Supporting Information

Three-dimensionally ordered mesoporous multicomponent (Ni, Mo) metal oxide/N-doped carbon composite with superior Li-ion storage performance

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KEYWORDS: nanostructured materials, mesoporous materials, $NiMoO_4$, lithium-ion batteries, spray pyrolysis

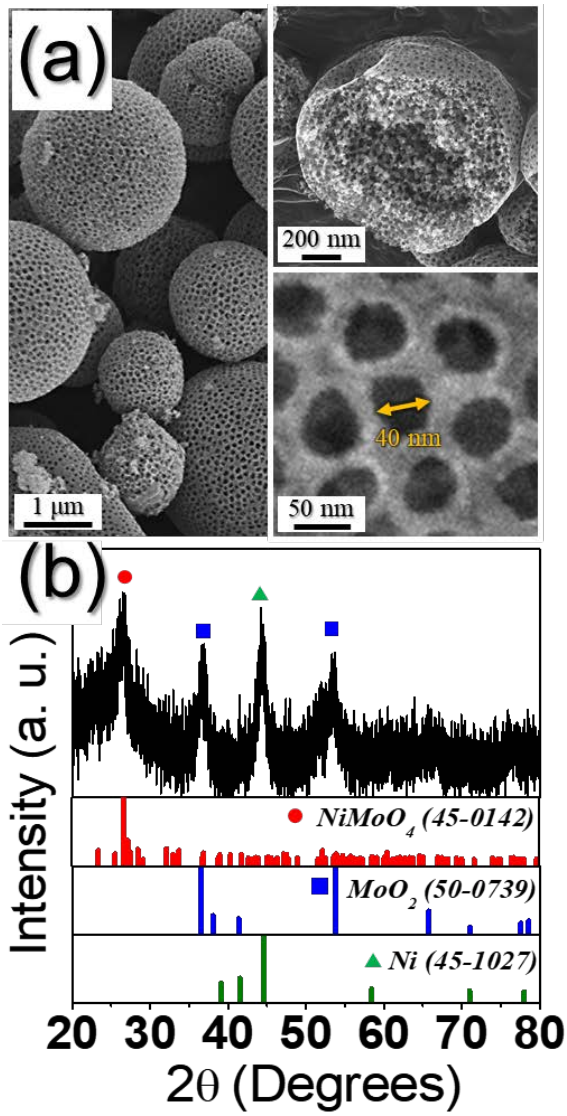

Fig. S1. (a) SEM images and (b) XRD pattern of mesoporous Ni-Mo-C composite microspheres.

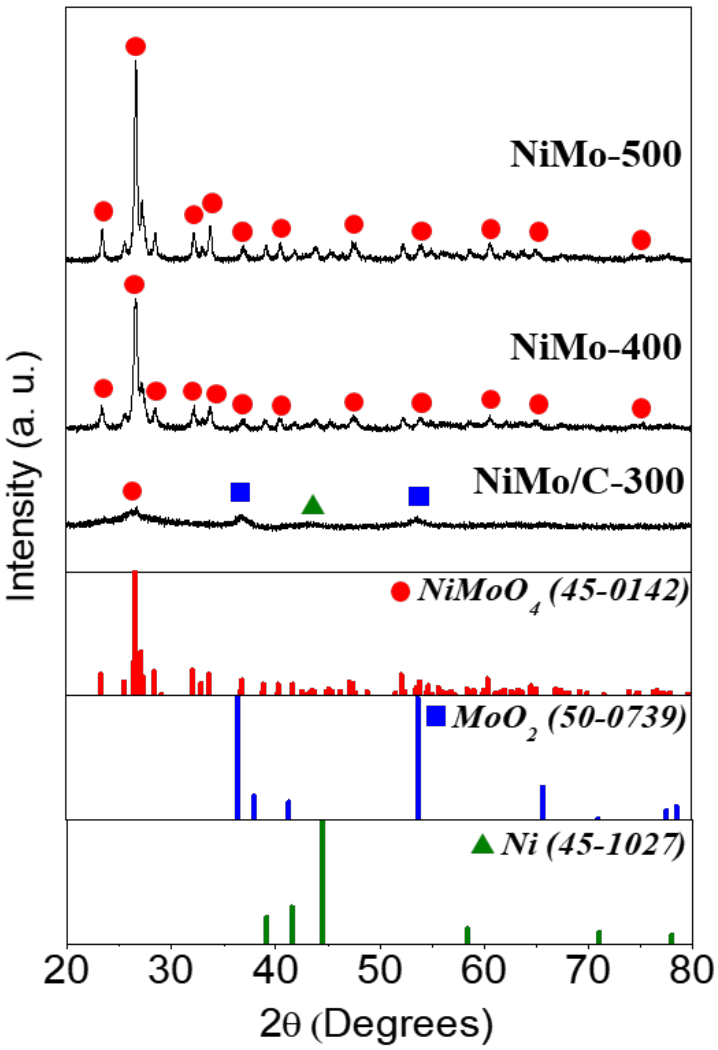

Fig. S2. XRD patterns of NiMo/C-300, NiMo-400, and NiMo-500.

Table S1. Elemental analysis result of NiMo/C-300.

Sample	Carbon (wt%)	Nitrogen (wt%)
NiMo/C-300	15.3	2.4

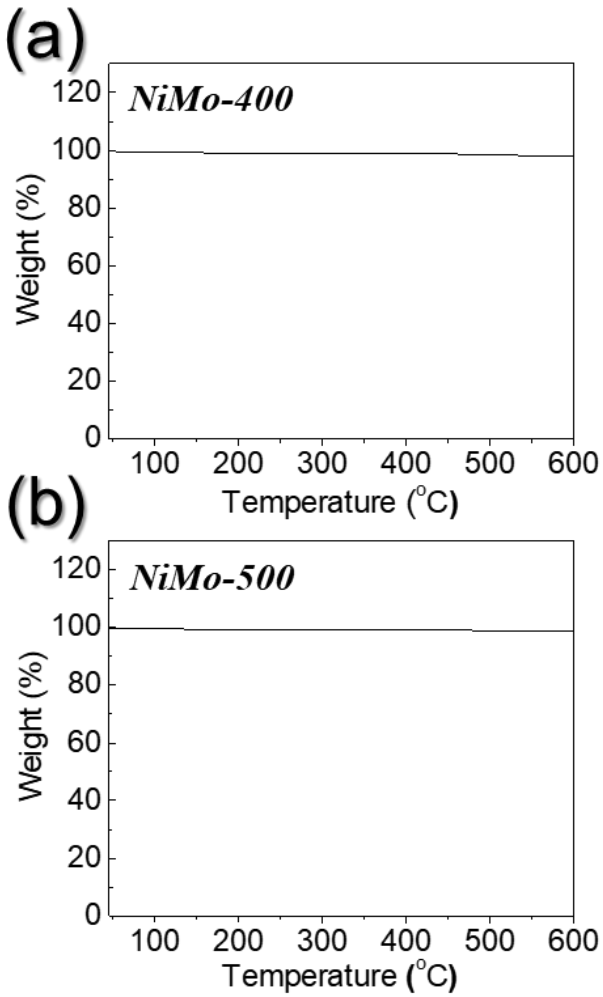

Fig. S3. TG curves of (a) NiMo-400 and (b) NiMo-500.

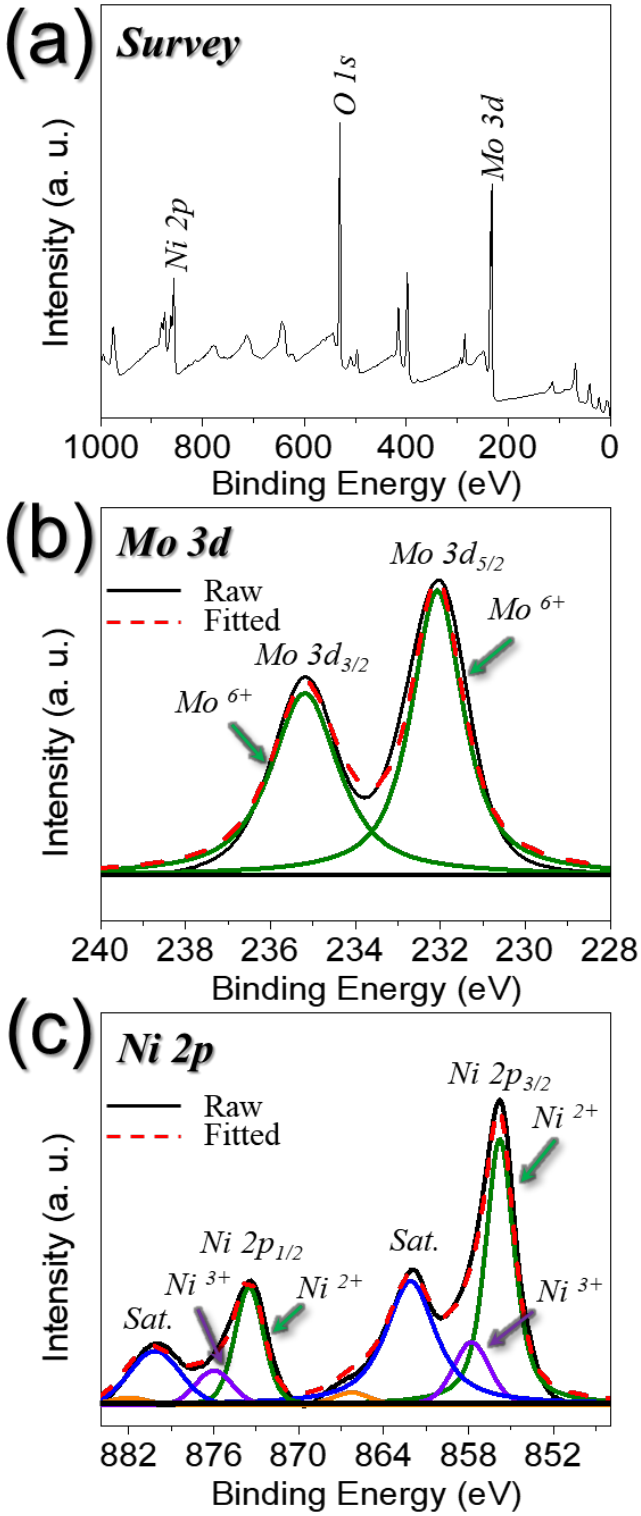

Fig. S4. (a) XPS survey spectrum and core-level XPS spectra of (b) Mo 3d, and (c) Ni 2p of NiMo-400.

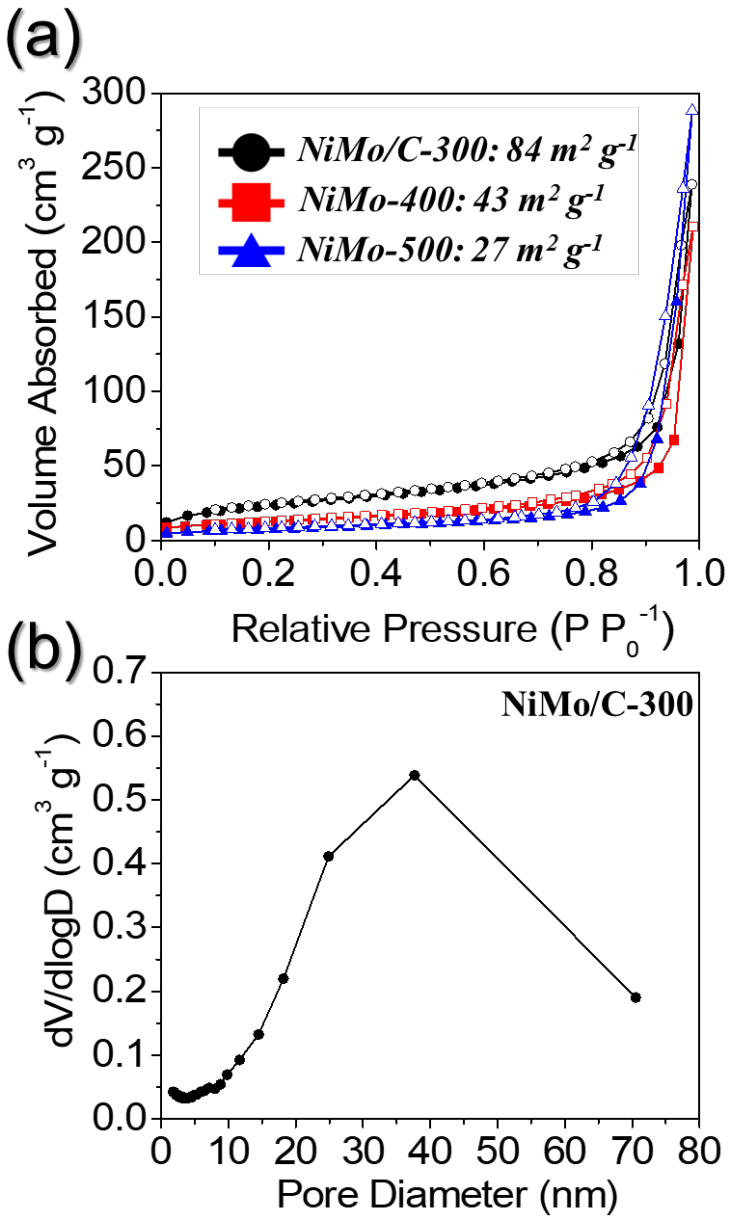

Fig. S5. (a) N_2 adsorption-desorption isotherms measured at 77 K and (b) pore distribution of NiMo/C-300, NiMo-400, and NiMo-500.

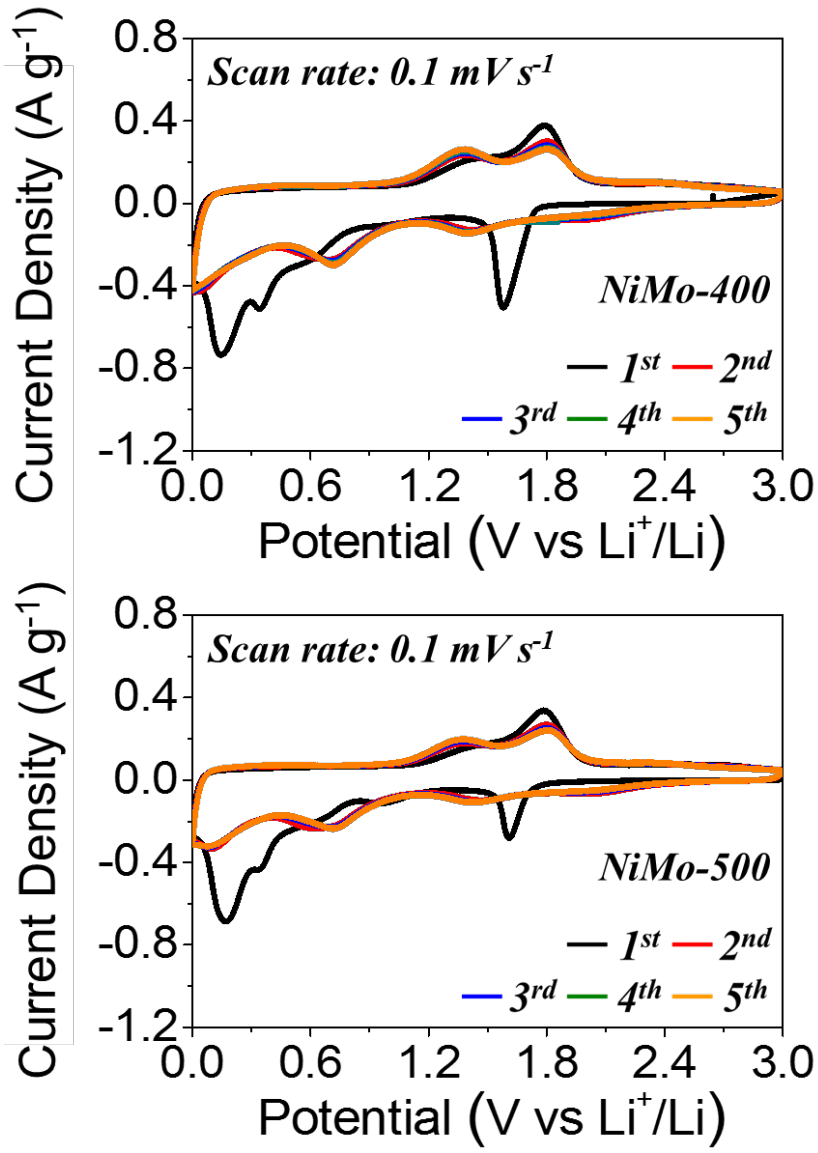

Fig. S6. CV curves of (a) NiMo-400 and (b) NiMo-500.

Table S2. Electrochemical properties of the Ni,Mo materials with various structures as anode materials for LIBs.

Materials	Voltage range (V)	Current Rate [mA h g^{-1}]	Initial C_{dis}/C_{cha} [mA h g^{-1}]	Final discharge capacity [mA h g^{-1}]	Cycle number	Ref.
3-DOM $NiMoO_4$-MoO_2-Ni/N-doped C microsphere	***0.001-3***	***1000***	***1458/1050***	***693***	***1000***	***This work***
$NiMoO_4$ yolk-shell spheres	1.5-3	1000	1643/1265	1292	200	(S1)
Network-like porous $NiMoO_4$ nanoarchitecture	0.005-3	200	1376.96/ 1167.65	1028.43	120	(S2)
Hierarchical $NiMoO_4$ nanowire arrays	0.005-3	200	1308.29/108 8.49	867.86	150	(S3)
Honeycomb-like $NiMoO_4$ ultrathin nanosheet arrays	0.01-3	1000	~1210/~880	680	200	(S4)
$NiMoO_4$ nanorods	1.2-3.2	50	~345/~220	~105	50	(S5)
Three-dimensional TiO_2 nanowire@$NiMoO_4$ ultrathin nanosheet core-shell arrays	0.01-3	200	733.2/457.5	446.6	120	(S6)
Porous worm-like $NiMoO_4$ carbon fiber	0.01-3	50	1300/~860	410	30	(S7)
Hierarchical free-standing $NiMoO_4$/reduced graphene oxide membrane	0.05-3	250	1553.3/1075. 3	945	100	(S8)
$NiMoO_4$ microspheres with numerous empty nanovoids	0.001-3	1000	1654/1207	1020	500	(S9)
Hierarchical porous NiO/$NiMoO_4$ heterostructure	0.01-3	200	1508/1282	1314	100	(S10)

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