{0.3}O_4(OH)_4](C_6H_4(COO)_2)_{7.9}Cl_{0.4}$