Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

SUPPORTING INFORMATION

Sodium modified molybdenum sulfide via molten salts electrolysis as an anode material for high performance sodium-ion batteries

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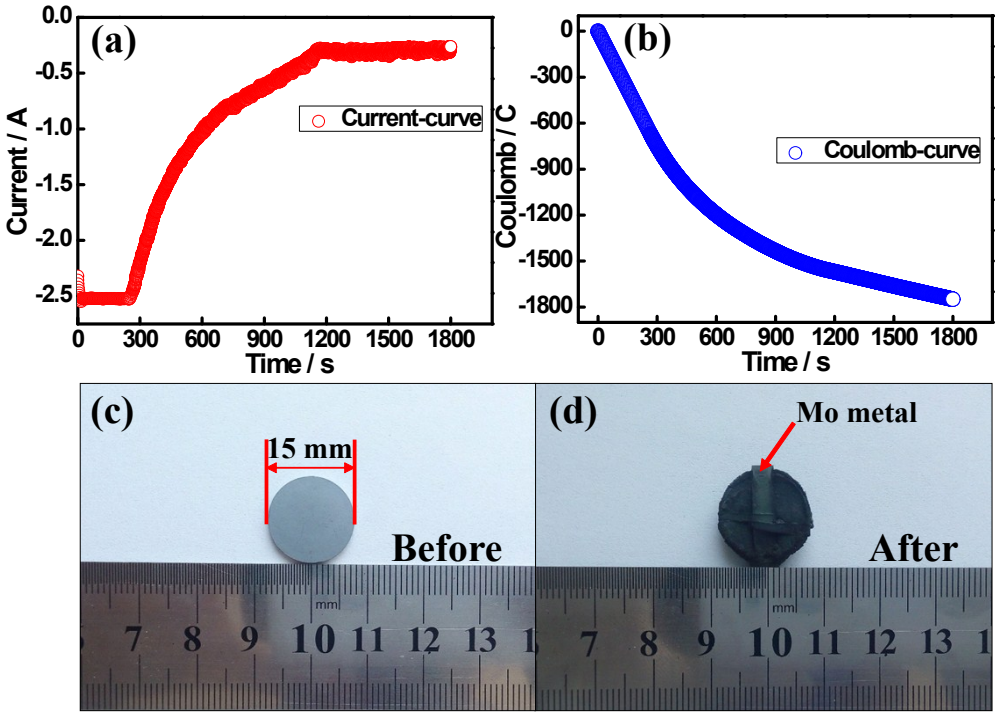

Fig. S1 (a) Typical current-curve recorded during the potentiostatic electrolysis of MoS_2 pellet at a potential of -1.1 V *vs.* Ag/AgCl in molten NaCl at 850 ℃ for 30 min. (b) Typical coulomb-curve recorded during the potentiostatic electrolysis. (c) Optical image of MoS_2 pellet before electrolysis. (d) Optical image of MoS_2 pellet after electrolysis.

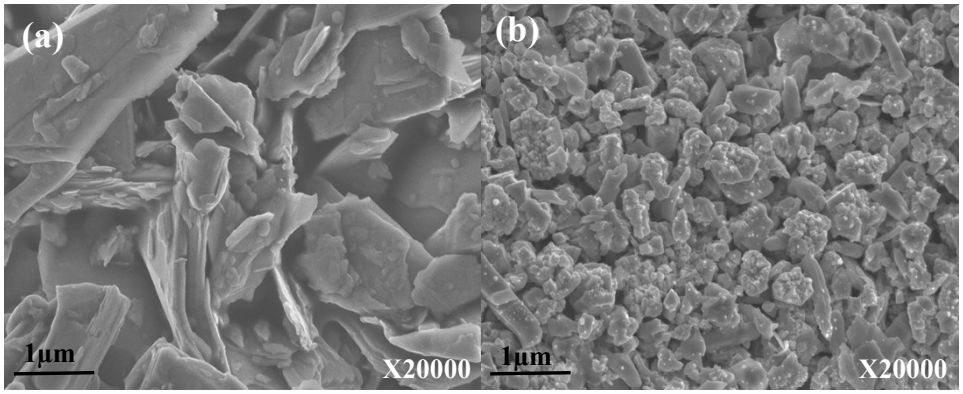

Fig. S2 (a) Typical SEM image of original MoS_2. (b) The electrolytic products from MoS_2 pellets at a potential of -1.1 V *vs.* Ag/AgCl.

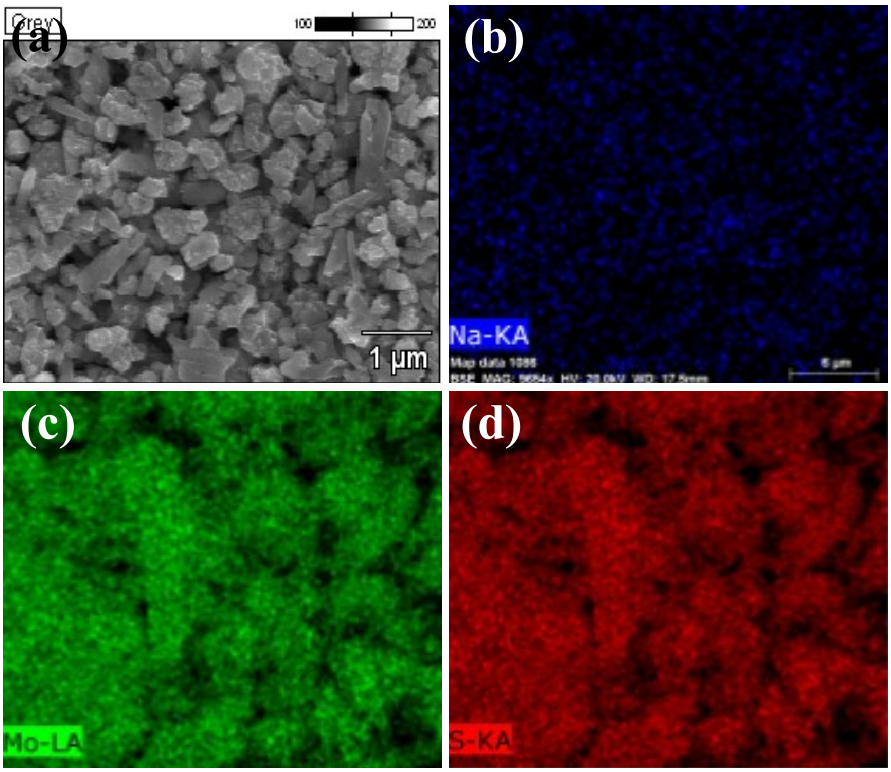

Fig. S3 (a) Elemental mapping images of sodium molybdenum sulfide nanoparticles. (b) Elemental mapping image of Na. (c) Elemental mapping image of Mo. (d) Elemental mapping image of S.

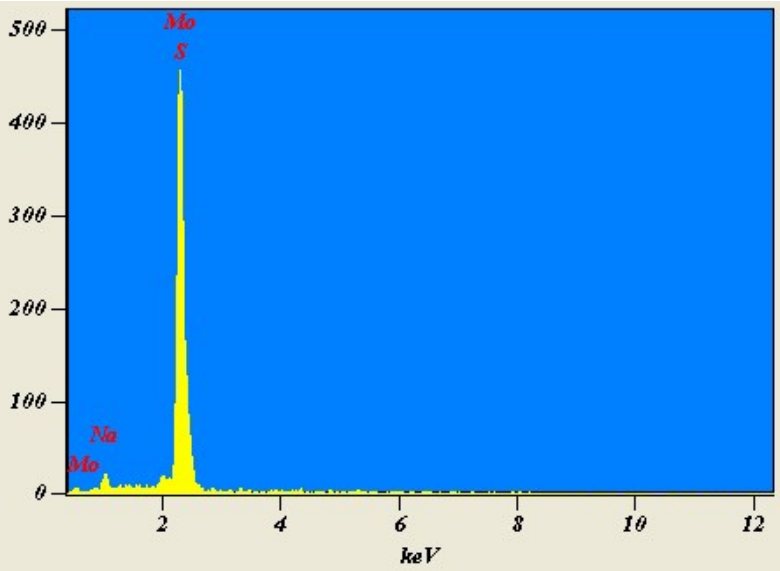

Fig. S4 EDS analyses of sodium molybdenum sulfide nanoparticles.

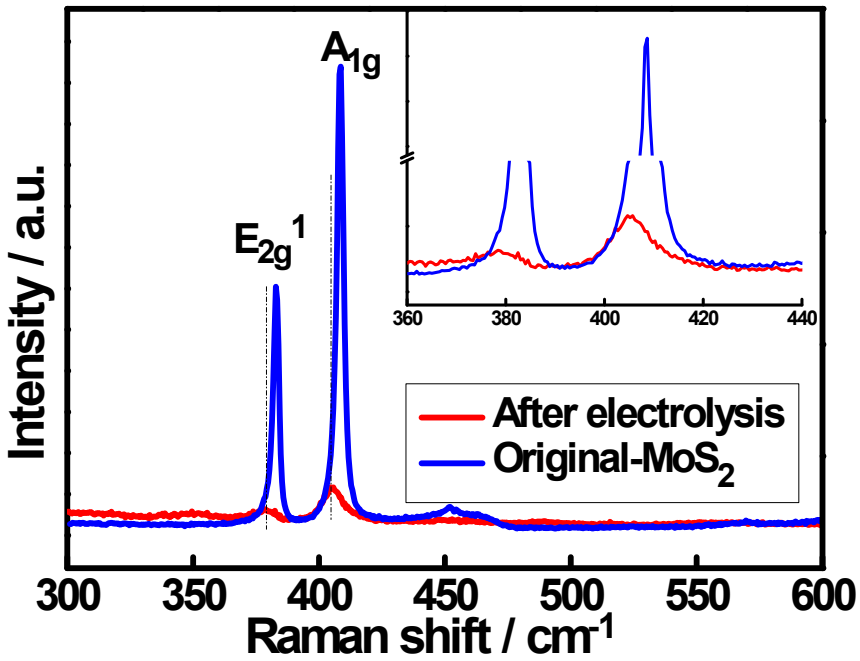

Fig. S5 Raman spectrums of original MoS_2 and sodium molybdenum sulfide nanoparticles.

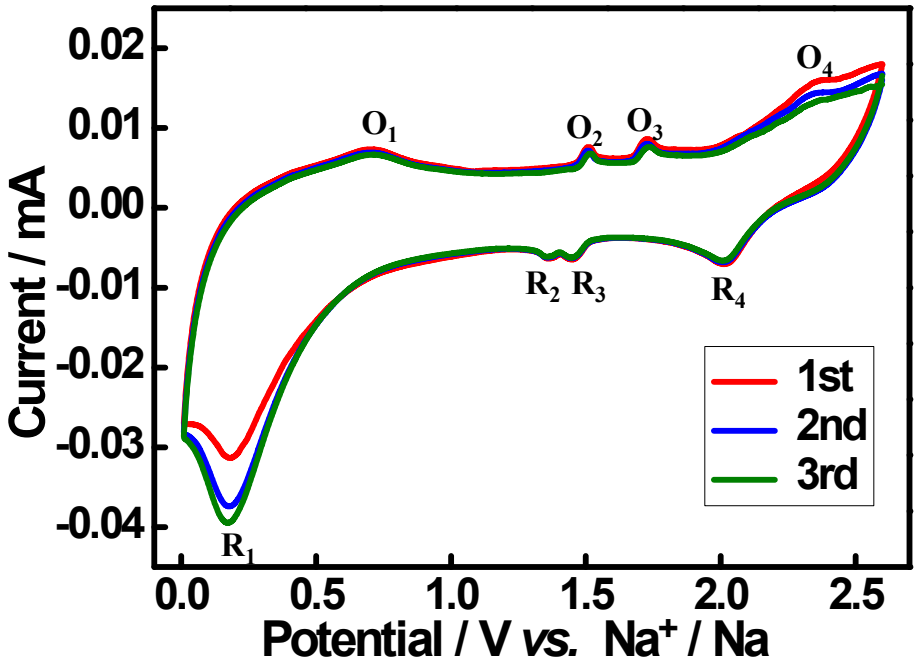

Fig. S6 Cyclic voltammograms of the Na/Na-Mo-S battery at a scan rate of 0.1 mV s^{-1} for potential range of 0.01-2.6 V *vs.* Na^+/Na.

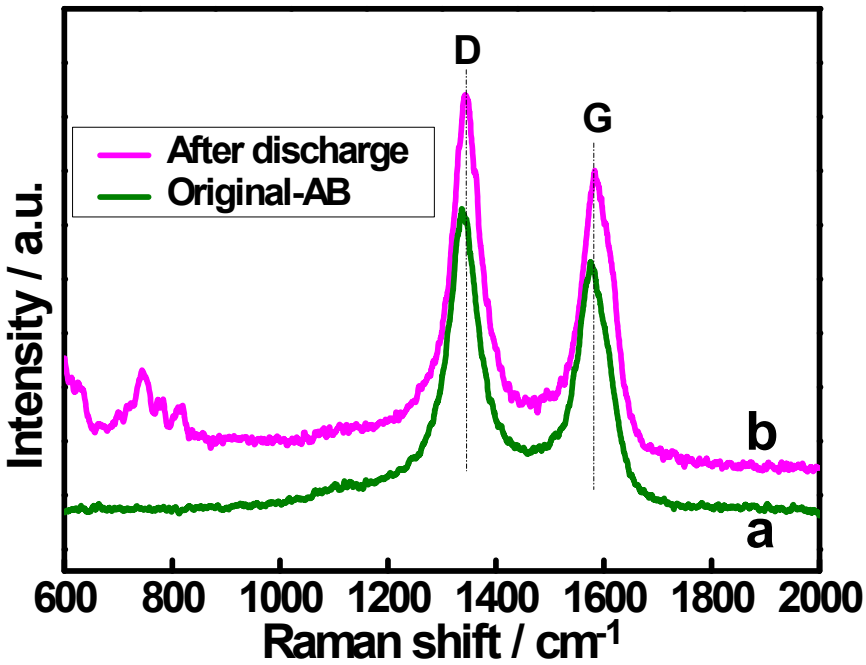

Fig. S7 Raman spectrums of acetylene black (AB). (a) Original-AB. (b) After a discharge

process to 0.01 V *vs.* Na^+/Na.

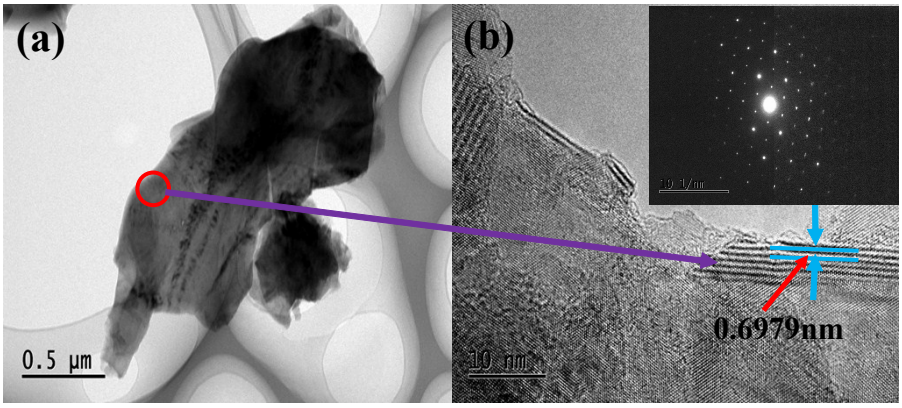

Fig. S8 (a) TEM image and (b) HRTEM image of Na/Na-Mo-S battery after a discharge process to 0.01 V *vs.* Na^+/Na and corresponding SAED pattern in inset at upper right corner.

Table S1 EDS analyses results of sodium molybdenum sulfide nanoparticles.

Element	wt. %	at. %
Na	3.79	9.37
Mo	67.92	40.28
S	28.29	50.35
Total	100	100