Supplementary Information (SI) for Nanoscale Advances.

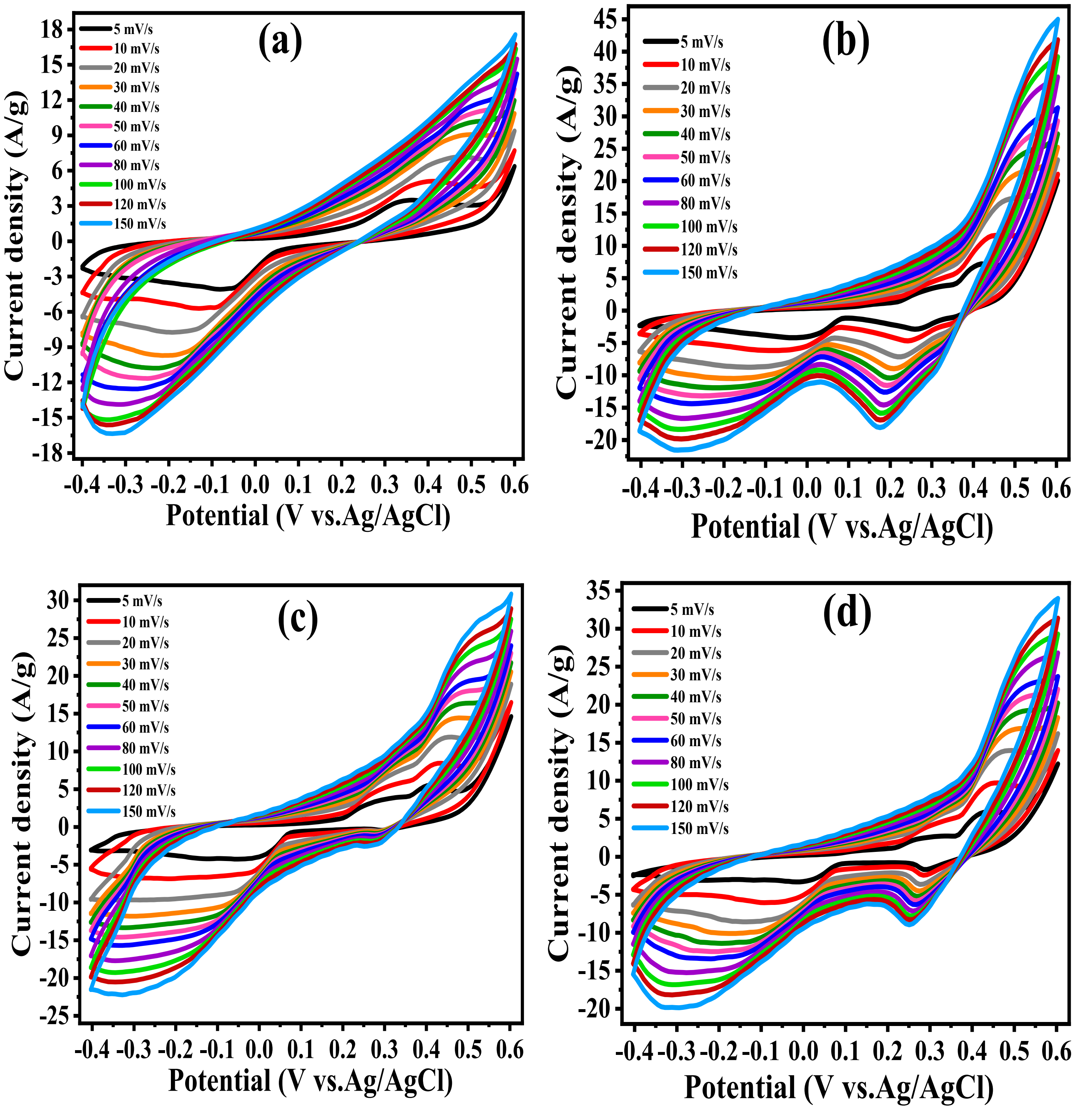

Fig. S1. Cyclic voltammetry (CV) curves of (a) Fe-BDC MOF, (b) Ni_5Fe_1-BDC MOF, (c) $Ni_{15}Fe_1$-BDC MOF, and (d) $Ni_{20}Fe_1$-BDC MOF at different scan rates.

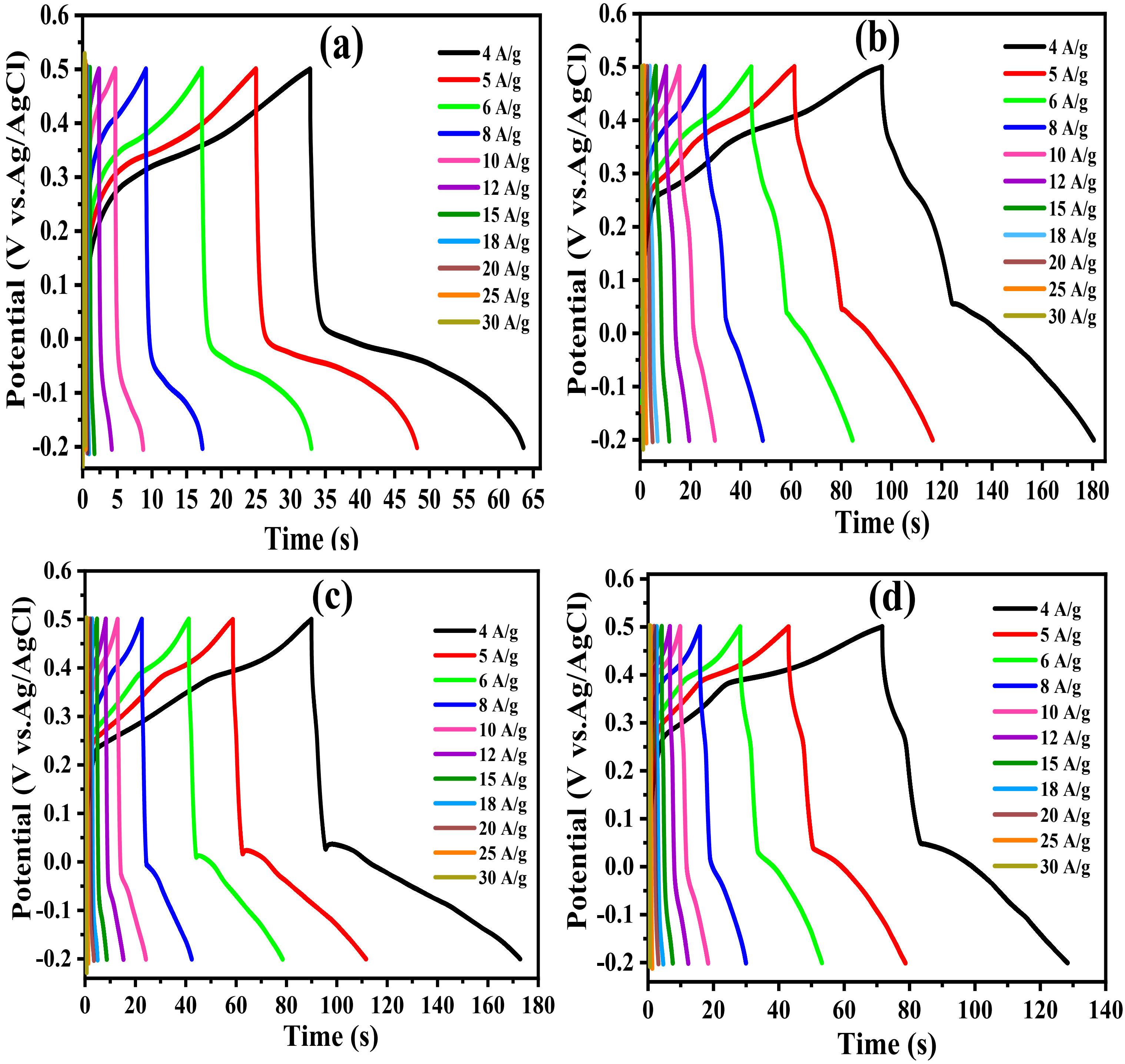

Fig. S2. Galvanostatic charge/discharge (GCD) curves of (a) Fe-BDC MOF, (b) Ni_5Fe_1-BDC MOF, (c) $Ni_{15}Fe_1$-BDC MOF, and (d) $Ni_{20}Fe_1$-BDC MOF at different current densities.

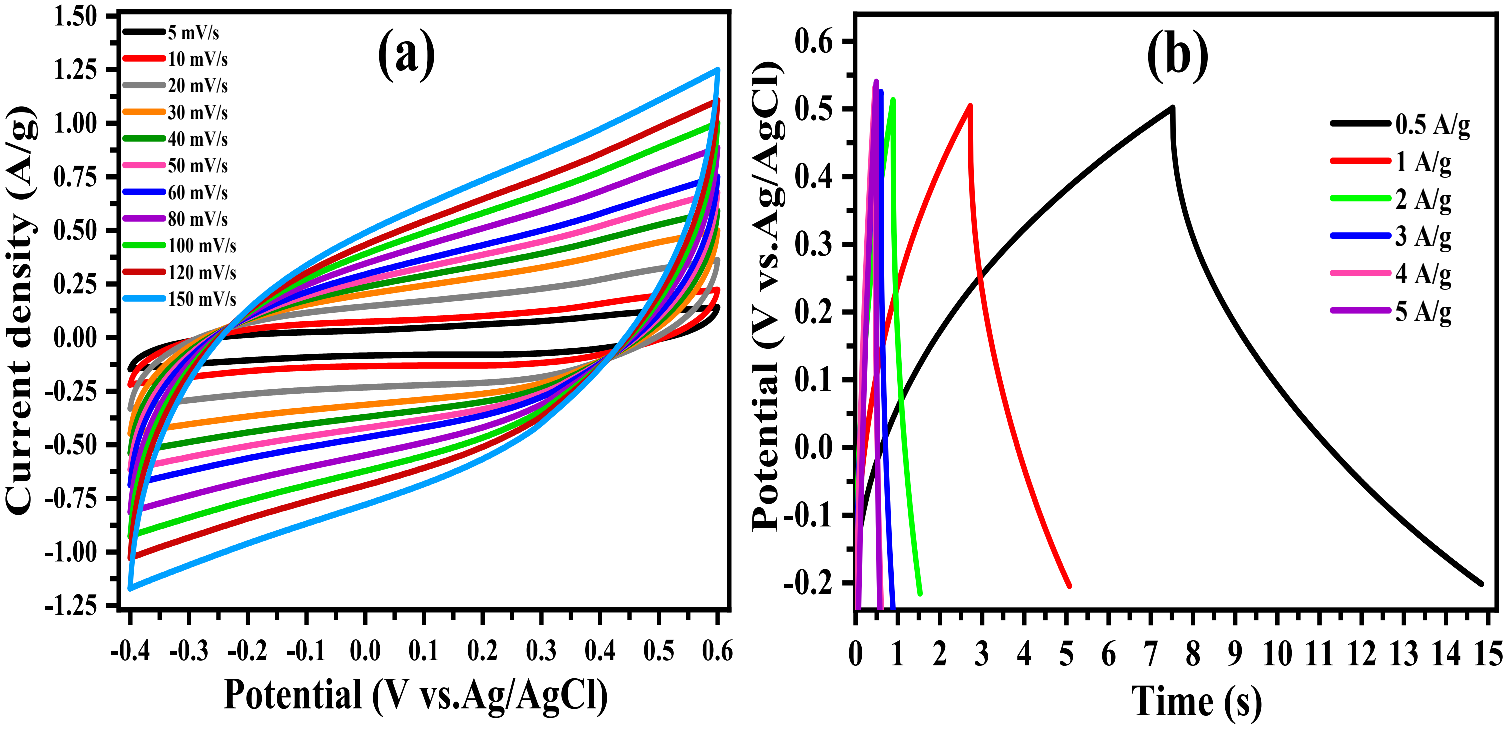

Fig. S3. Electrochemical performances of $Ni_{10}Fe_1$-BDC MOF//$Ni_{10}Fe_1$-BDC MOF symmetric supercapacitor cell (SSC): (a) CV curves in potential range of -0.4 to 0.6 V at different scan rates and (b) GCD curves measured at different current densities.

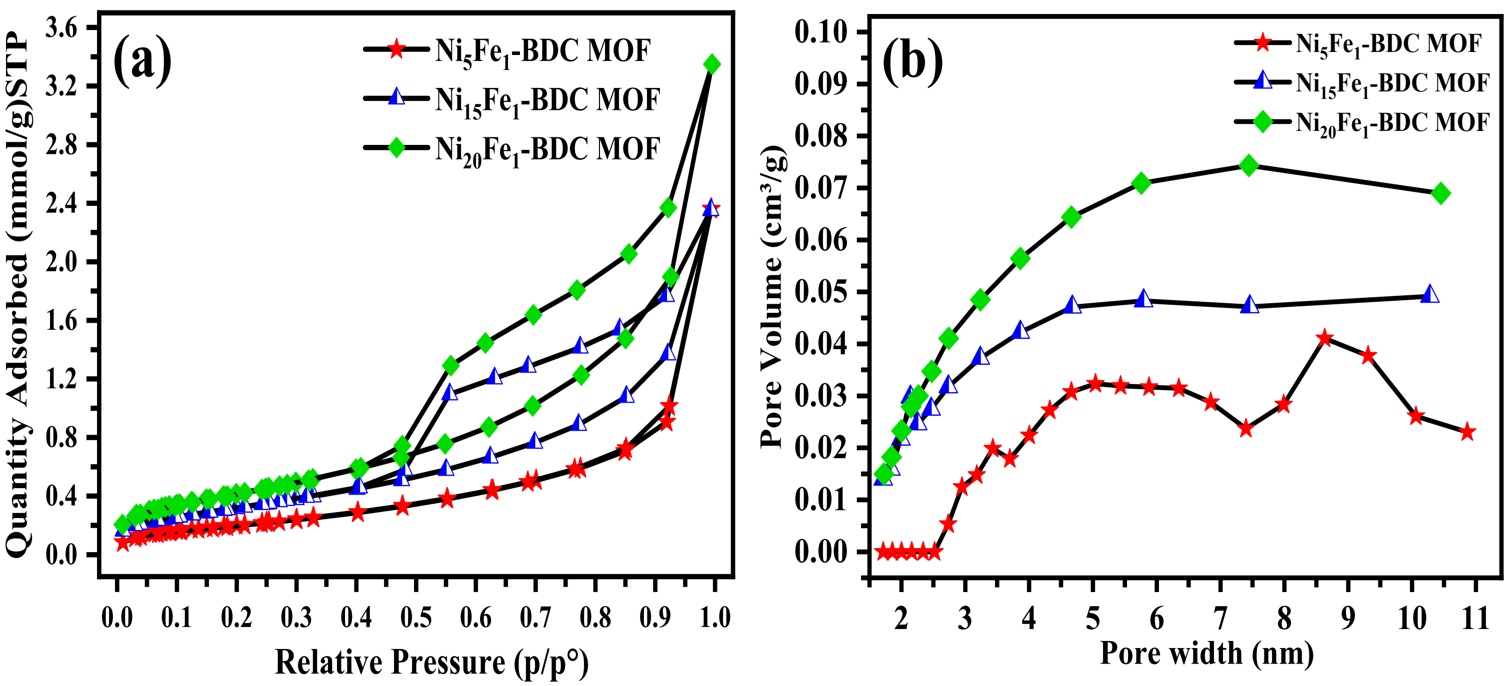

Fig. S4: (a) N_2 adsorption–desorption isotherms and (b) the pore size distribution of Ni_5Fe_1-BDC MOF, $Ni_{15}Fe_1$-BDC MOF, and $Ni_{20}Fe_1$-BDC MOF materials.

Table S1. Comparison of the specific capacitance, electrolyte, cyclic stability and morphology of Ni-Fe BDC MOF electrode with the relevant literature in the 3-electrode system.

Materials	**Substrate , morphology**	**Specific capacitance (F/g)**	**Electrolyte**	**Stability (%) after n cycles**	**Ref**
MIL-101(Fe)	Nickel foam, Octahedral crystals	94.4 (0.5 A/g)	2 M KOH	115%, 3000 (200 mV/s)	[1]
MIL(Fe)-C-800	Carbon cloth (CC), octahedral framework with nanoparticles decorated on surface.	69.2 (1 A/g)	3 M KOH	---	[2]
MIL-53(Fe)	Nickel foam, partly sheets, agglomerated nanoparticle, and leaf-like structure	10.1 (0.5 A/g)	6 M KOH	---	[3]
MIL-101(Fe)	Nickel foam, octahedral	775.6 (7 A/g)	3 M KOH	82% , 5000 (10 A/g)	[4]
MIL-101(Fe)	Nickel foam, octahedrons	166.6 (0.2 A/g)	6 M KOH	---	[5]
FeNi-MIL-88/NF	Nickel foam, spherical-like nanoparticles	205 (1 A/g)	6 M KOH	---	[6]
NiFe-MOF/NF	Nickel foam, rod-like structure	450 (0.5 A/g)	1 M KOH	92.3% , 1000 (5 A/g)	[7]
MOF derived $NiFe_2O_4$	Stainless Steel (SS), Mesh-like structure	833 (0.25 A/g)	1 M KOH	74% , 3000 (3 A/g)	[8]
$NiFe_2O_4/MoS_2$	Nickel foam, nanoparticles on nanosheets	506 (1 A/g)	1 M KOH	90.7% , 3000 (5 A/g)	[9]
$NiFe_2O_4$/Graphene	Nickel foam, nanosheets	464.153 (1 A/g)	6 M KOH	140%, 5000 (0.5 A/g)	[10]
rGO-NiFe2O4	Nickel foam, Nanoparticles	215.7 (0.5 A/g)	1M Na_2SO_4	89.4%, 10000 (10 A/g)	[11]
MOF derived Ni–Fe–O/ NPC @PCNFs-400	Nanomaterials on PCNFs mat	1419 (1 A/g)	3 M KOH	88.5%, 10000 (20 A/g)	[12]
NiFe-PBA	Nickel foam, nanocubes	187.07 (1 A/g)	6 M KOH	---	[13]
Fe-BDC MOF	Graphite sheet, macroparticles	196.24 (4 A/g)	1 M KOH	36.88 %, 2000 (12 A/g)	This work
$Ni_{10}Fe_1$-BDC MOF	Graphite sheet, nanospheres	918.75 (4 A/g)	1 M KOH	72.22 %, 2000 (12 A/g)	This work

Table S2. Electrochemical parameters derived from the electrochemical equivalent circuit (EC) fitting the data obtained from electrochemical impedance spectroscopy (EIS)**.**

	Rs	**CPE1**		**R**	**W**	**CPE2**		**R**
		Y_o	**n**			**Y_o**	**n**	
Fe-BDC MOF	10	0.01609	0.5151	110700000	47760	0.00001303	0.7769	2.721
Ni_5Fe_1-BDC MOF	2.214	0.04021	0.3753	109	207.6	0.05249	0.825	749.9
$Ni_{10}Fe_1$-BDC MOF	1	0.01612	0.6137	4.076	0.007991	0.000006978	0.8814	2.205
$Ni_{15}Fe_1$-BDC MOF	1.832	0.02538	0.418	119.1	964.1	0.07551	1	46.46
$Ni_{20}Fe_1$-BDC MOF	2.22	0.02706	0.4161	58.24	21370000	0.0372	0.8345	66.41

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