

Figure S1. (a,b) XRD refinement of Co-MOF/NF and $\text{Ni}_3\text{S}_2/\text{TiN}@$ Co-MOF/NF.

Table S1. Cell parameters of Co-MOF/NF and $\text{Ni}_3\text{S}_2/\text{TiN}@$ Co-MOF/NF.

Cell Parameters	Co-MOF/NF	$\text{Ni}_3\text{S}_2/\text{TiN}@$ Co-MOF/NF
a (Å)	26.650	26.476
b(Å)	26.650	26.476
c(Å)	22.60	22.17
$\alpha(^{\circ})$	90	90
$\beta(^{\circ})$	90	90
$\gamma(^{\circ})$	120	120

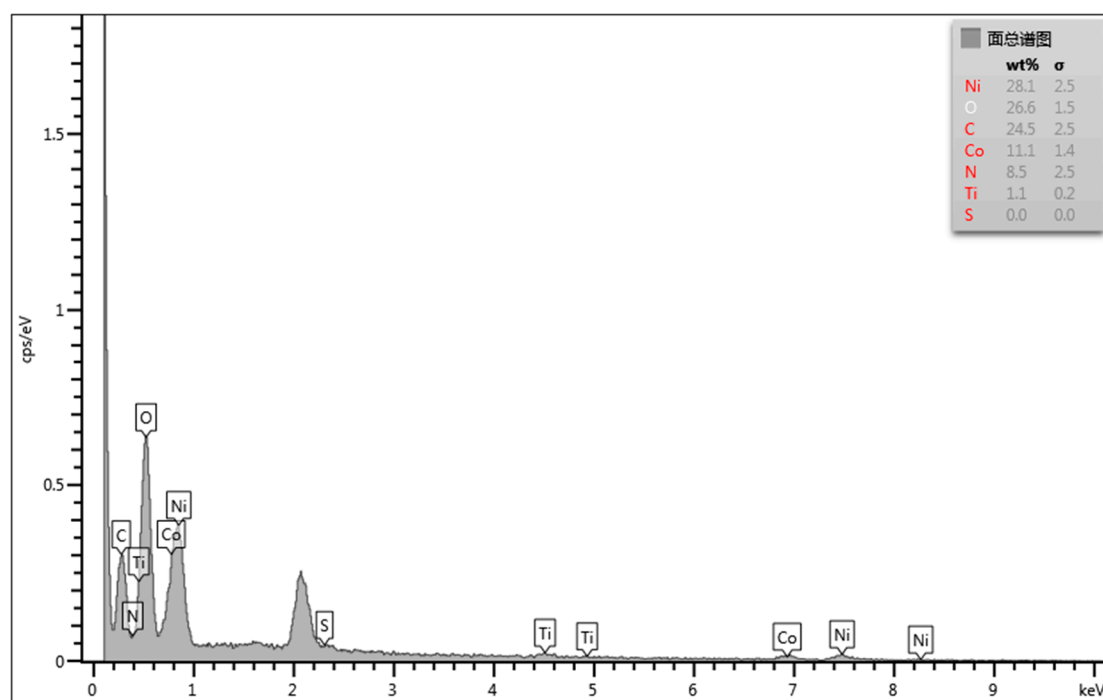


Figure S2. Tomic percentage (%) for $\text{Ni}_3\text{S}_2/\text{TiN}@$ Co-MOF/NF.

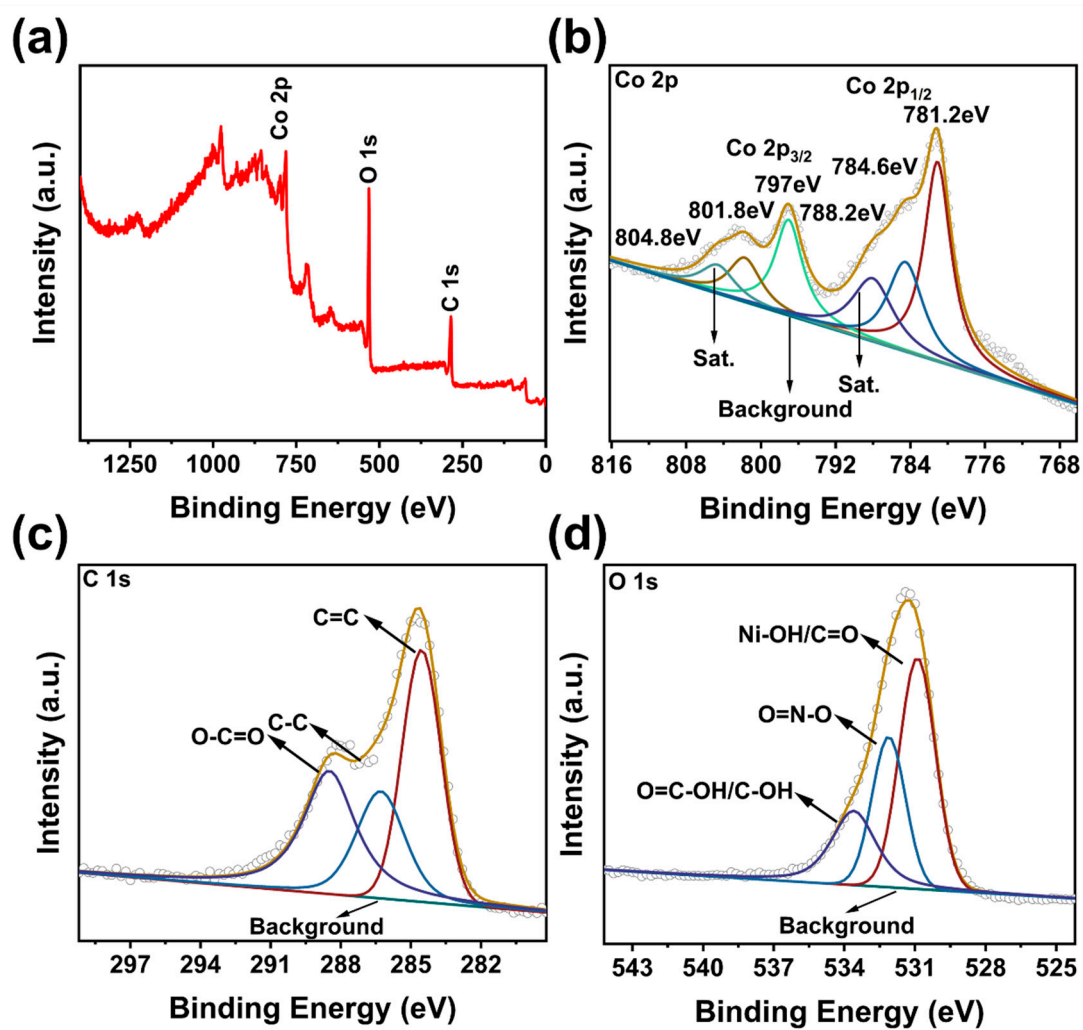


Figure S3. XPS of Co-MOF/NF. (a) Total Spectrum. (b) Co. (c) C. (d) O.

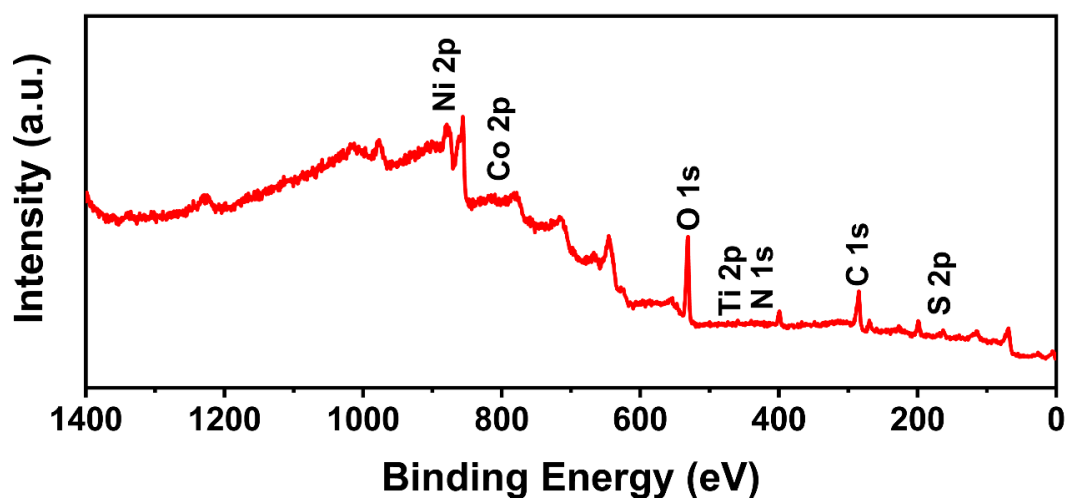


Figure S4. total spectrum of XPS of Ni₃S₂/TiN@Co-MOF/NF.

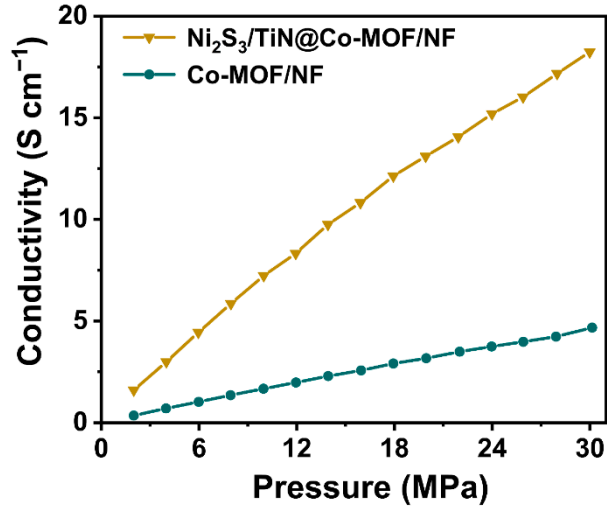


Figure S5. electrical conductivity of Ni₃S₂/TiN@Co-MOF/NF.

Table S2. Comparison of the performance of different electrodes under three electrode systems

Electrode	Specific Capacitance	Capacitance Retention	Energy Density	Ref.
NiCoCu0.5-OH	1122.97 F g ⁻¹ (1 Ⓢ g ⁻¹)	92.69% (10000)	52.66 Wh/kg	[75]
Ni-Co MOF/rGo	1320 F g ⁻¹ (4 mⓈ cm ⁻²)	89.49% (5000)	94.40 Wh/kg	[76]
Sm-MOF/rGO/PⓈ NI	1935.6 F g ⁻¹ (1 Ⓢ g ⁻¹)	87% (3000)	59.30 Wh/kg	[77]
NiCo ₂ O ₄ @NC/Co	1112 F g ⁻¹ (1 Ⓢ g ⁻¹)	90.7% (5000)	/	[78]
Zn-Co-O/NiCo-LDH	2275.2 F g ⁻¹ (1 Ⓢ g ⁻¹)	82.4% (5000)	44.50 Wh/kg	[79]
Ni ₃ S ₄ -NiS/rGO	1578 F g ⁻¹ (0.5 Ⓢ g ⁻¹)	91% (5000)	/	[80]
NiS@f-MWCNT	1966 F g ⁻¹ (1 Ⓢ g ⁻¹)	86.2% (10000)	74.10 Wh/kg	[81]
NiS _{NF} /CF@NiS _{NP} -3	1691 F g ⁻¹ (1 Ⓢ g ⁻¹)	91.2% (5000)	31.20 Wh/kg	[82]
Ni ₃ S ₄ -NiS/Ni	1940 F g ⁻¹ (1 Ⓢ g ⁻¹)	79.21% (3000)	/	[83]
NiS/g-C ₃ N ₄	2661.2 C g ⁻¹ (1 Ⓢ g ⁻¹)	96% (10000)	53.09 Wh/kg	[84]
Ni ₃ S ₂ /TiN@Co-MOF/NF	2648.8(1 Ⓢ g ⁻¹)	86.8% (5000)	97.80 Wh/kg	This work

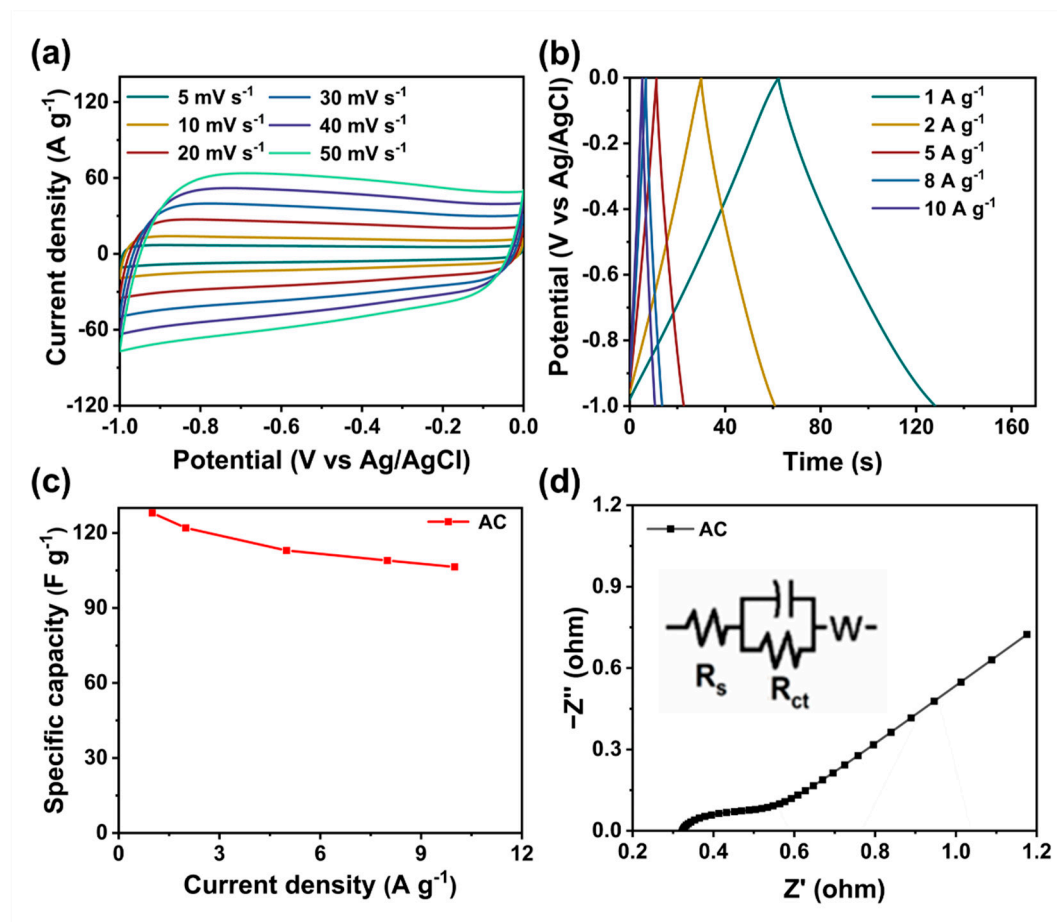


Figure S6. (a) CV of \odot C. (b) GCD of \odot C (c) Specific capacity retention of \odot V. (d) Nernquist curves of \odot C.

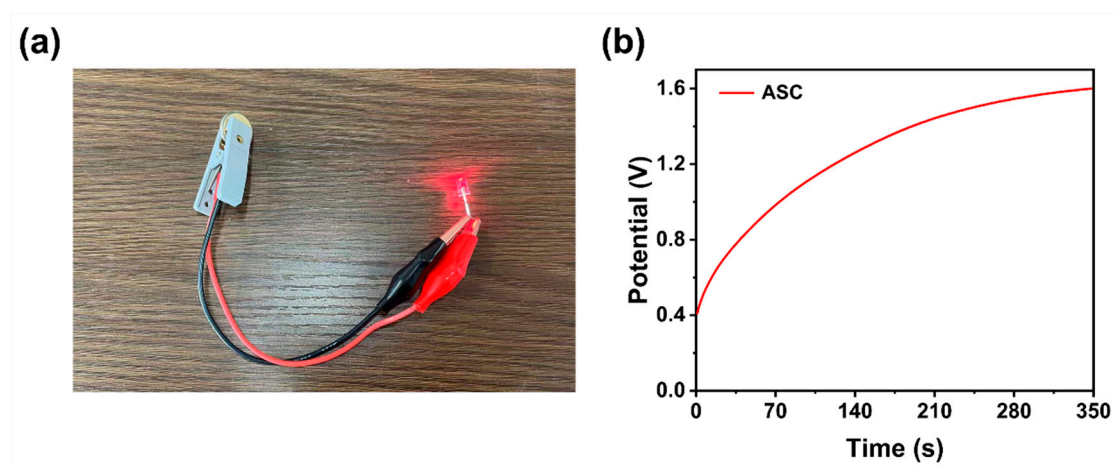


Figure S7. (a) \odot red led powered by the assembled \odot SC device lights up the photo for 120 seconds. (b) GCD curves for the charging of the \odot CS device.

References

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