

Supplementary Information

Ultrasound assisted synthesis of a new Zn(II) metal-organic framework with nano-plate morphology using non-linear dicarboxylate and linear N-donor ligands

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Table S1. Selected bond lengths /Å and angles /° for {[Zn₂(oba)₂(4-bpdb)]·2DMF}_n.

Zn1-O10#1	1.949(5)	O10#1-Zn1-O7	139.5(2)
Zn1-O7	1.948(5)	O10#1-Zn1-O2	107.2(2)
Zn1-O2	2.018(4)	O7-Zn1-O2	102.4(2)
Zn1-N4#2	2.072(5)	O10#1-Zn1-N4#2	103.84(19)
Zn1-O9 ⁱ	2.479(5)	O7-Zn1-N4#2	100.32(19)
Zn2-O1	1.934(5)	O2-Zn1-N4#2	95.15(19)
Zn2-O5#3	1.948(5)	O10#1-Zn1-O9#1	58.41(19)
Zn2-O6	1.985(5)	O7-Zn1-O9#1 ⁱ	89.69(19)
Zn2-N1	2.000(5)	O2-Zn1-O9#1	165.50(19)
		N4#2-Zn1-O9#1	90.53(18)
		O1-Zn2-O5#3	126.9(2)
		O1-Zn2-O6	102.4(2)
		O5#3-Zn2-O6	106.50(19)
		O1-Zn2-N1	103.2(2)
		O5#3-Zn2-N1	112.2(2)
		O6-Zn2-N1	102.8(2)

#1 -x, -0.5+y, 0.5-z; #2 -1+x, y, -1+z; #3 1-x, -0.5+y, 0.5-z; #4 1-x, 0.5+y, 0.5-z; #5 -x, 0.5+y, 0.5-z; #6 1+x, y, 1+z.

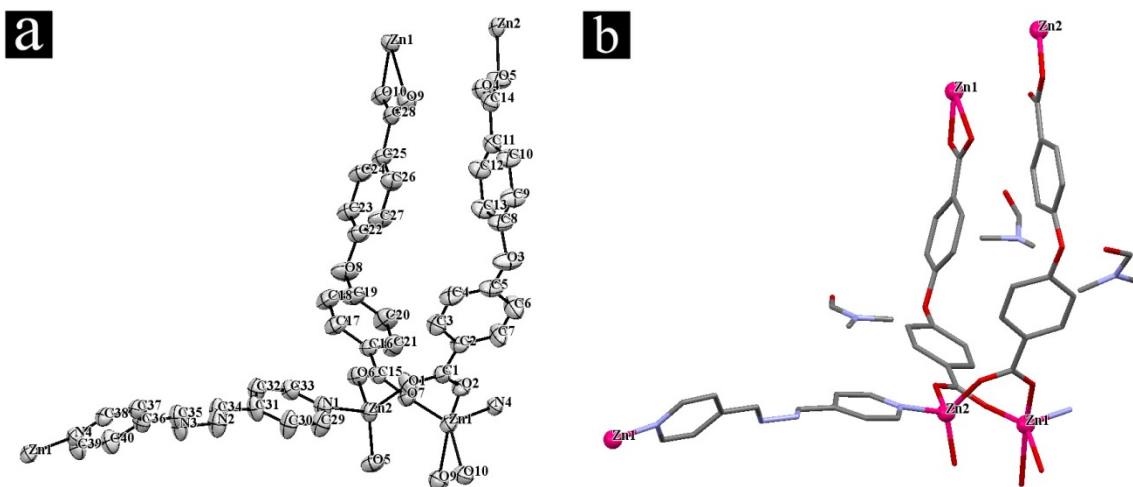


Fig. S1. (a) Independent part of TMU-4 unit cell (DMF molecules are not depicted) given in thermal ellipsoids ($p = 50\%$). (b) Independent part of TMU-4 unit cell with DMF guest molecules.

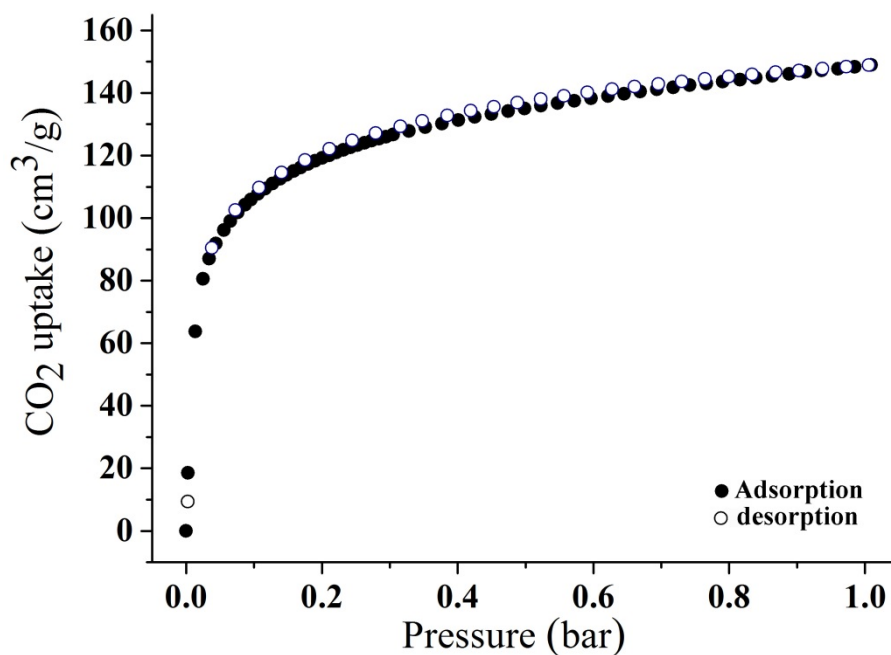


Fig S2. Type I CO₂ isotherms at 195 K and 1 bar collected on TMU-4.

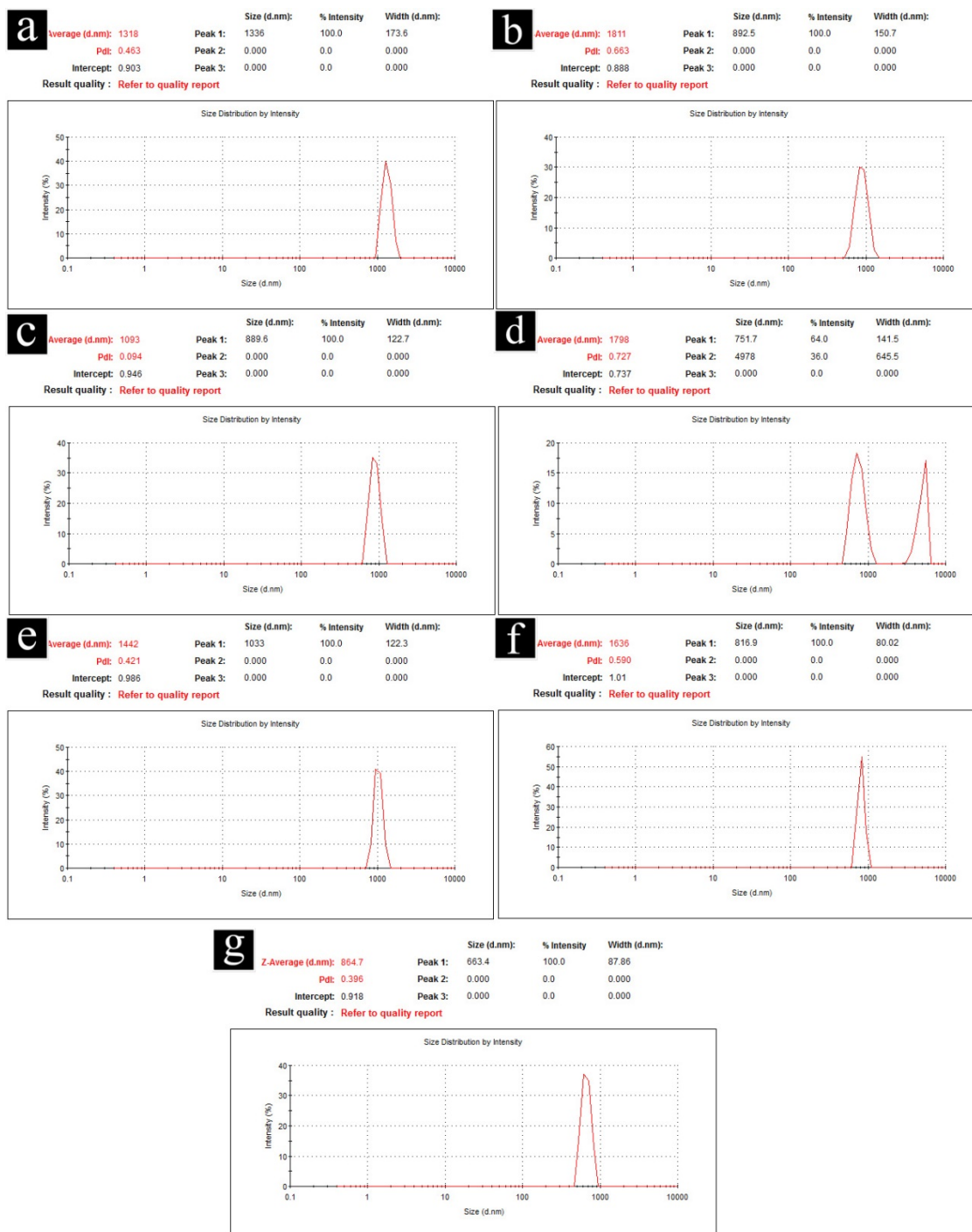


Fig. S3. DLS measurements of different colloids of TMU-4 plates in DMF with different average diameters (a-g) samples A-G.

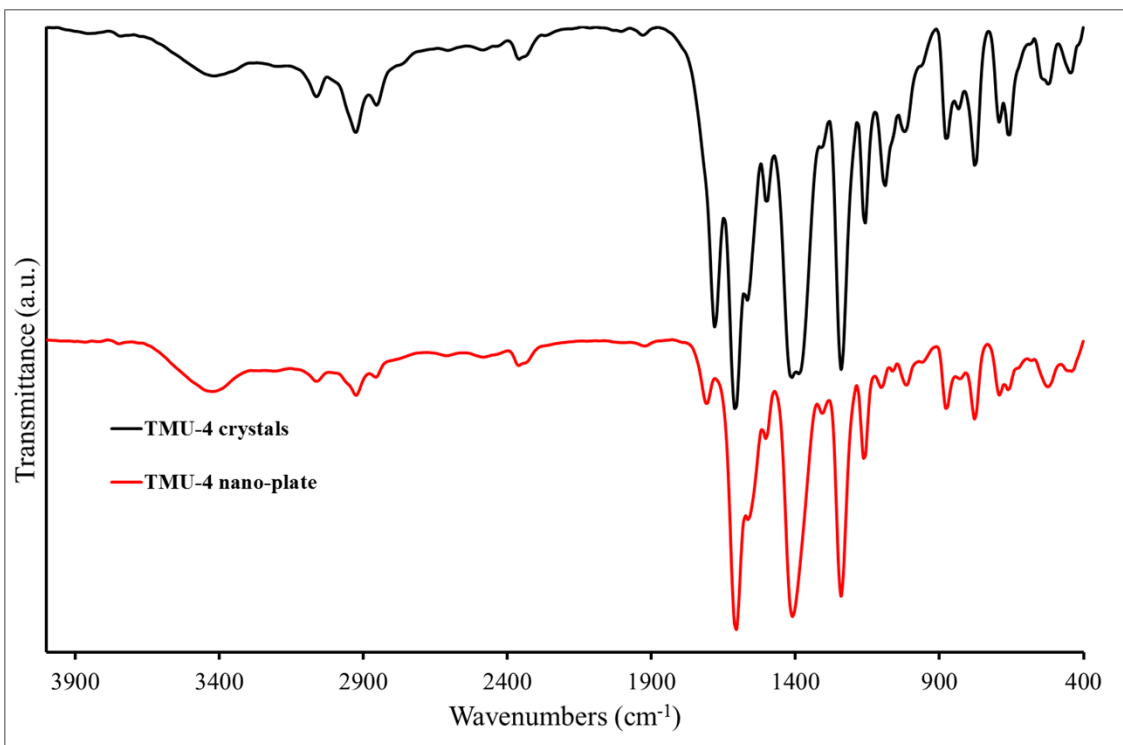


Fig. S4. IR spectra of crystal and nano-plats of TMU-4 produced by conventional heating and sonochemical method (sample G), respectively.

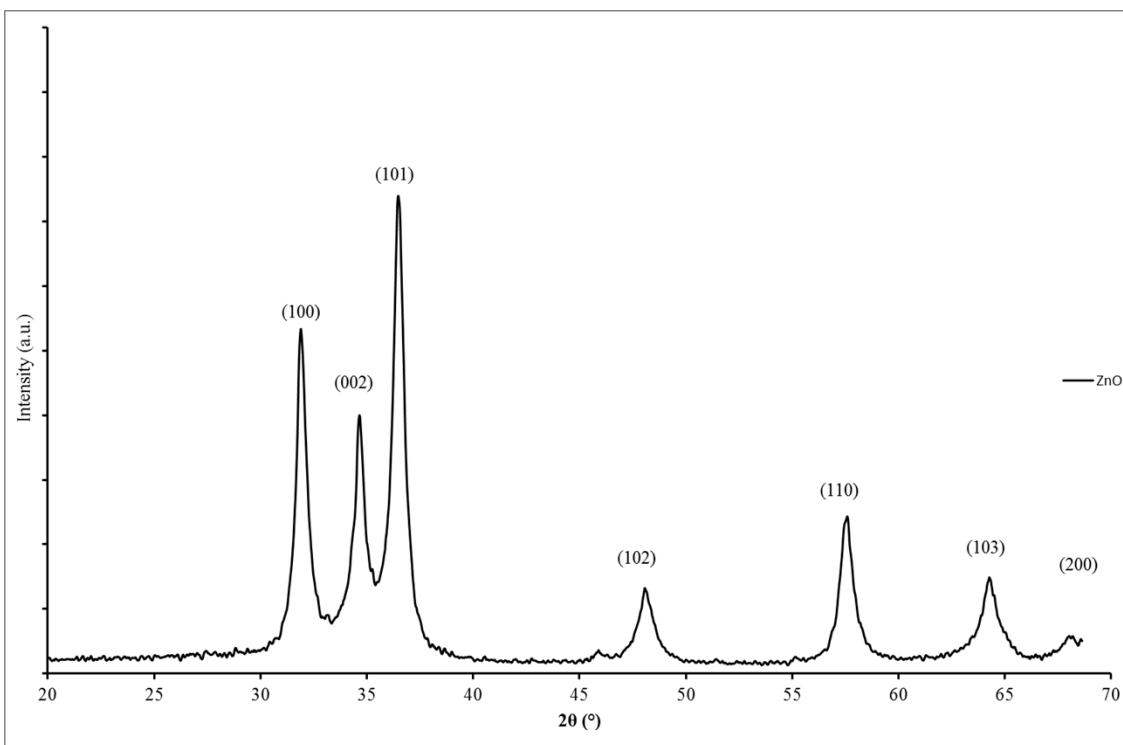


Fig. S5. XRD pattern of ZnO nanostructure prepared by calcination of TMU-4 at 500 °C.