STRUCTURAL CHEMISTRY

Volume 76 (2020)

Supporting information for article:

Structural analysis of interpenetrated methyl-modified MOF-5 and its gas-adsorption properties

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1. X-Ray structure analysis

The crystal data, data correction and selected refinement details are summarized in Table S1.

Table S1 Crystal data and structure refinements of **Me2MOF-5-int**

empirical formula	$C_{72}H_{76}N_4O_{30}Zn_8$
formula weight	2000.32
color	colorless
crystal system	monoclinic
Space group	$P2_1/c$ (#14)
unit-cell dimentions	
(a = Å), (b = Å), (c = Å)	a = 17.8530(9)
	b = 18.5810(11)
	c = 25.3020(15)
α (deg)	90.0000
β (deg)	91.504(2)
γ (deg)	90.0000
volume of unit cell (Å^3)	8390.5(8)
Z value	4
D_{calc} (g/cm^3)	1.584
crystal size (mm)	0.1 x 0.1 x 0.1
temp (°C)	-173
λ(Å)	0.71073
Reflections collected	76309
Independent reflections	19165
Completeness (%)	99.8
Parameters	1064
$R1$, $wR2$	0.0424, 0.0969
goodness-of-fit on F^2	1.032
CCDC	1972122

2. Thermogravimetric Analyses

The thermal stability of **Me_2MOF-5-int, Me2MOF-5,** and **MOF-5** was evaluated using TGA (r.t. to 500 °C) (Figs. S7 and S8). All **MOFs** exhibited high thermal stability up to 400 °C. The first weight loss (<100 °C) is due to the removal of solvent molecules from the pores.

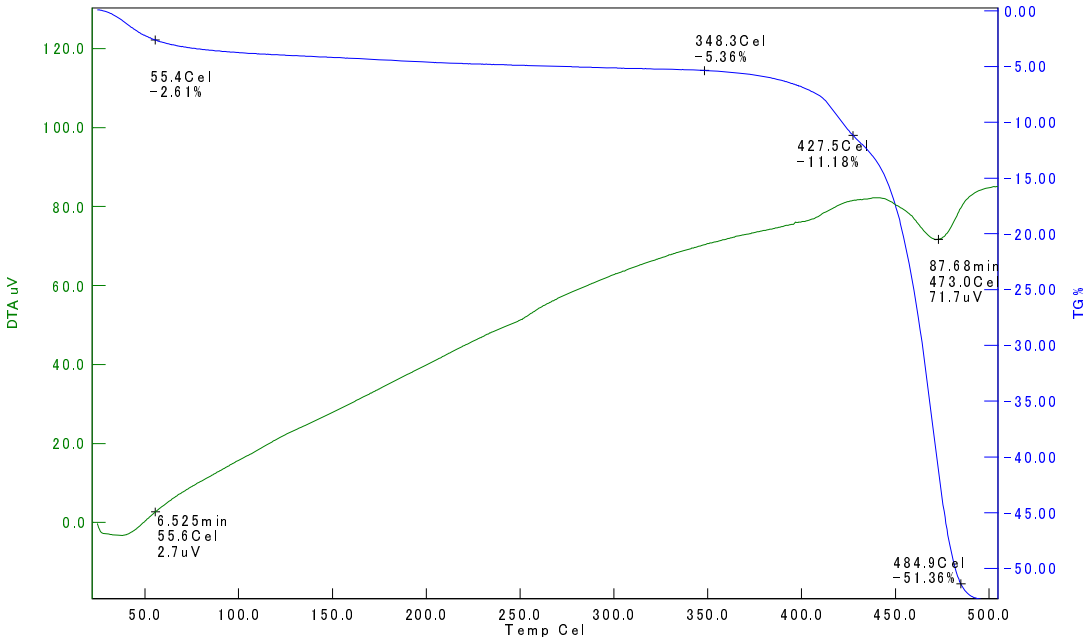

Fig. S1 TG/DTA curve of bulk **Me_2MOF-5-int**.

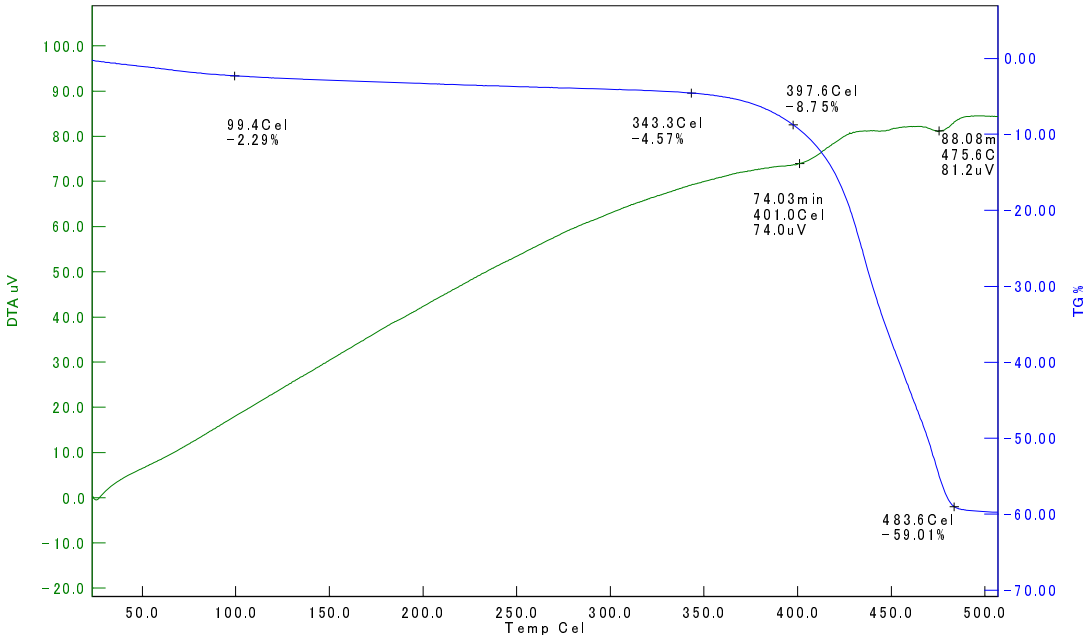

Fig. S2 TG/DTA curve of bulk **Me_2MOF-5**.

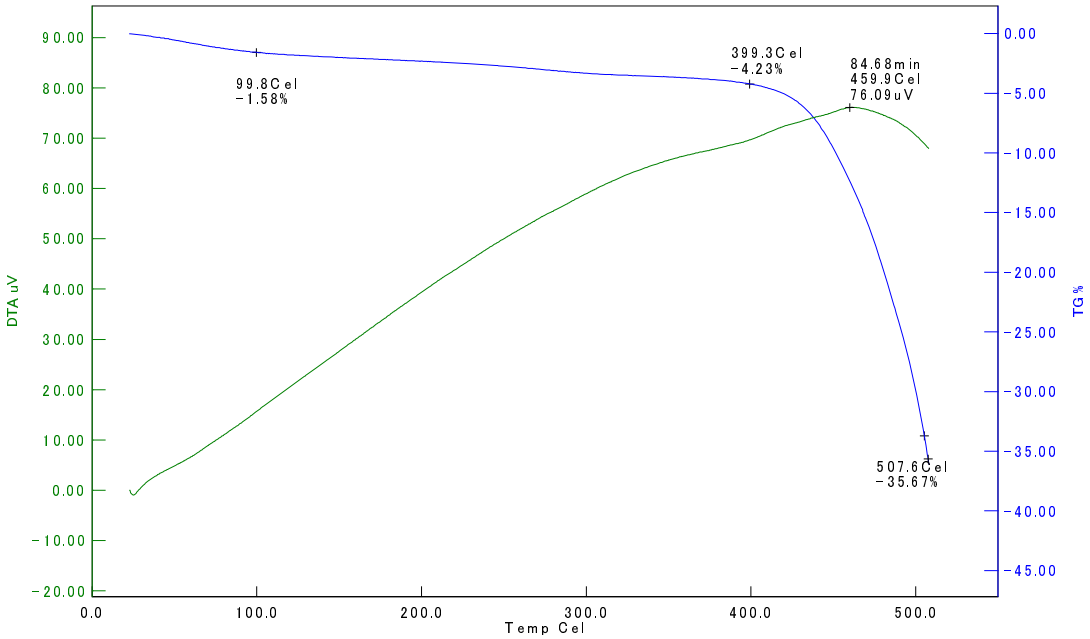

Fig. S3 TG/DTA curve of bulk **MOF-5**.