Supporting Information

Construction of a ternary MoO_2/Ni/C hybrid towards lithium-ion batteries as high-performance electrode

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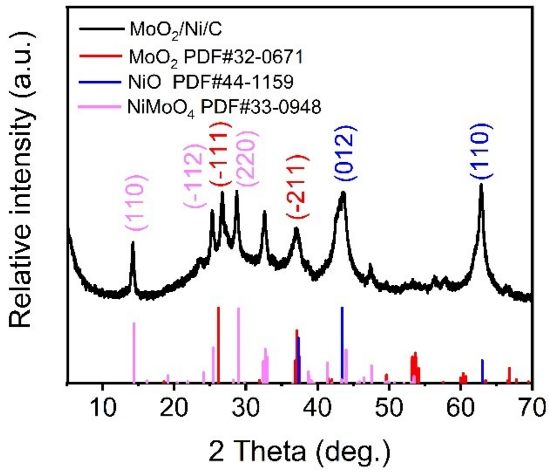

Figure. S1. XRD pattern of the MoO_2/Ni composite.

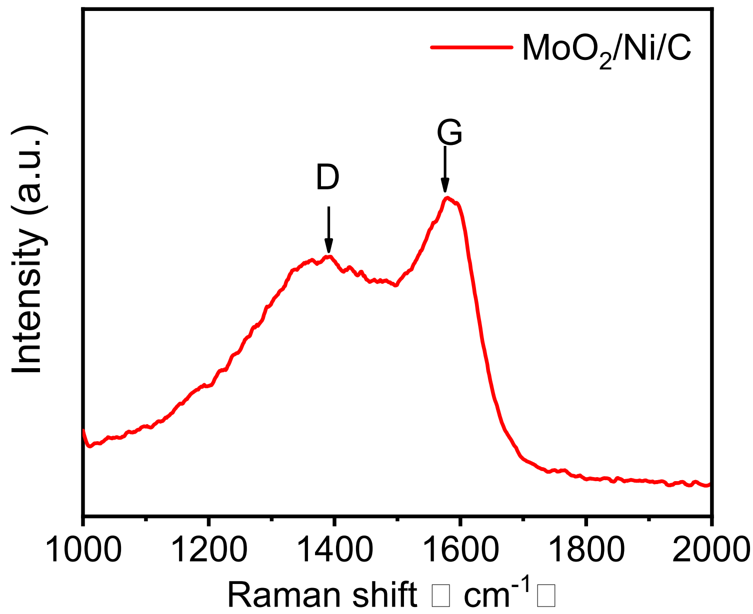

Figure. S2. Raman spectrum of MoO_2/Ni/C composite.

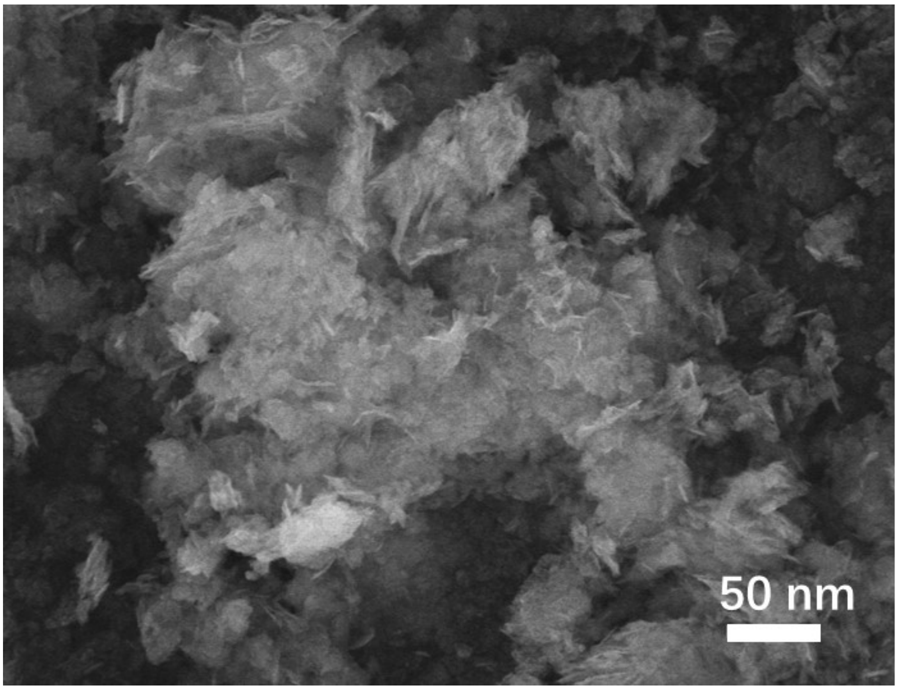

Figure. S3.SEM images of the synthesized MoO_2/Ni composite.

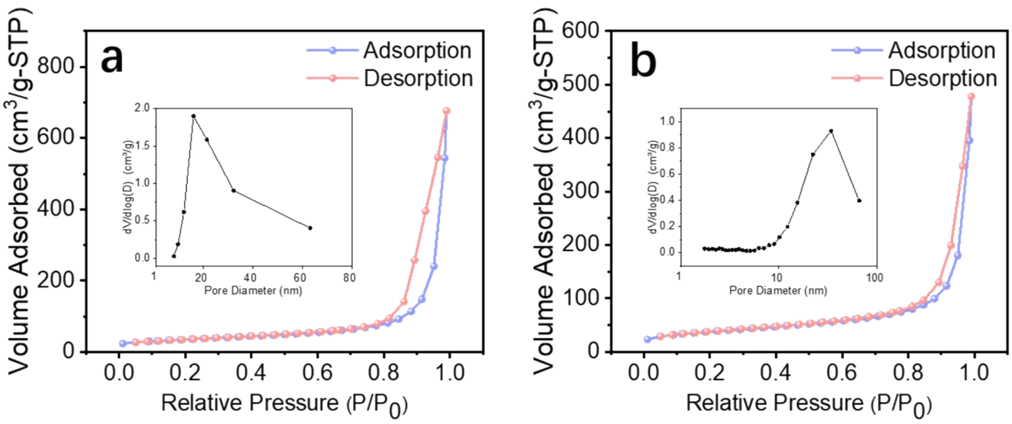

Figure. S4.N_2 adsorption-desorption isotherm and pore size distribution curves of (a) MoO_2/Ni/C and (b) MoO_2/Ni.

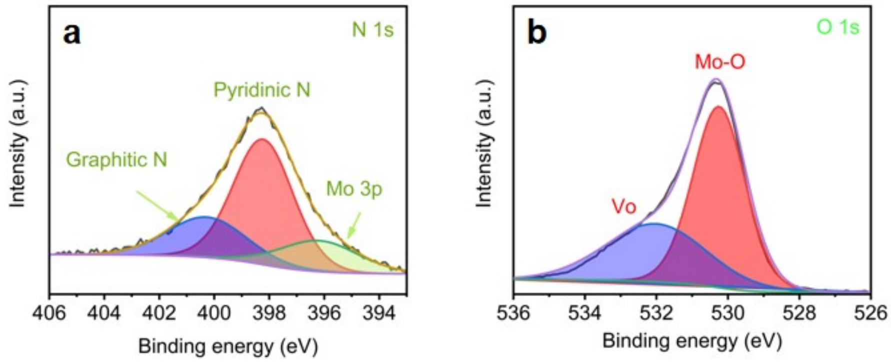

Figure. S5. High-resolution XPS spectra of (a) N 1s and (b) O 1s.

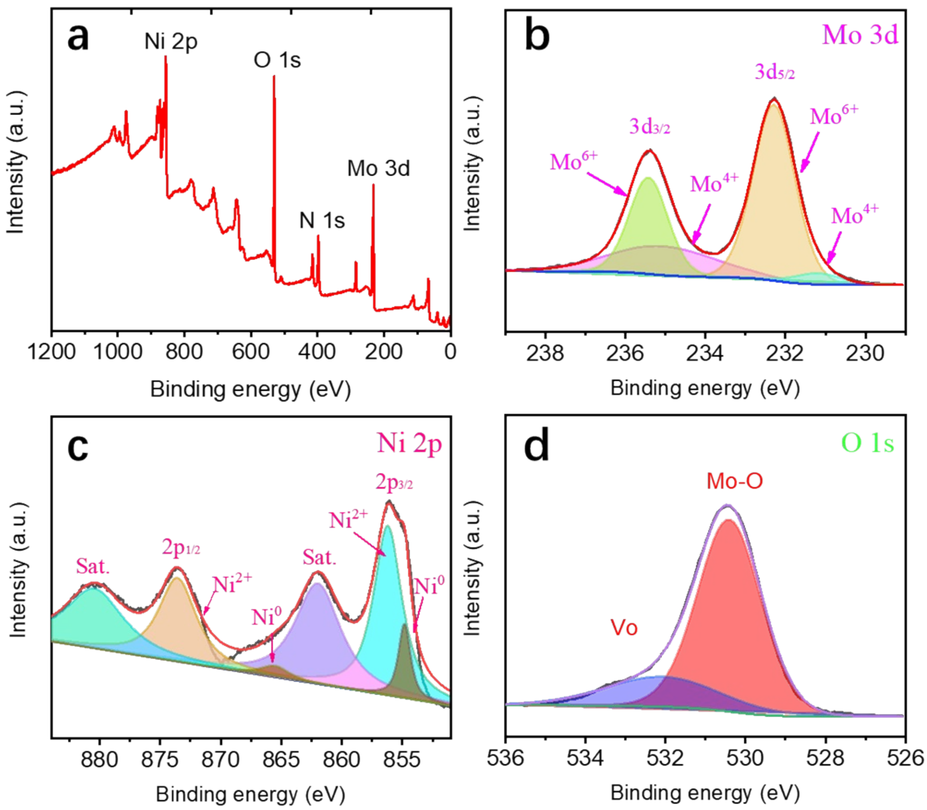

Figure. S6. (a) XPS survey scan of MoO_2/Ni; high-resolution XPS spectra of (b) Mo 3d, (c) Ni 2p and (d) O 1s.

Table. S1. Comparison of electrochemical performance of MoO_2-based electrodes prepared by different methods.

Samples	Methed	Initial Coulombic effifiency (%)	Cycle number	Current density (mAg^{-1})	Capacity ($mA\ hg^{-1}$)	Ref.
MoO_2/Ni/C	Solution and annealing	71.8	200	200	807	This work
MoO_2/ZnSe@N-C	selenization	~65.0	100	100	807	1
MoO_2NP@rGO	self-templating and calcination	~60.0	350	1000	641	2
(MoO_3NRs/MoO_2NPs)@C	Direct current (DC) arc-discharge plasma technique	90.0	100	100	840	3
3D MoO_2/NC	Solution and annealing	~83.8	250	100	912	4
CMAS-650	Solution and annealing	76.3	100	500	916	5
MoO_2-SnO_2-C	facial ball milling	76.5	100	1000	627.8	6
ZnO-MoO_2/C	self-templating	~56.0	150	100	860	7
MoO_2/NC NPs	dual-annealing	84.1	200	500	1017	8
porous MoO_2/C hybrid microrods	sol-gel method	52.6	100	1000	374	9

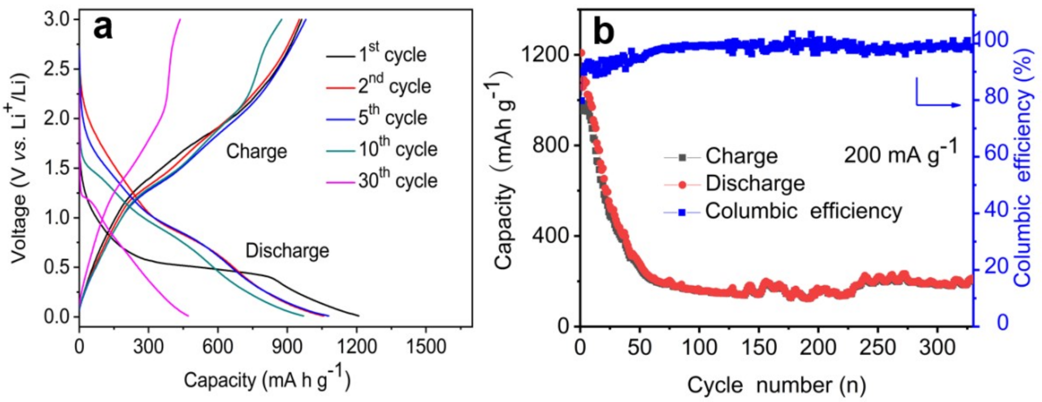

Figure. S7. Cycling performance of the MoO_2/Ni electrodes at 200 mA g^{-1}.

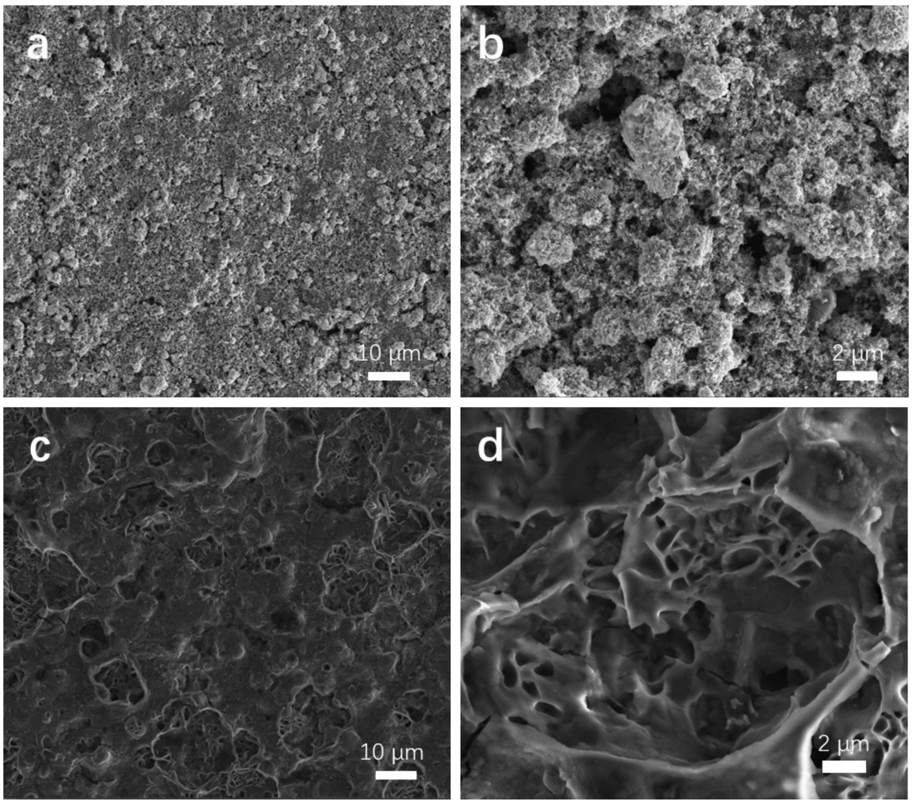

Figure. S8. The surfaceSEM images of the MoO_2/Ni/C (a-b) freshand (c-d) after the 50th charge and discharge processes.

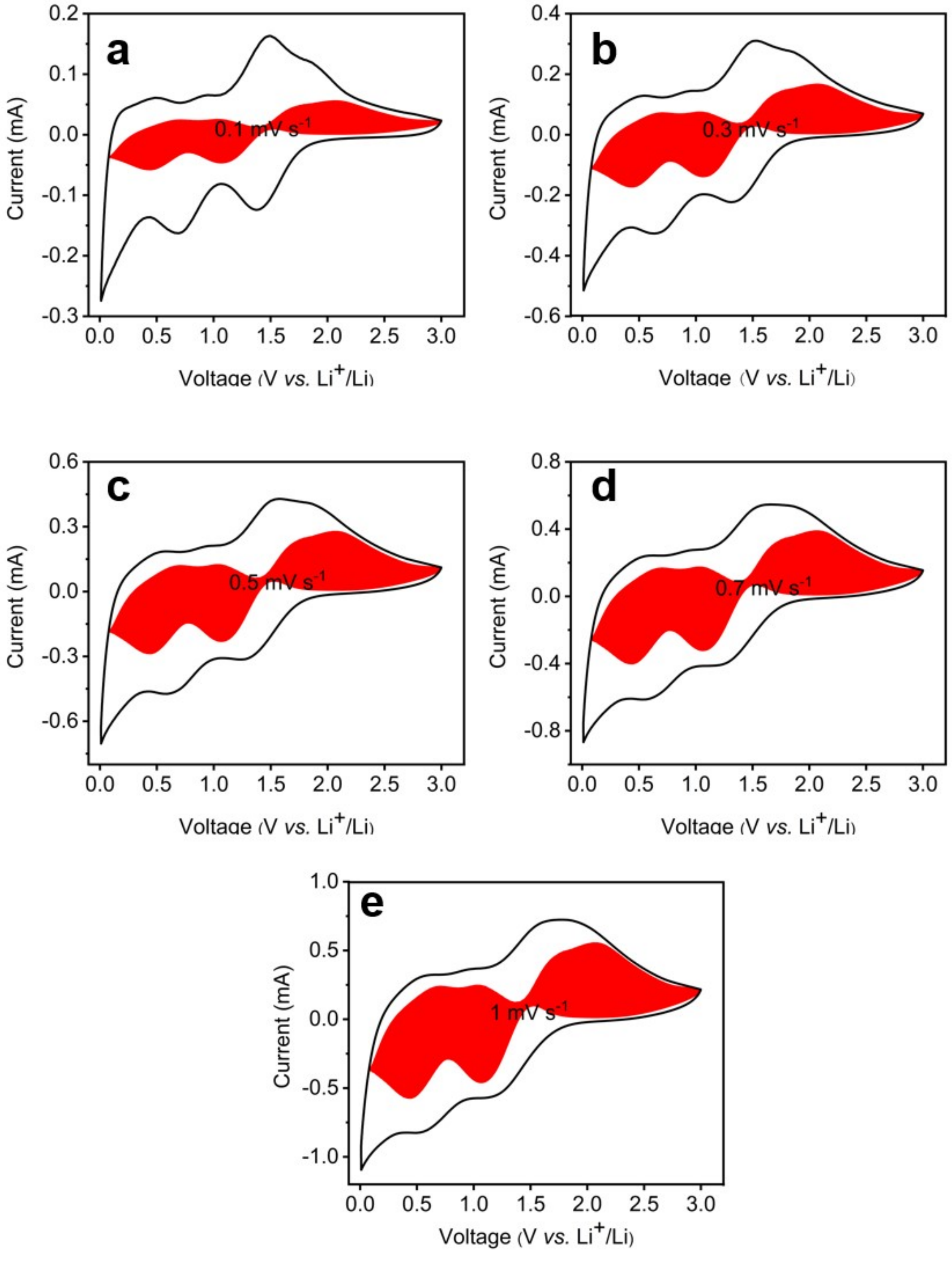

Figure. S9.CV profiles with shaded portion showing the capacitive contribution at 0.1, 0.3, 0.5, 0.7 and 1 mV s^{-1}.

References

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