

Supporting Information

Strategic Enhancement of a Neodymium-based Metal Organic Framework with SWCNTs and MXene for Hybrid Energy Storage Devices

Table S1 Crystal data and structure refinement parameters.

Empirical formula	C ₂₁ H ₁₅ Nd ₂ N ₃ O ₁₆
Formula weight	853.82
Crystal system	Monoclinic
Space group	<i>P2₁/c</i>
<i>a</i> (Å)	10.9126(2)
<i>b</i> (Å)	17.3583(4)
<i>c</i> (Å)	13.4969(3)
β (°)	100.1544(10)
<i>V</i> (Å ³)	2516.59(9)
<i>Z</i>	4
<i>D_c</i> (g cm ⁻³)	2.248
μ (mm ⁻¹)	3.60
θ range (°)	5.1-27.4
Measured refls.	10942
Independent refls.	5726
<i>R</i> _{int}	0.091
<i>S</i>	1.04
<i>R</i> ₁ / <i>wR</i> ₂	0.036/0.070
$\Delta\rho_{\max}/\Delta\rho_{\min}$ (eÅ ⁻³)	1.68/-2.19
CCDC	2497615

Table S2 Selected bond distances and angles (Å, °)

Nd1-O4	2.514(5)	Nd1-N10	2.615(6)	Nd2-O3	2.535(5)
Nd2-N19	2.567(6)	C8-C13	1.286(8)	Nd2-O21	2.478(5)
O6-Nd1-O8	67.20(16)	O8-Nd1-N10	116.54(16)	O5-Nd1-N17	71.63(16)
O7-Nd2-O13	147.34(18)	N19-Nd2. O21	62.72(17)	Nd1-N10- C25	119.3(5)

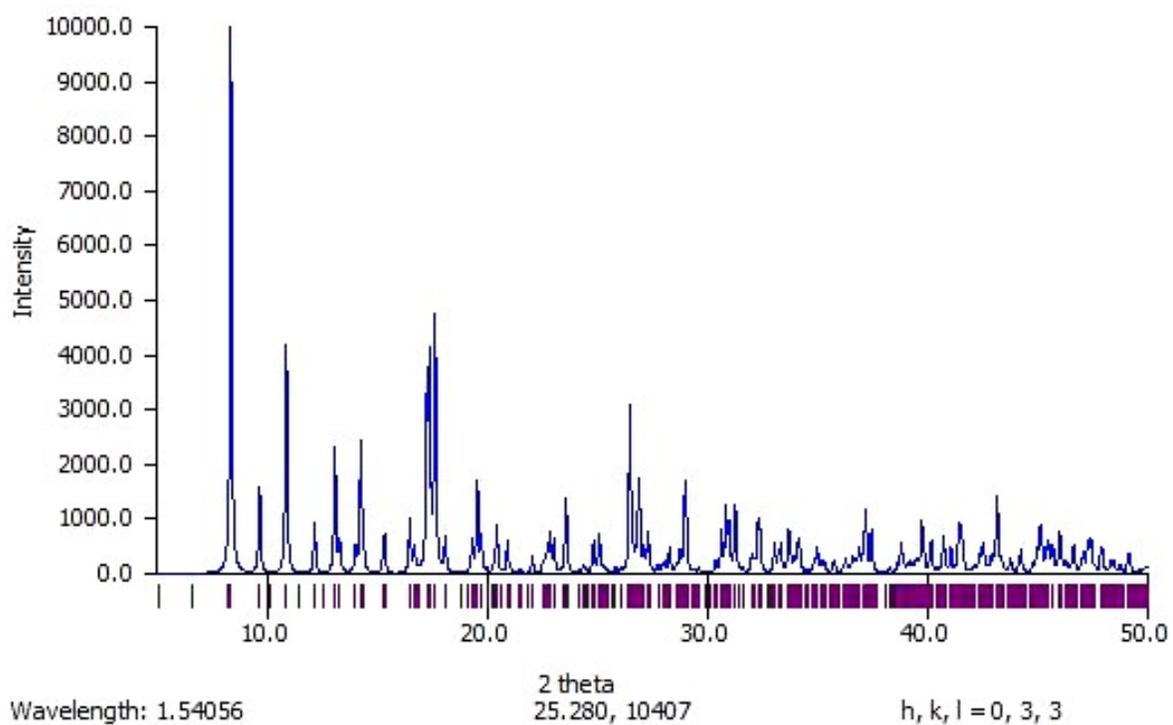


Fig.S1. Simulated XRD diffractogram of Nd-PDA MOF

Thermal Analysis

Nd PDA

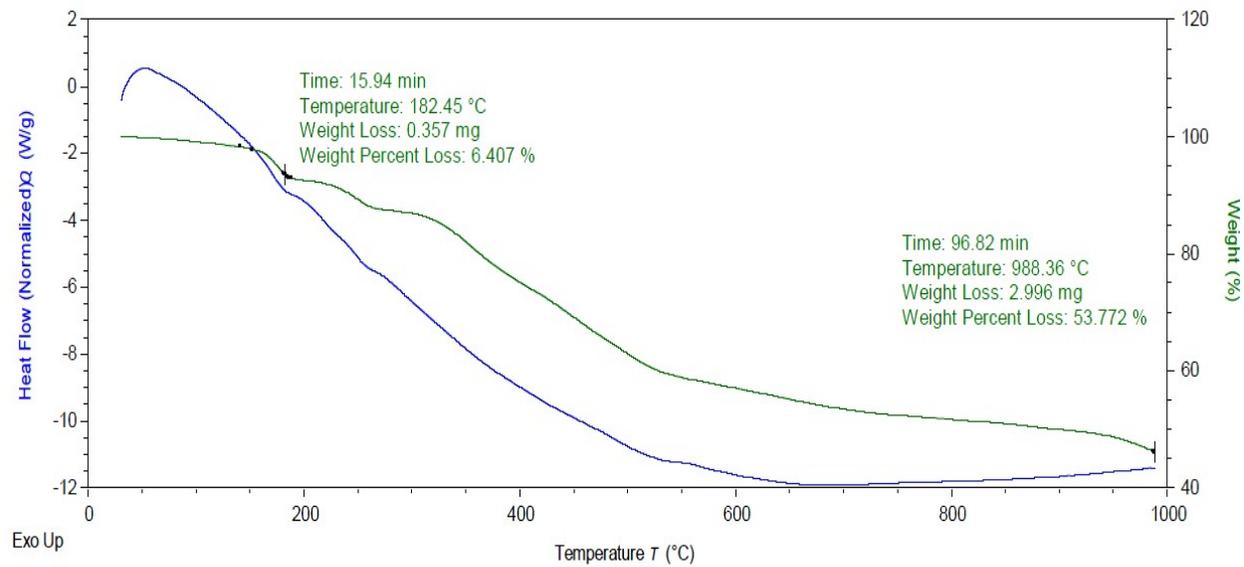


Fig. S3. TGA of Nd-PDA MOF

FTIR Spectroscopy

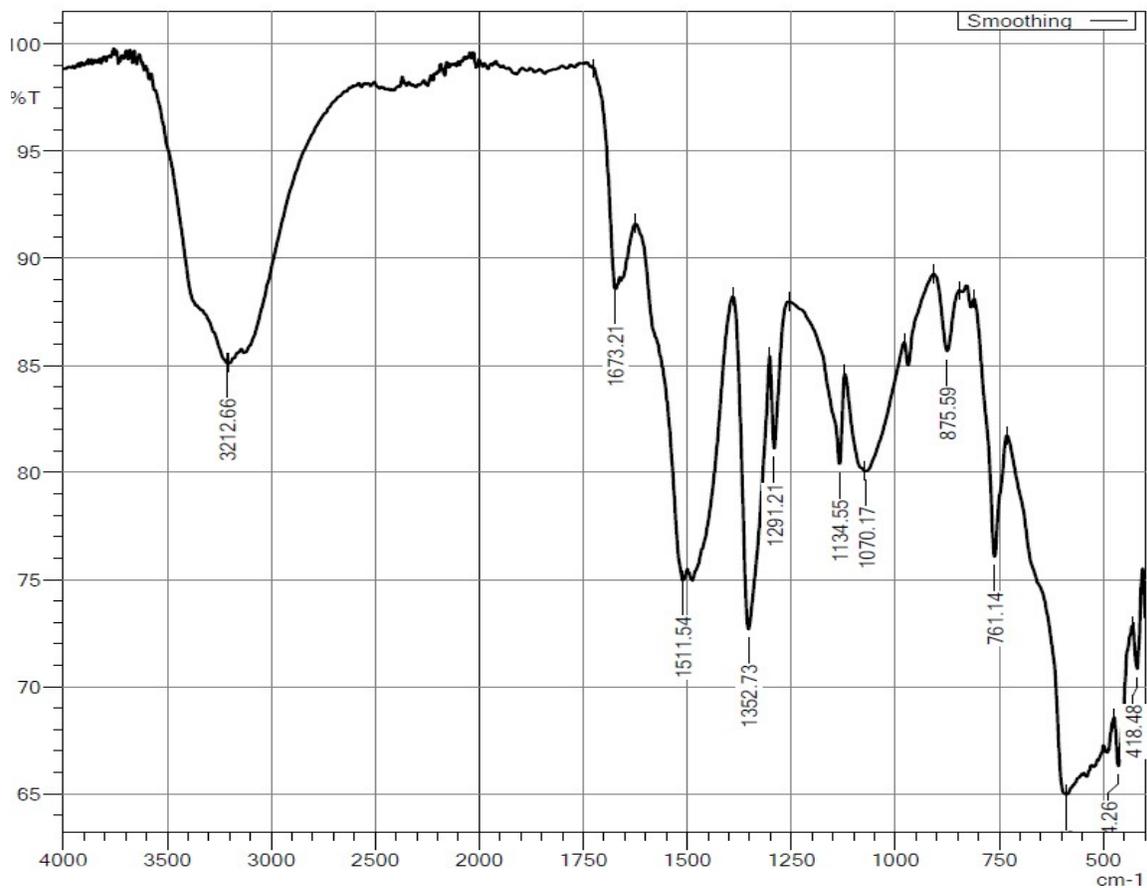


Figure S3: FTIR spectrum of Nd-PDA MOF

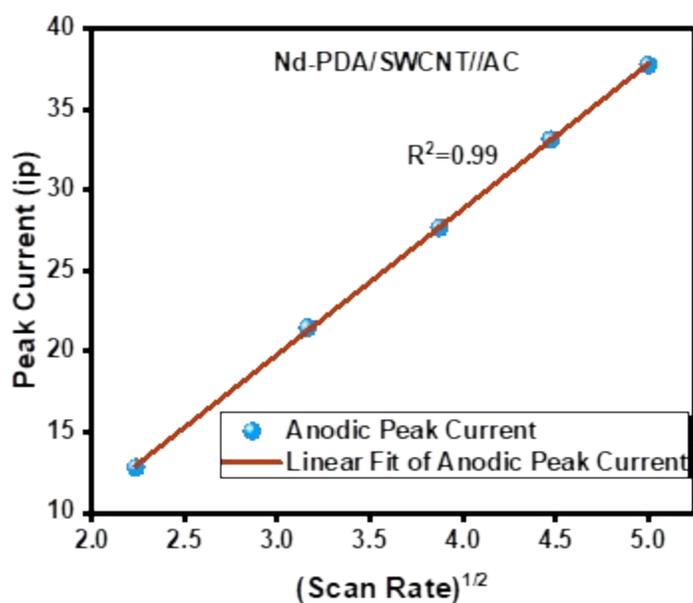


Figure S4: Figure S2 Linear relationship between the peak current and square root of the scan rate for Nd-PDA/SWCNT//AC

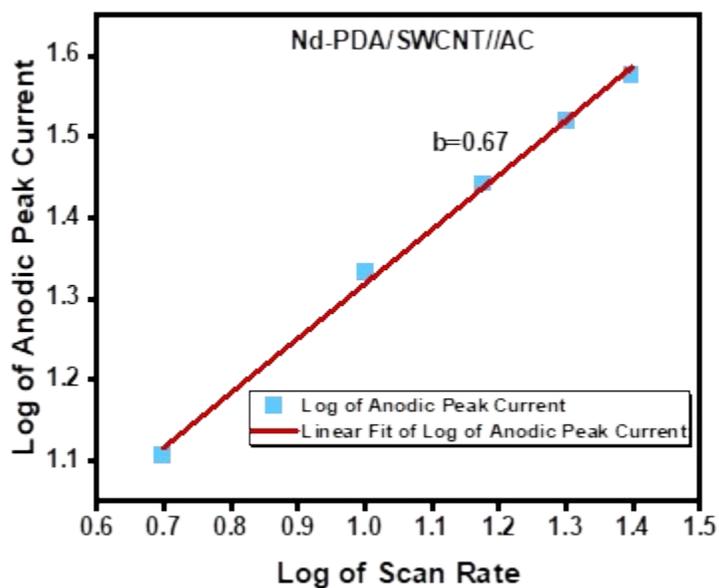


Figure S5: Plot for b-value