Supporting Information for:

Comparative electrochemical evaluation of trimetallic Zn-Cu-Mo and Mg-Cu-Mo metal organic frameworks-derived nanocomposites for supercapacitor applications

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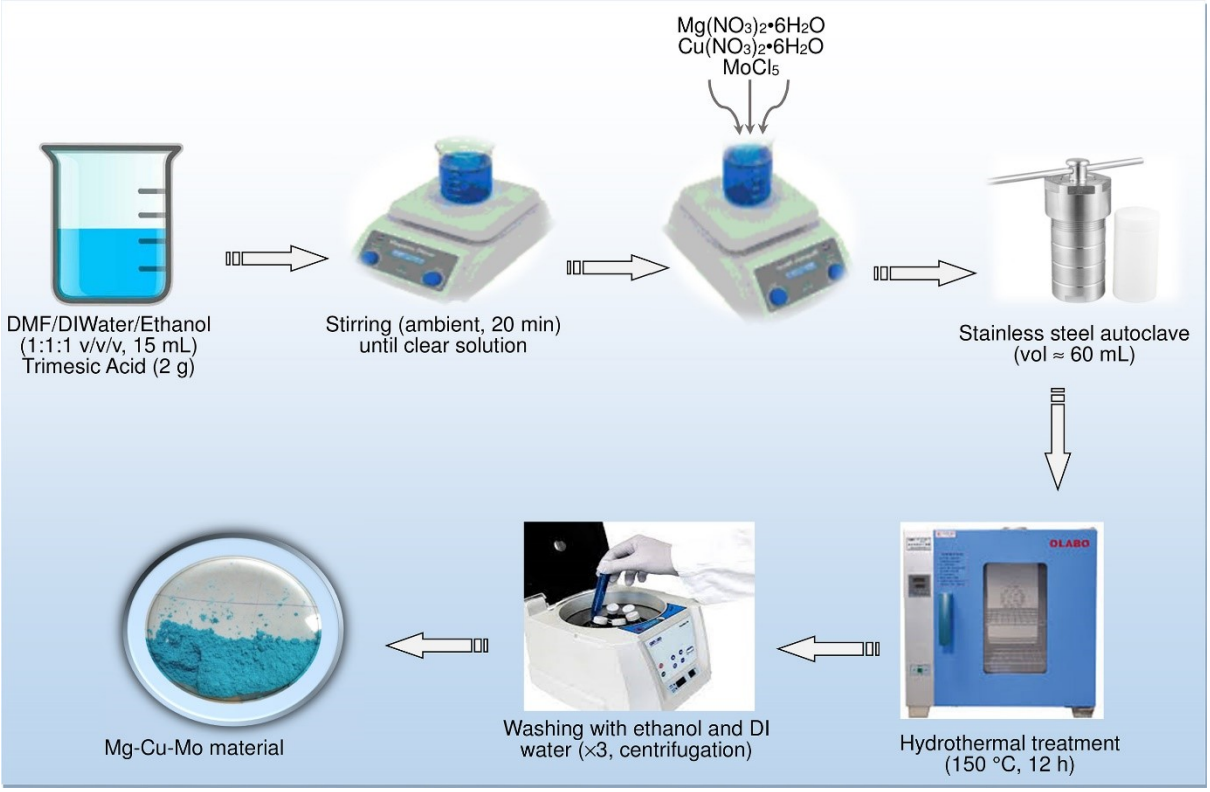

Fig S1: Hydrothermal synthesis scheme of Mg-Cu-Mo-MOF

Calculation of specific capacitance using electrochemical data

The specific capacitance of the fabricated electrode materials was calculated from cyclic voltammetry (CV) curves using the integral area method, which is considered the most accurate approach for capacitance determination. The following equation was employed:

$$C_s = \frac{\int I\, dV}{2 \times m \times v \times \Delta V} \times 100 \qquad \text{Eq. S1}$$

C_s = specific capacitance (F g^{-1})

$\int I\, dV$ = integrated area under the CV curve (mA•V)

m = mass of active material (g) 0.012 g (12 mg) in this study

ν = scan rate (V s^{-1})

ΔV = potential window (V); 0.7 V for all measurements

2 = correction factor accounting for both forward and reverse sweeps

100 = normalization factor for unit conversion (from mA to A)

Table S1. Specific capacitance values calculated from CV curves for Mg-Cu-Mo-MOF and Zn-Cu-Mo-MOF electrodes at various scan rates.

Sample	Area	Scan Rate (V/s)	Potential Window (V)	Mass (g)	Specific capacitance (Fg^{-1})
Mg-Cu-Mo	0.00303	0.1	0.7	0.012	180
	2.76E-04	0.01	0.7	0.012	164
	5.73E-04	0.02	0.7	0.012	165
	9.01E-04	0.03	0.7	0.012	178
	0.001247794	0.04	0.7	0.012	185
	0.001608287	0.05	0.7	0.012	191
Zn-Cu-Mo	0.001039756	0.1	0.7	0.012	61
	4.80E-04	0.01	0.7	0.012	285
	9.24E-04	0.02	0.7	0.012	275
	0.001339485	0.03	0.7	0.012	265
	0.001723857	0.04	0.7		256
	0.001723857	0.05	0.7	0.012	205

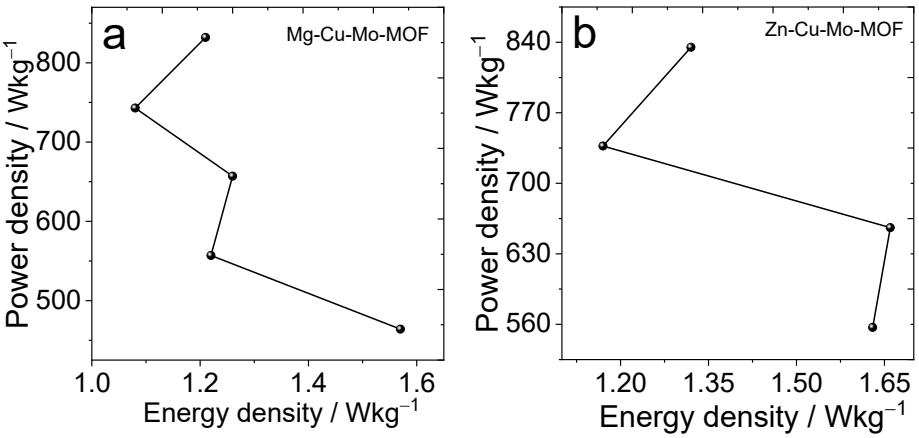

Fig. S2. Specific capacitance as a function of power density for (a) Mg-Cu-Mo and (b) Zn-Cu-Mo electrodes.