Exploration of metal-layered double hydroxide composite materials for hybrid capacitor produced by facile and efficient electrodeposition process.

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Supplementary information

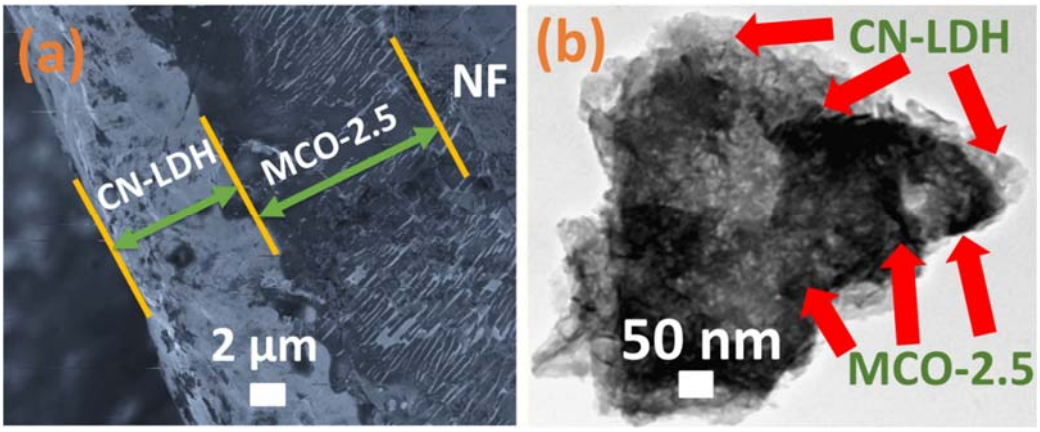

Fig S1: (a) SEM cross section, and **(b)** TEM image of the MCO-2.5@CN-LDH composite sample.

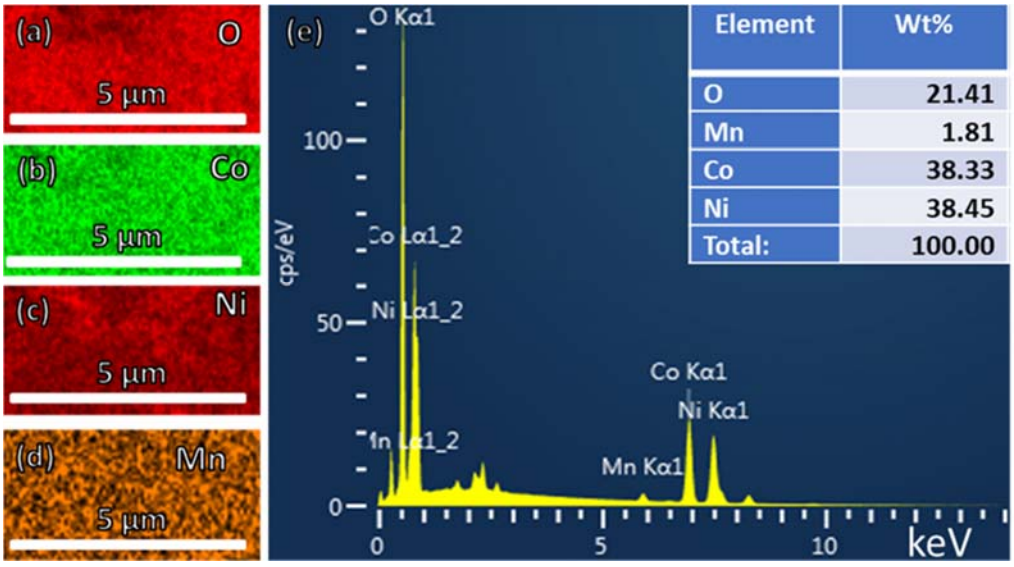

Fig S2: (a) - (d) The elemental mapping of the CMO-2.5@CN-LDH composite sample displaying the distribution of oxygen, cobalt, nickel, and manganese, respectively, and **(e)** the percentage composition of the elements within the composite material.

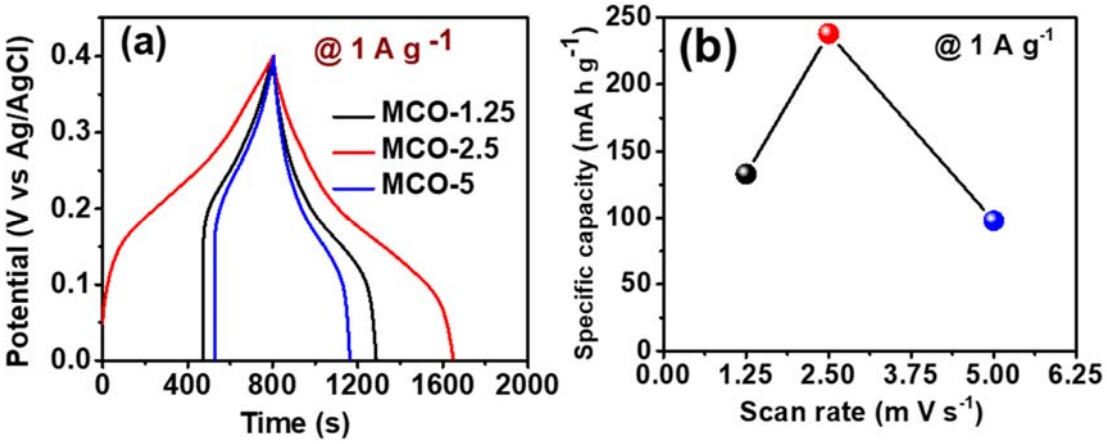

Fig. S3: (a) GCD and **(b)** specific capacity vs CV deposition scan rate of MCO-1.25, MCO-2.5, and MCO-5 samples, respectively in 2 M KOH electrolyte.

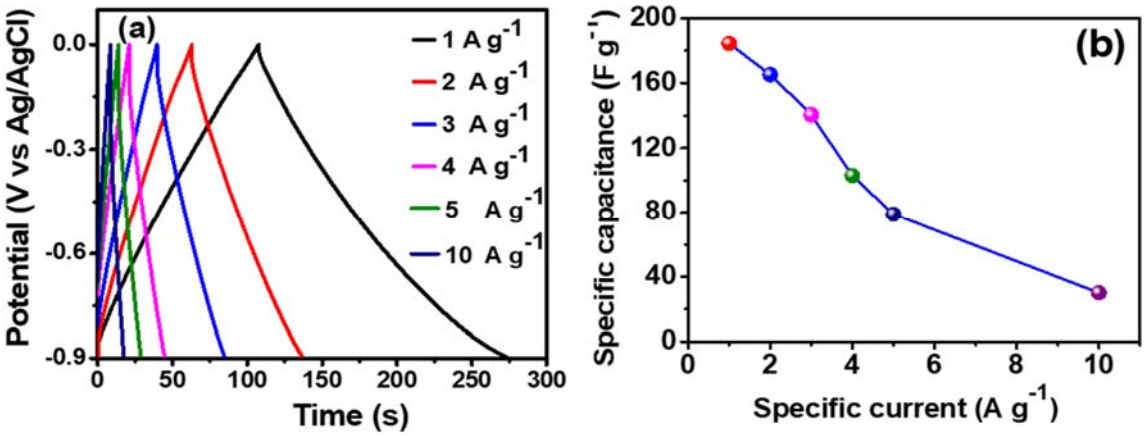

Fig. S4: (a) GCD and **(b)** specific vs specific current of CCBW in 2 M KOH electrolyte.

Table S1: Comparison of the capacitive contribution of LDH based electrodes and devices reported in literature.

Electrode or device	Electrolyte	Voltage (V)	Capacitive Contribution at 5 mVs^{-1} (%)	Ref:
Ni-Zn-Fe LDH	6 M KOH	0.45	7.5	[1]
CoNi-LDH@PCPs	1 M KOH	0.6	83.0	[2]
NiCoAl-LDH/$V_4C_3T_x$//AC	1 M KOH	1.6	53.8	[3]
C_{60}–Ni–Fe-LDH	1 M KOH	0.55	58.7	[4]
NC2S12-15/NF	2 M KOH	0.6	66.1	[5]
$Zn_{0.25}Ni_{0.75}$Co-LDH-BA^{-}//AC	2 M KOH	1.6	41	[6]
MCO-2.5@CN-LDH	2 M KOH	0.4	29.1	This work

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