Uniform P–Doped $MnMoO_4$ Nanosheets for Enhanced Asymmetric Supercapacitors Performance

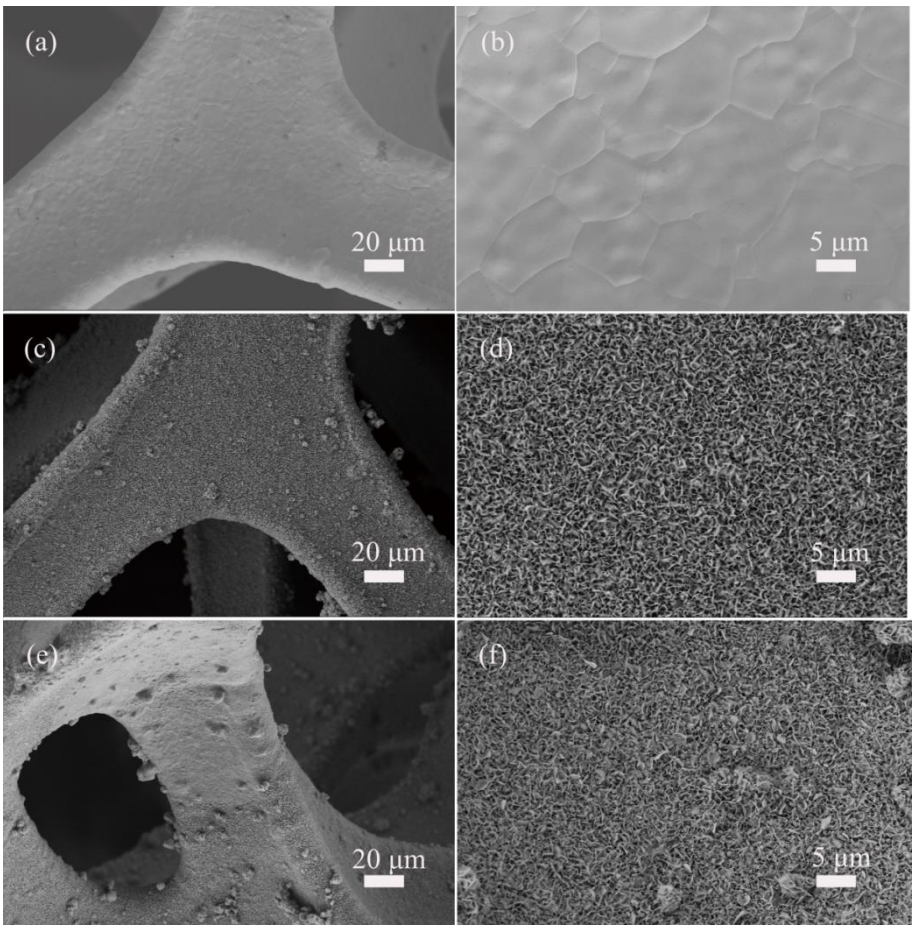

Figure S1. SEM images of (**a, b**) NF (**c, d**) $MnMoO_4{\cdot}H_2O$ and (**e, f**) P–$MnMoO_4$

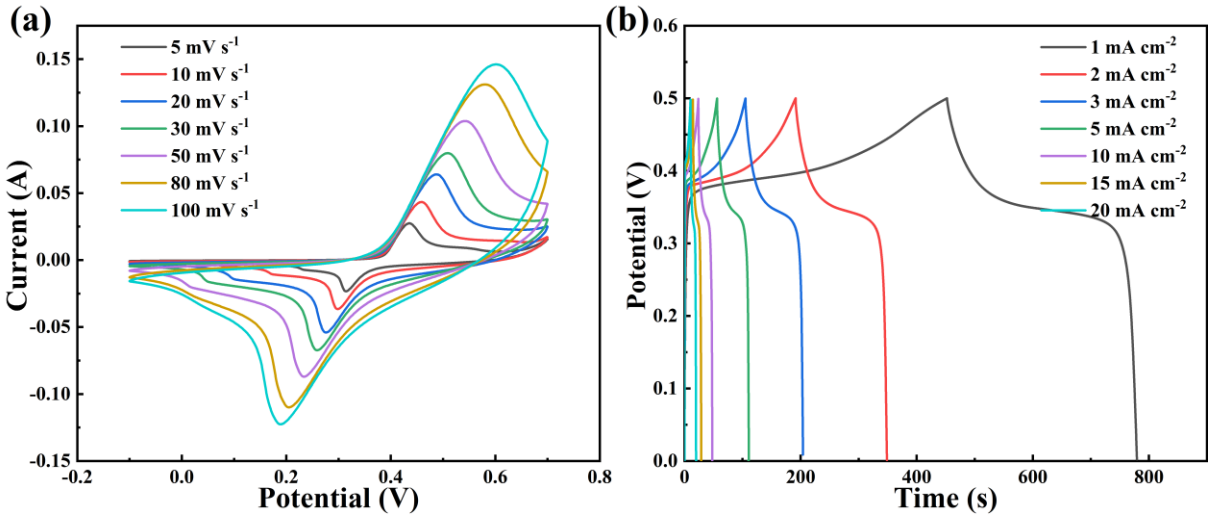

Figure S2. (**a**) CV curve of $MnMoO_4{\cdot}H_2O$; (**b**) GCD curve

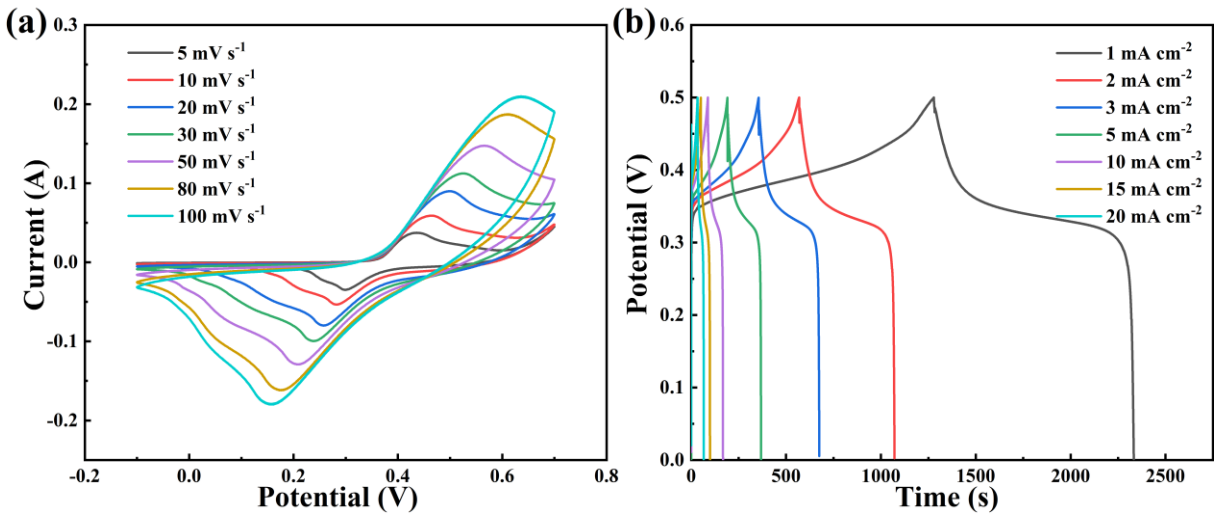

Figure S3. (**a**) CV curve of P–$MnMoO_4$; (**b**) GCD curve

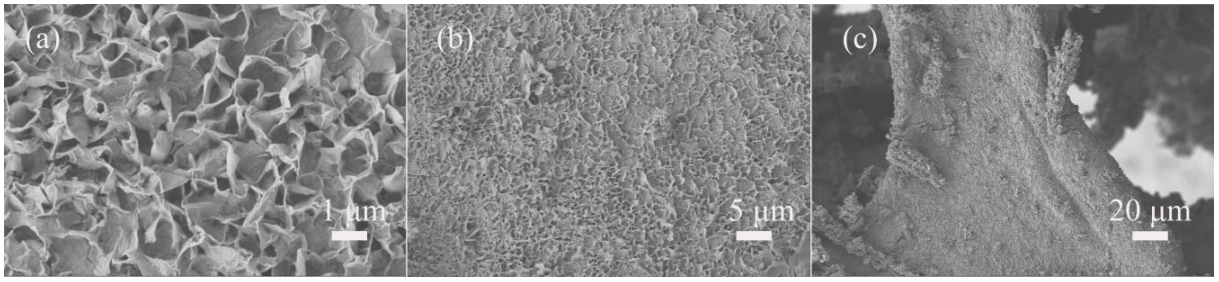

Figure S4. (**a–c**) SEM images of P–$MnMoO_4$ electrode material after charge/discharge cycle

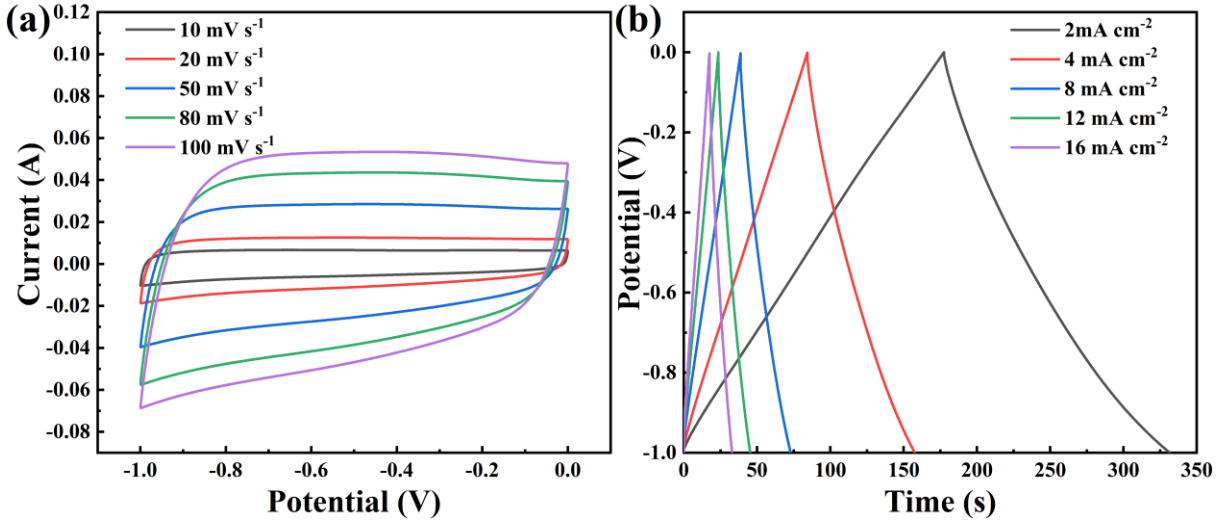

Figure S5. (**a**) CV curve of activated carbon; (**b**) GCD curve

Table S1. Performance comparison of hybrid supercapacitor based on $MnMoO_4$ electrode material with other reported devices.

Electrode material	Electrolyte	Specific capacitance	Energy density	Power density	Cyclic life	References
$MnMoO_4 \cdot nH_2O$	1 M NaOH	1271 F g^{-1}at 5 mV s^{-1}	31.6 Wh kg^{-1}	935 W kg^{-1}	84.5%,2000	[1]
$MnMoO_4$/NF	KOH/PVA	0.429 F cm^{-2}at 2 mA cm^{-2}	0.41 mWh cm^{-3}	0.41 mWh cm^{-3}	71.4%,10000	[2]
α−$MnMoO_4$ nanoparticles	2 M NaOH	200 F g^{-1}at 1.6 A g^{-1}	11 Wh kg^{-1}	100 W kg^{-1}	89.1%,1000	[3]
su−GC@ $MnMoO_4$	2 M KOH	528 F g^{-1}at 2 A g^{-1}	35.4 Wh kg^{-1}	223 W kg^{-1}	98.7%,5000	[4]
α−$MnMoO_4$/PANI	1 M Na_2SO_4	396 F g^{-1}at 5 mV s^{-1}			81%,500	[5]
$MnMoO_4$@MWCNT	1 M KOH	1017 F g^{-1}at 1 A g^{-1}	18.1 Wh kg^{-1}	362.4 W kg^{-1}		[6]
$MnMoO_4$/$MnCO_3$	2 M NaOH	1311 F g^{-1}at 1 A g^{-1}	116.8 Wh kg^{-1}	383 W kg^{-1}	85%,2000	[7]
$MnMoO_4$/$NiWO_4$	2 M KOH	598 F g^{-1}at 1 A g^{-1}			82%,5000	[8]
This Work (P−$MnMoO_4$)	2 M KOH	2.112 F cm^{-2}at1 mA cm^{-2} 1760 F g^{-1}at0.83 A g^{-1}	41.9 Wh kg^{-1}	666.8 W kg^{-1}	84.5%,10000	

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