Supporting Information

Te doped 1T/2H-$MoSe_2$ nanosheets with rich defects as advanced anode materials for high-rate sodium ion half/full batteries

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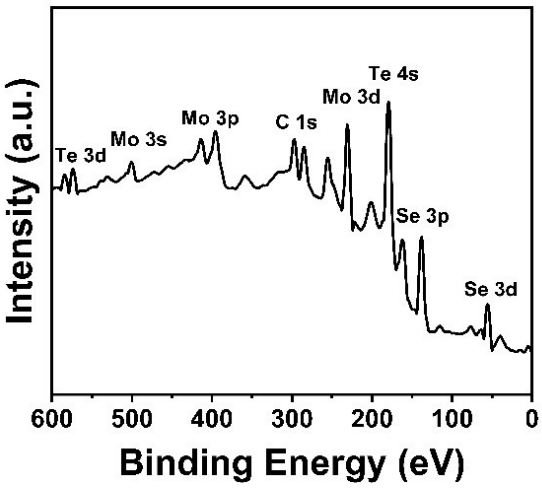

Fig. S1 XPS survey spectrum of Te-$MoSe_2$.

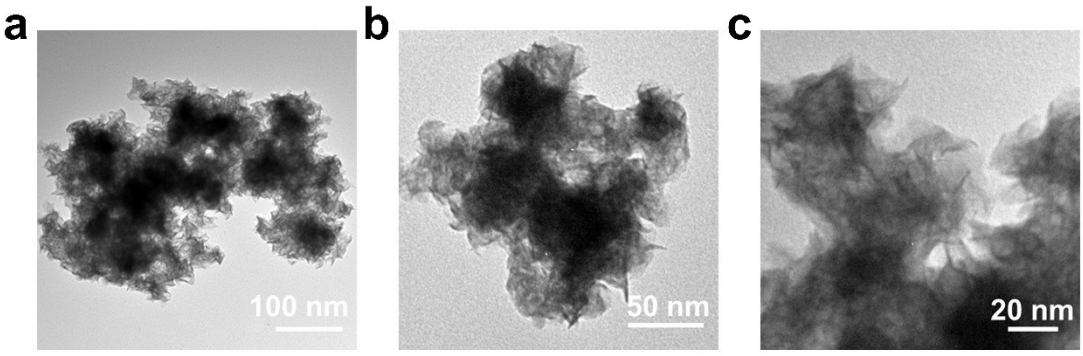

Fig. S2 TEM images of $MoSe_2$.

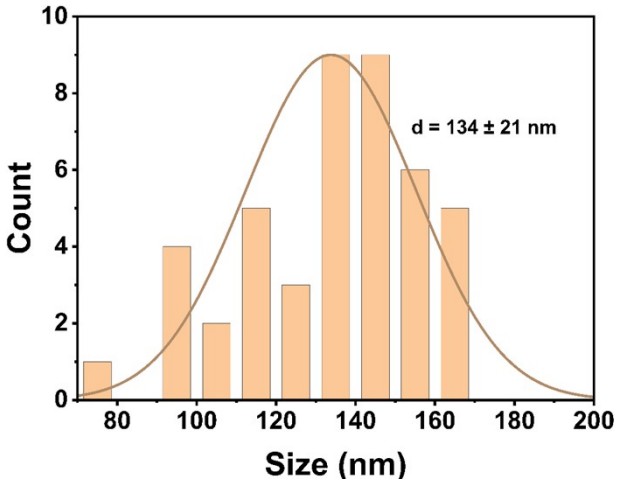

Fig. S3 Particle size distribution of Te-$MoSe_2$.

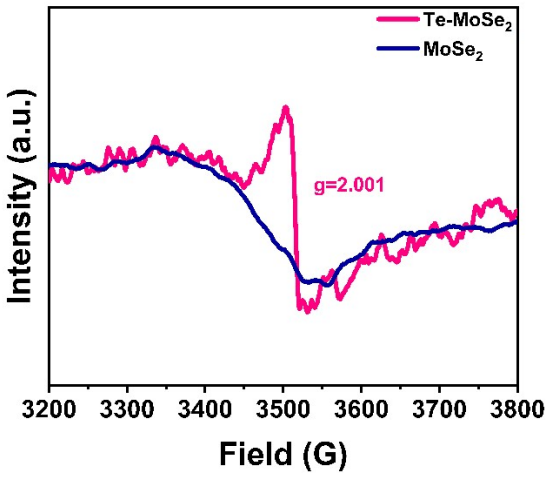

Fig. S4 EPR spectra of Te-$MoSe_2$ and $MoSe_2$.

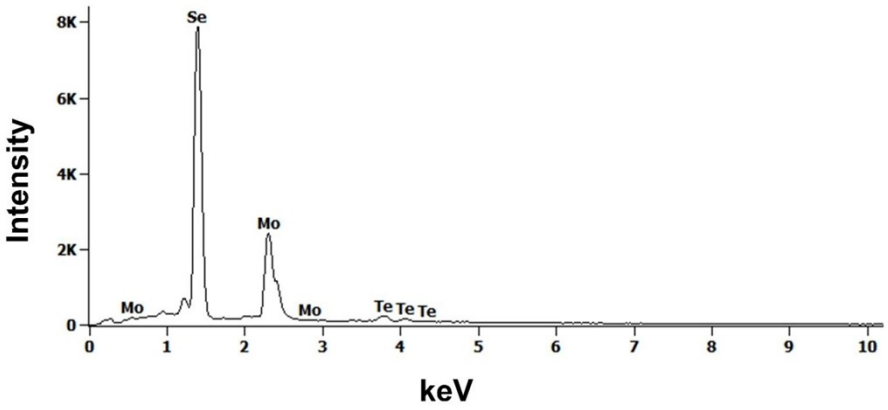

Fig. S5 Elemental spectrum of Te-$MoSe_2$.

Table S1 Elemental composition of Te-$MoSe_2$ obtained from ICP-AES test.

Element	Instrument reading (mg/L)	Atom (%)
Mo	7.07	37.53%
Se	10.11	53.66%
Te	1.01	5.34%

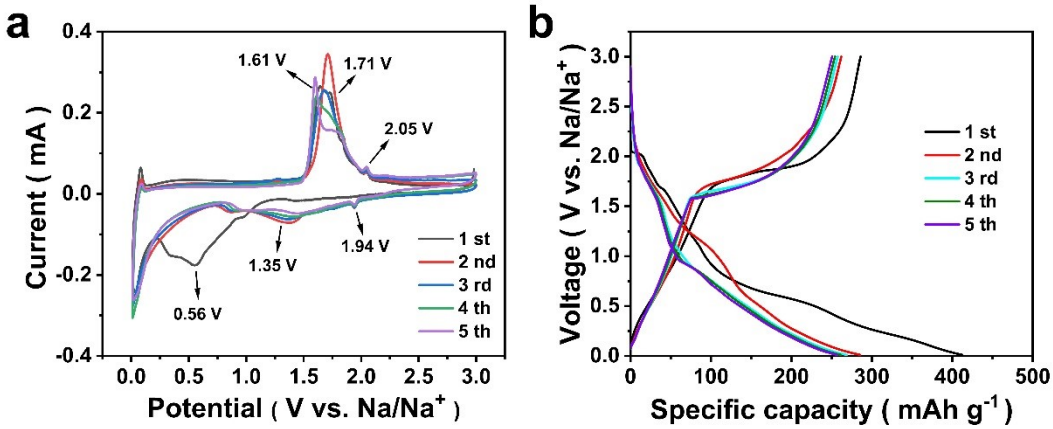

Fig. S6 Electrochemical properties of $MoSe_2$: (a) CV curves, (b) discharge/charge profiles.

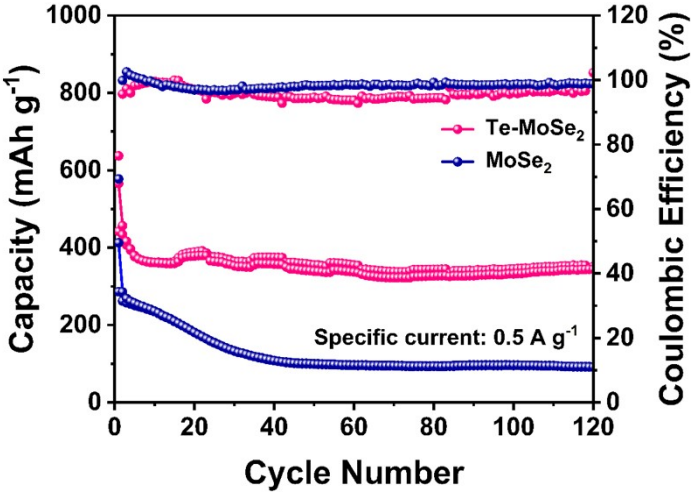

Fig. S7 Cycle performances of Te-$MoSe_2$ and $MoSe_2$ at 0.5 A g^{-1}.

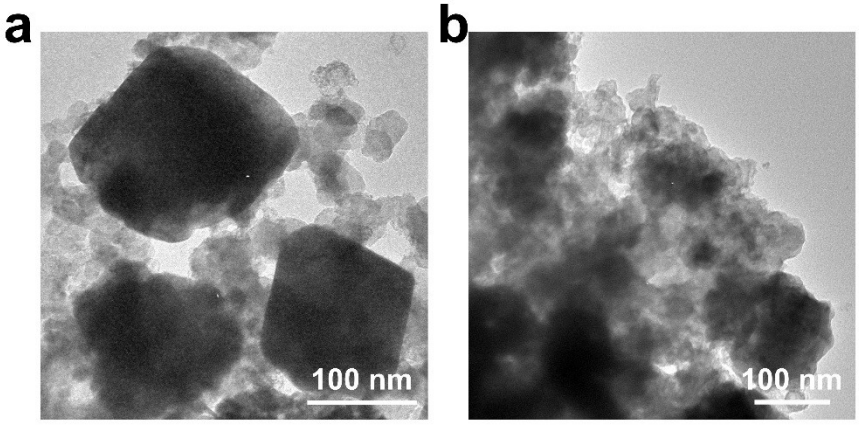

Fig. S8 TEM images of Te-$MoSe_2$ and $MoSe_2$ after 10 cycles.

Table S2 Reaction impedance derived from EIS spectra.

Electrode materials	R_s (Ω)	R_{SEI} (Ω)	R_{ct} (Ω)
Te-$MoSe_2$	3.98	0.38	6.67
$MoSe_2$	5.61	1.19	40.79

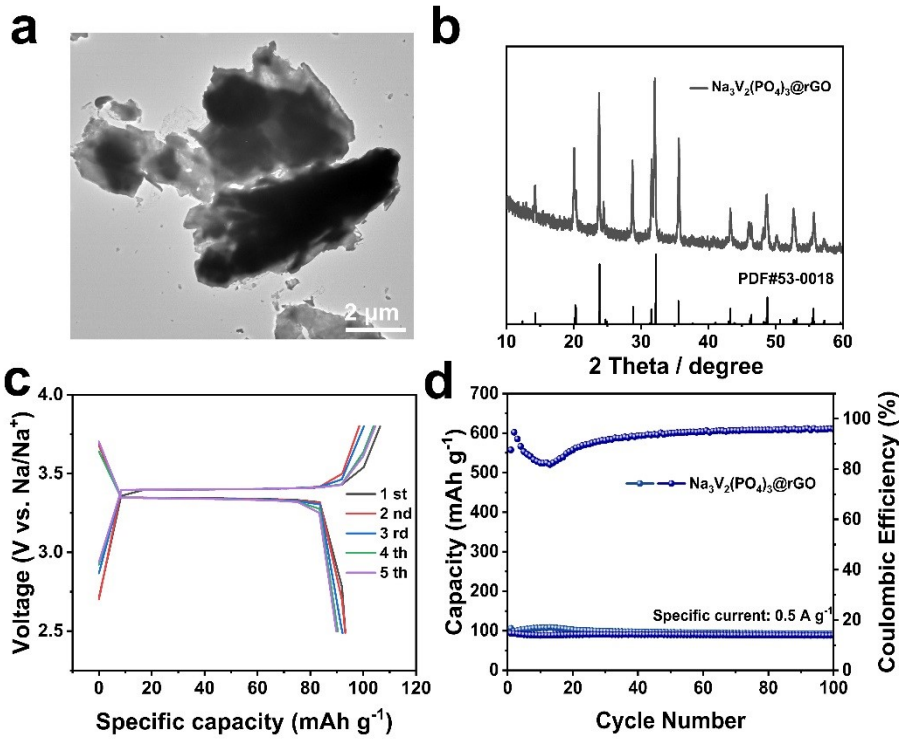

Fig. S9 (a) TEM image, (b) XRD pattern, (c) charge/discharge profiles at 0.5 A g^{-1}, and (d) cycle performance of $Na_3V_2(PO_4)_3$@rGO at 0.5 A g^{-1}.

Table S3 Comparison of electrochemical performances of transition metal selenides for Na^+ full cells.

Electrode materials	Specific Capacity (mAh g^{-1})	Current Density (A g^{-1})	Cycle Number	Ref.
rGO@$MoSe_2$/NAC//NVP@C	88	1.17	500	[1]
MFCHHS//NVP@C	77.2	0.1	200	[2]
$MoSe_2$/rGO//NVP	150.1	1	100	[3]
Sn-$MoSe_2$@GN//NVPOF/C	181.2	0.1	200	[4]
$MoSe_2$/N,P-rGO//NVP/C	221.6	2	200	[5]
$MoSe_2$@NC@rGO-200//NVP/C	207.8	0.1	100	[6]
This work	239.6	2	900	

References

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