Electronic supplementary information

A self-made portable separation device based on 2-D MOFs nanosheet for the efficient separation of dyes in solutions

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Table S1 Crystallographic data and structural refinement data for **M-1**

Crystal data	
Chemical formula	$C_{28}H_{20.78}Cu_2N_2O_{10}\cdot 1.25(C_3H_7NO)$
M_r	763.71
Crystal system, space group	Orthorhombic, *Pnna*
Temperature (K)	293
a, *b*, *c* (Å)	24.2305 (8), 18.3074 (8), 17.7842 (6)
V (Å^3)	7862.0 (6)
Z	8
Radiation type	Cu *K*α
μ (mm^{-1})	1.81
Data collection	
Diffractometer	XtaLAB Synergy, Dualflex, HyPix diffractometer
Absorption correction	Multi-scan *CrysAlis PRO* 1.171.39.34b (Rigaku Oxford Diffraction, 2017) Empirical absorption correction using spherical harmonics, implemented in SCALE3 ABSPACK scaling algorithm.
T_{min}, T_{max}	0.607, 1.000
No. of measured, independent and observed [$I > 2\sigma(I)$] reflections	22234, 6217, 3210
R_{int}	0.096
$(\sin\theta/\lambda)_{max}$ (Å^{-1})	0.575
Refinement	
$R[F^2 > 2\sigma(F^2)]$, $wR(F^2)$, S	0.107, 0.259, 1.16
No. of reflections	6217
No. of parameters	656
No. of restraints	1219
H-atom treatment	H-atom parameters constrained
$\Delta\rho_{max}$, $\Delta\rho_{min}$ (e Å^{-3})	1.62, −0.68

Table S2 Bond lengths and bond angles for C-H...O weak interactions in **M-1**

D—H···*A*	*D*—H	H···*A*	*D*···*A*	*D*—H···*A*
C27—H27A···O9^{i}	0.96	2.63	3.326 (16)	130.0
C27—H27B···O6^{i}	0.96	2.81	3.309 (14)	113.5
C26—H26···O4	0.93	2.55	3.052 (12)	114.0
C13—H13···O5^{ii}	0.93	2.35	2.876 (17)	115.9
C15—H15C···O10^{iii}	0.96	2.92	3.43 (2)	114.3
C27A—H27E···O9^{i}	0.96	2.48	3.39 (3)	157.9
C26A—H26A···O9^{ii}	0.93	2.33	2.85 (2)	114.7

Symmetry codes: (i) −*x*+1, −*y*+2, −*z*+1; (ii) *x*−1/2, *y*, −*z*+1; (iii) *x*, −*y*+3/2, −*z*+1/2.

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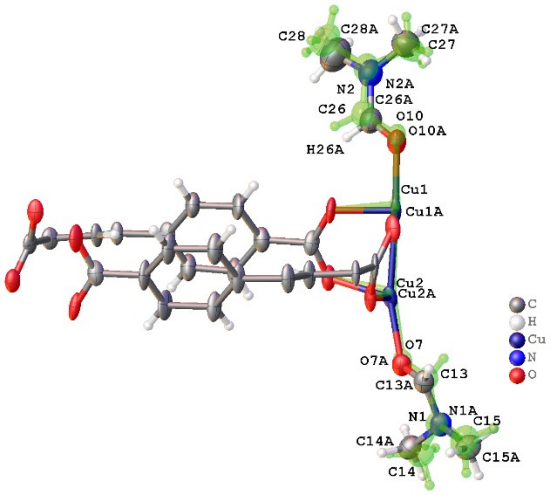


Fig. S1 The disorders of Cu^{2+} and two DMF molecules in the refinements.

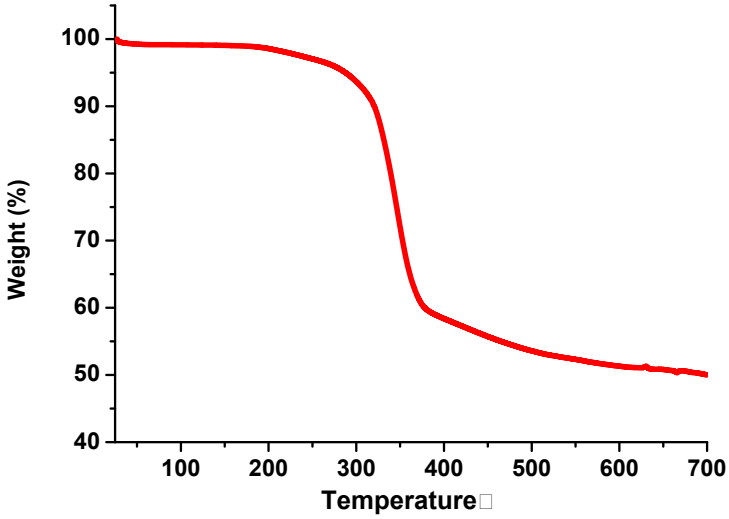
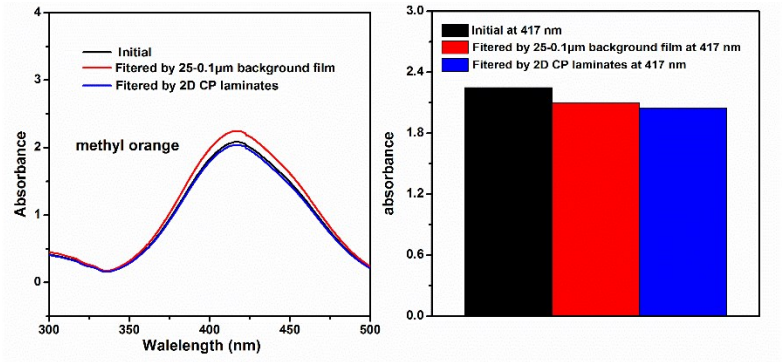
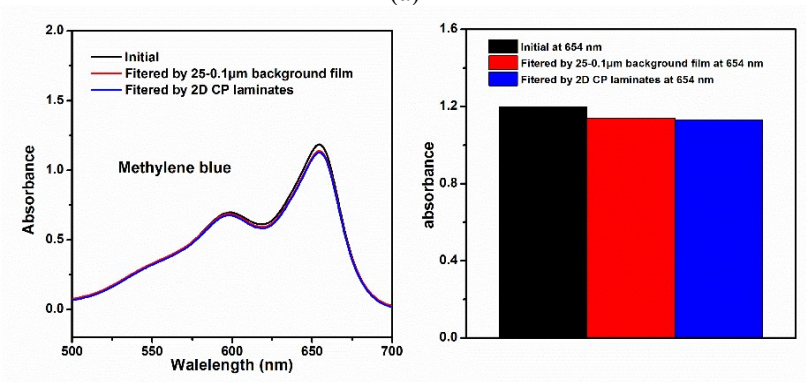


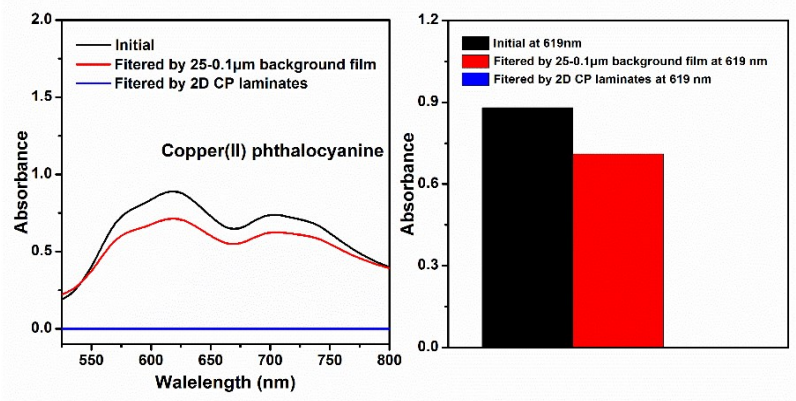
Fig. S2 TG analysis of **M-1**



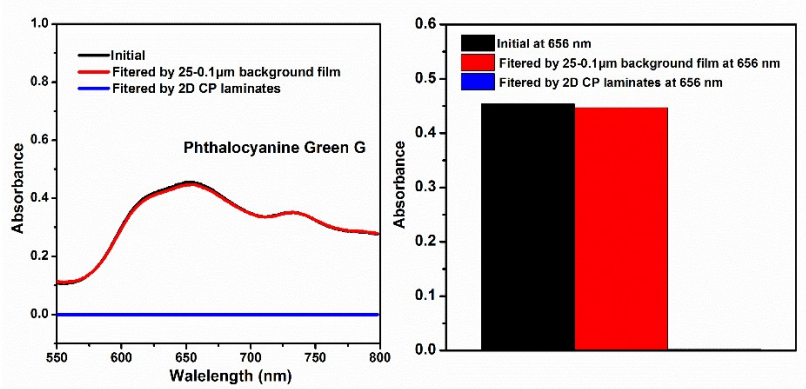
(a)



(b)



(c)



(d)

Fig. S3 UV-vis spectra of dyes solution before and after filtration (a–d) and dye removal rates of laminated **M-1**.