Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

$NiFe_2O_4$ quantum dots anchored on flower-like Ni-MOF with enhanced electrochemical performance for supercapacitors

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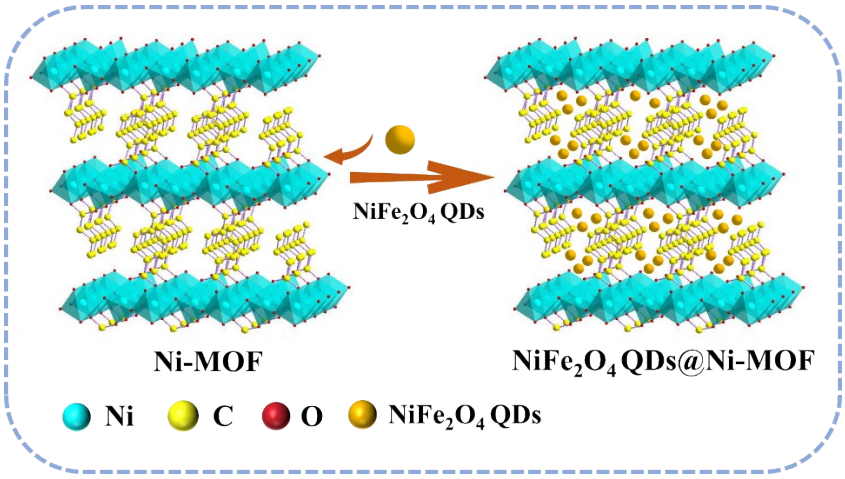

Figure S1 View of the structure of Ni-MOF/$NiFe_2O_4$.

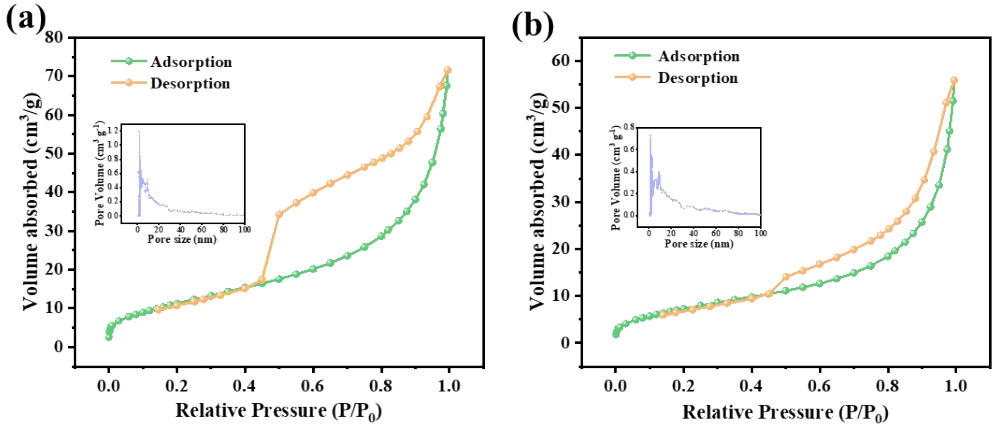

Figure S2 N_2 adsorption and desorption isotherms of (a) Ni-MOF, (b) $NiFe_2O_4$ QDs@Ni-MOF-10

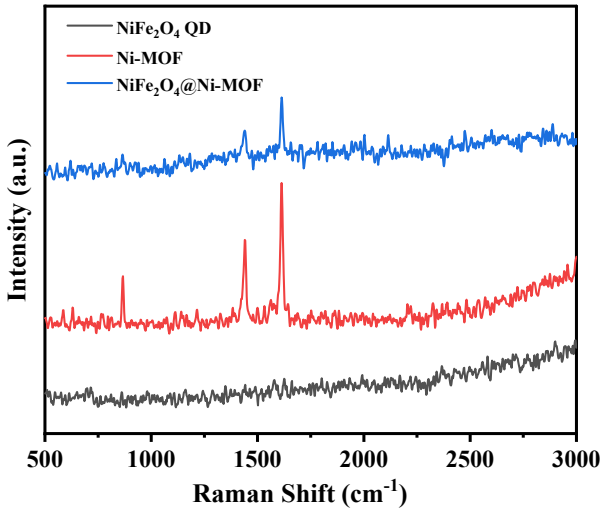

Figure S3 Raman spectrum of $NiFe_2O_4$ QDs, Ni-MOF and $NiFe_2O_4$ QDs@ Ni-MOF.

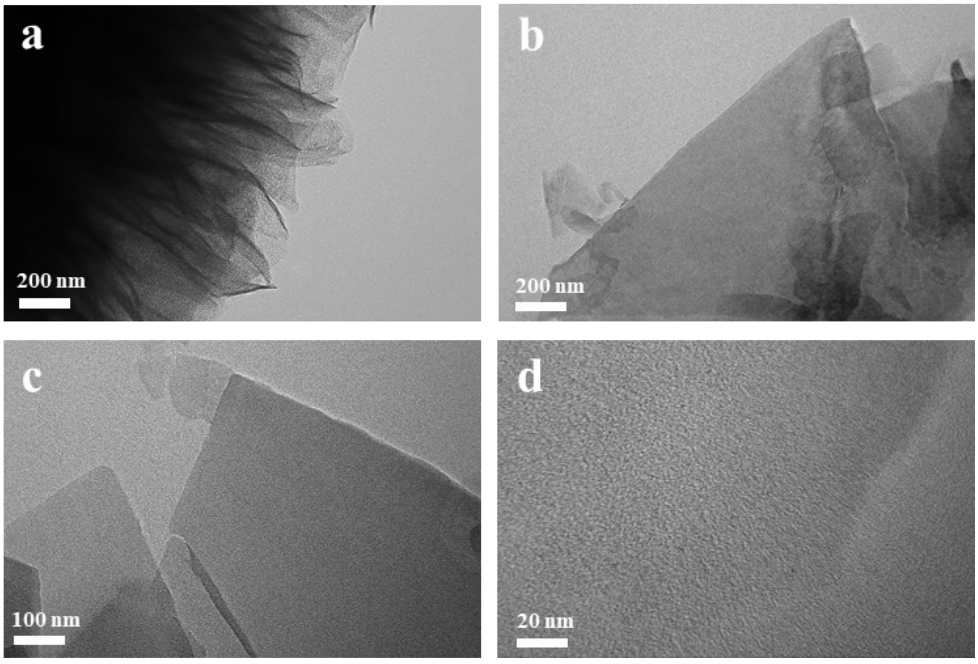

Figure S4 TEM images of Ni-MOF at different magnifications.

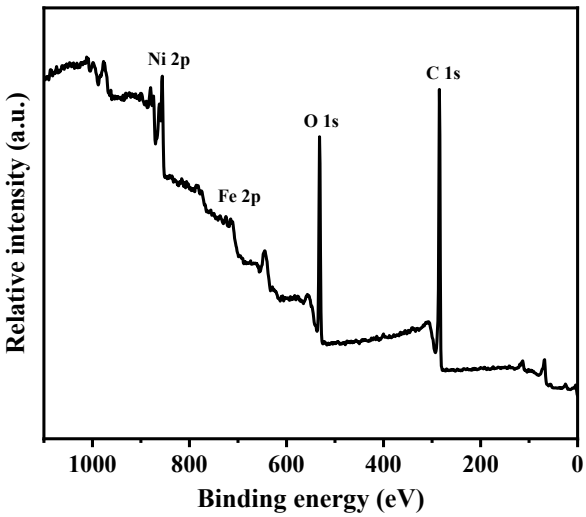

Figure S5 XPS full spectra of $NiFe_2O_4$ QDs@Ni-MOF-10

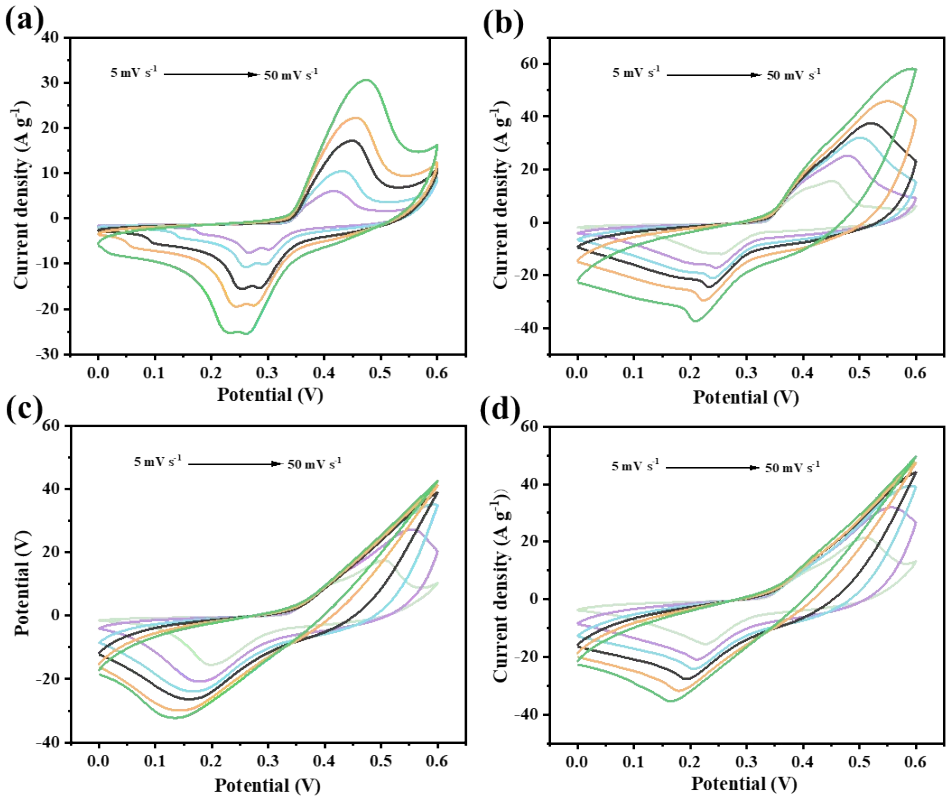

Figure S6 CV curves measured at different scan rates of (a) $NiFe_2O_4$ QDs, (b) Ni-MOF, (c) $NiFe_2O_4$ QDs@Ni-MOF-5, (d) $NiFe_2O_4$ QDs@Ni-MOF-15.

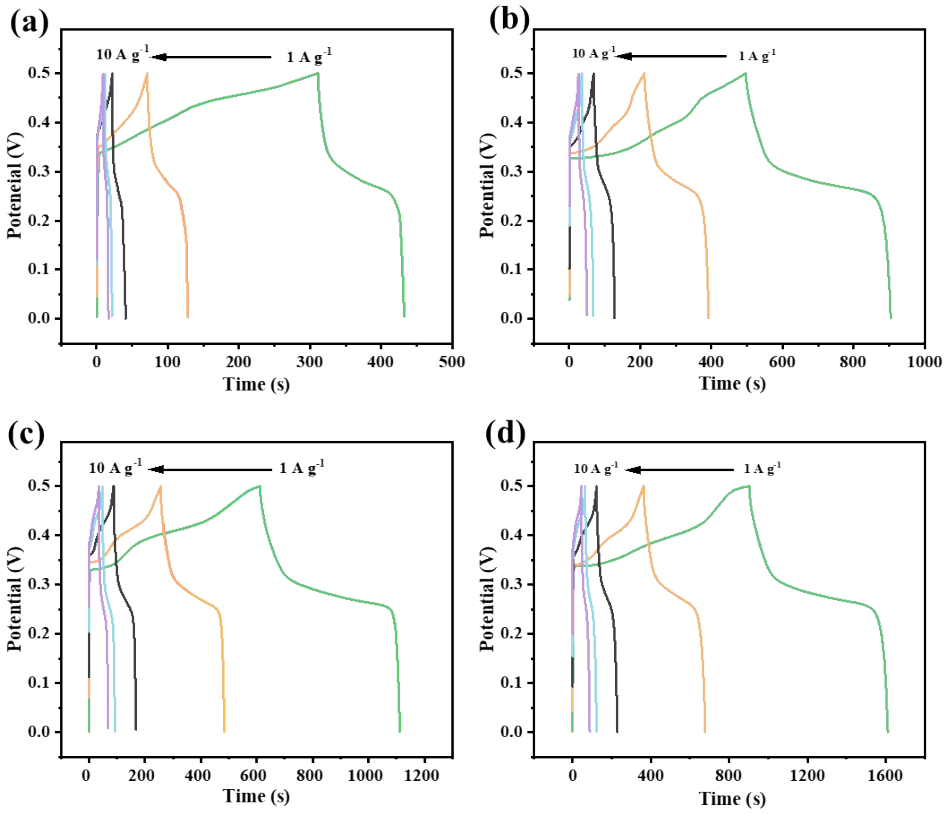

Figure S7 GCD curves measured at current density of (a) $NiFe_2O_4$ QDs, (b) Ni-MOF, (c) $NiFe_2O_4$ QDs@Ni-MOF-5, (d) $NiFe_2O_4$ QDs@Ni-MOF-15.

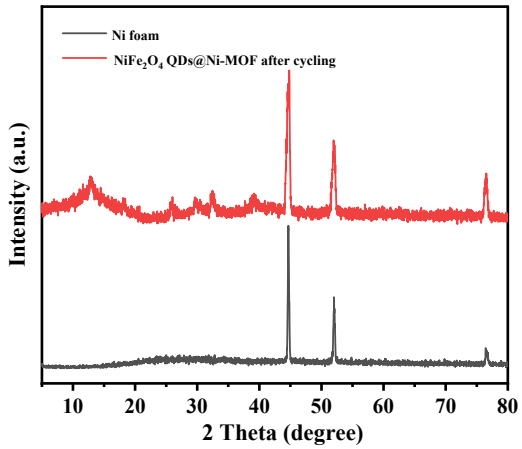

Figure S8 XRD patterns of $NiFe_2O_4$ QDs@Ni-MOF-10 after cycling.

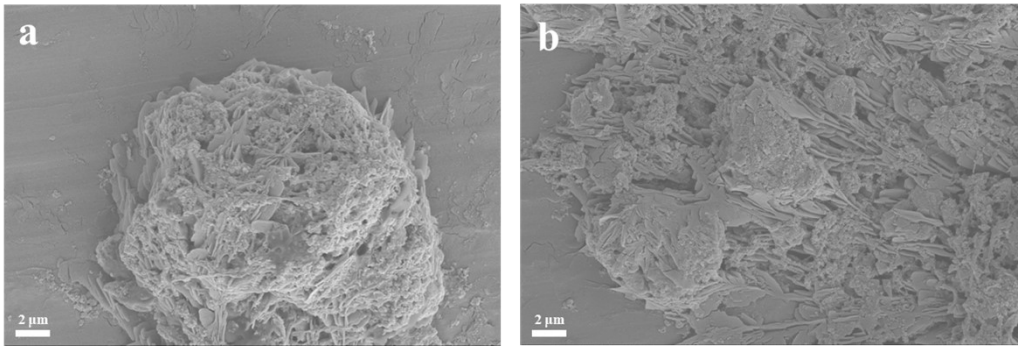

Figure S9 SEM images of $NiFe_2O_4$ QDs@Ni-MOF-10 after cycling.

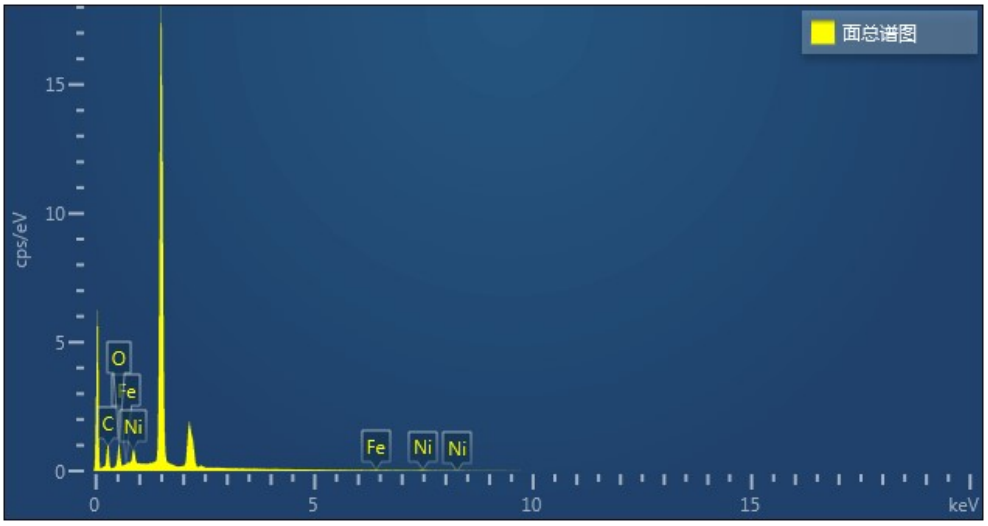

Figure S10 Distribution of elements in $NiFe_2O_4$ QDs@Ni-MOF-10

Table S1 The elemental content in $NiFe_2O_4$ QDs@Ni-MOF-10.

Element	Obvious concentration	K ratio	wt%	wt% (Sigma)
C	0.29	0.00290	37.30	2.85
O	0.57	0.00191	23.23	1.80
Fe	0.12	0.00119	8.89	2.07
Ni	0.38	0.00381	30.58	5.05

Table S2 The ICP-MS results of $NiFe_2O_4$ QDs@Ni-MOF with different QDs quantities.

Number of sample	Detected element	Concentration of iron (μg/L)	Concentration of iron in digestion solution (μg/L)	Content of iron in sample (μg/kg)	Percentage of iron in sample（%)
$NiFe_2O_4$ QDs@Ni-MOF-5	Fe	82.087	8208.70199	11033201.6	1.10
$NiFe_2O_4$ QDs@Ni-MOF-10	Fe	129.578	12957.776	19282404.8	1.93
$NiFe_2O_4$ QDs@Ni-MOF-15	Fe	267.912	26791.1595	33888933.4	3.40