Electronic Supplementary Information

Methyl-functionalized MoS_2 nanosheets with reduced lattice breathing for enhanced pseudocapacitive sodium storage

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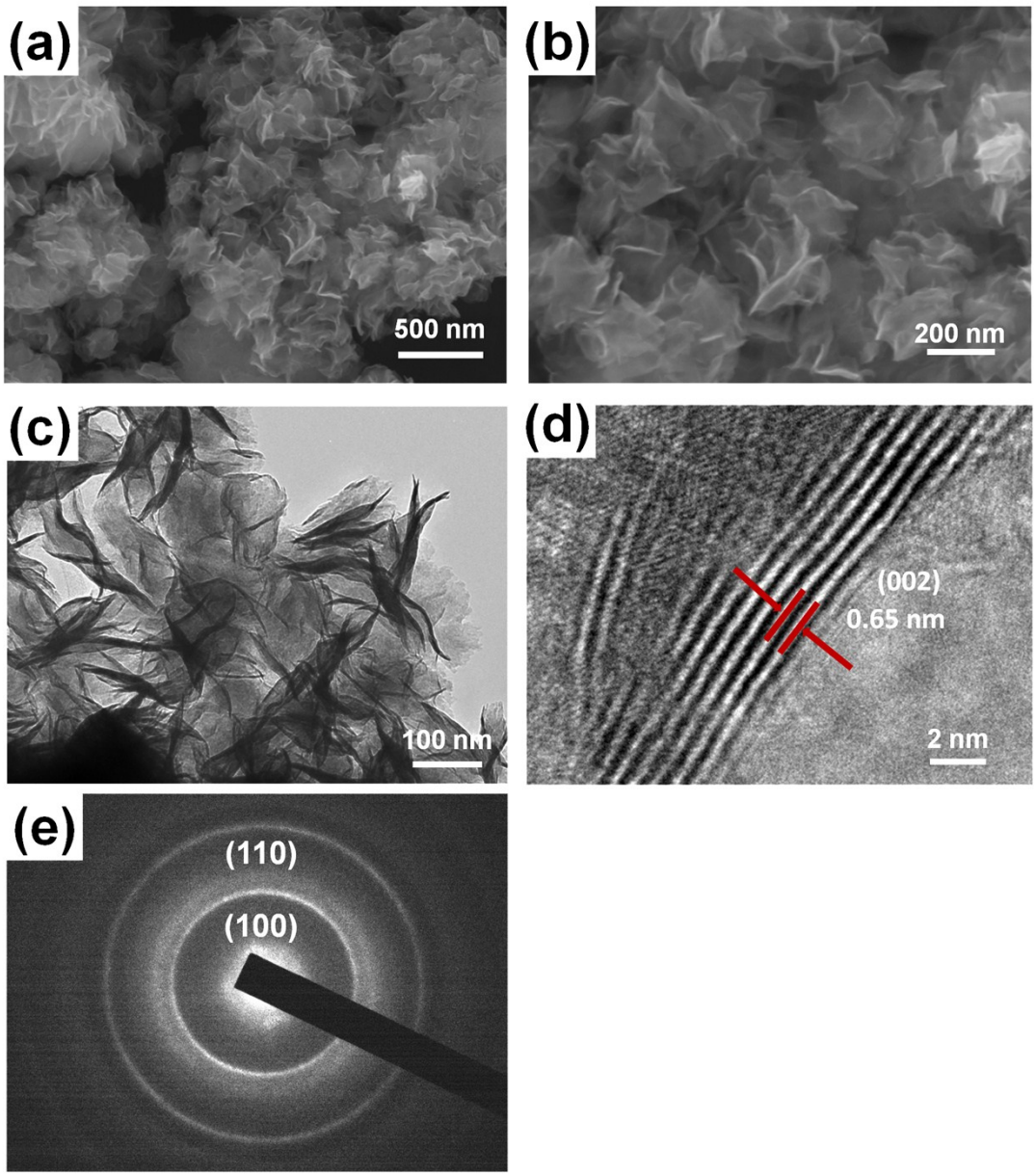

Fig. S1 (a, b) The SEM characterization of the pristine MoS_2. (c) TEM and (d) HRTEM images of the pristine MoS_2. (e) The SAED pattern of the pristine MoS_2.

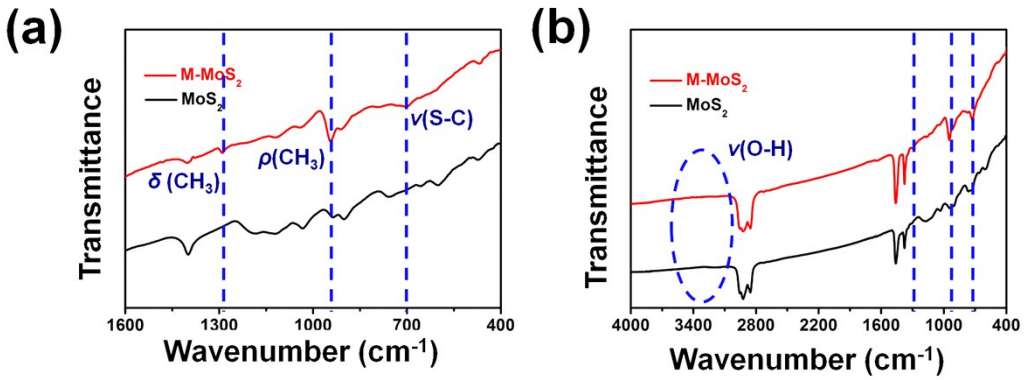

Fig. S2 (a) FTIR results of M-MoS_2 and MoS_2 in KBr pellet. (b) FTIR results of M-MoS_2 and MoS_2 in paraffin oil.

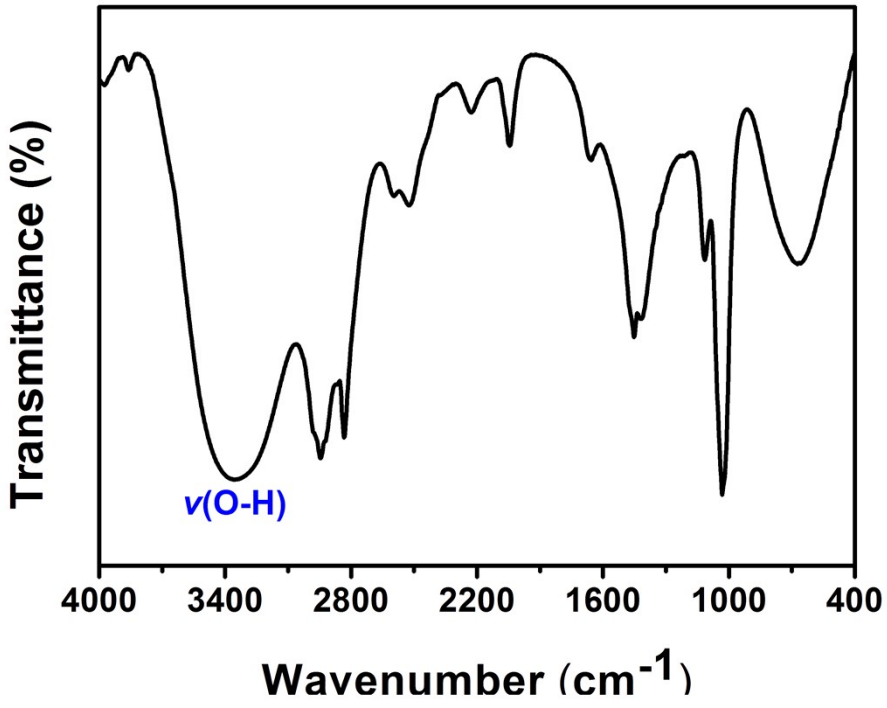

Fig. S3 (a) FTIR result of methanol.

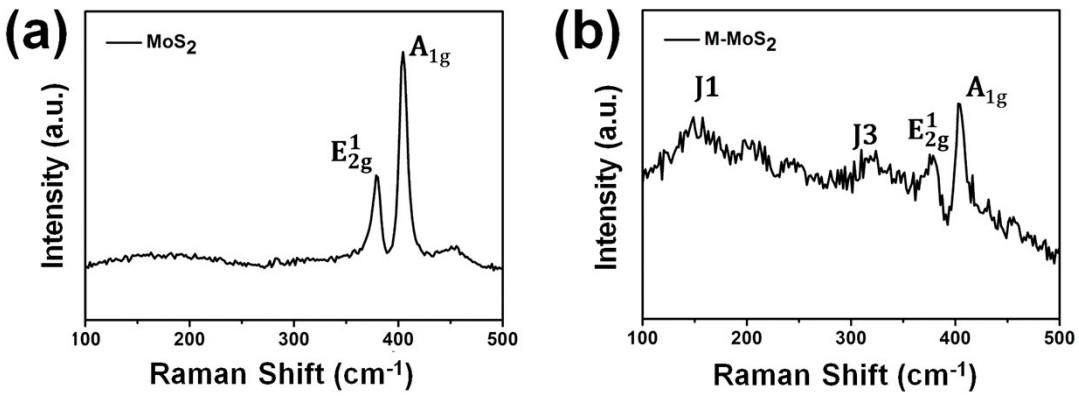

Fig. S4 Raman spectra of (a) MoS_2 and (b) M-MoS_2.

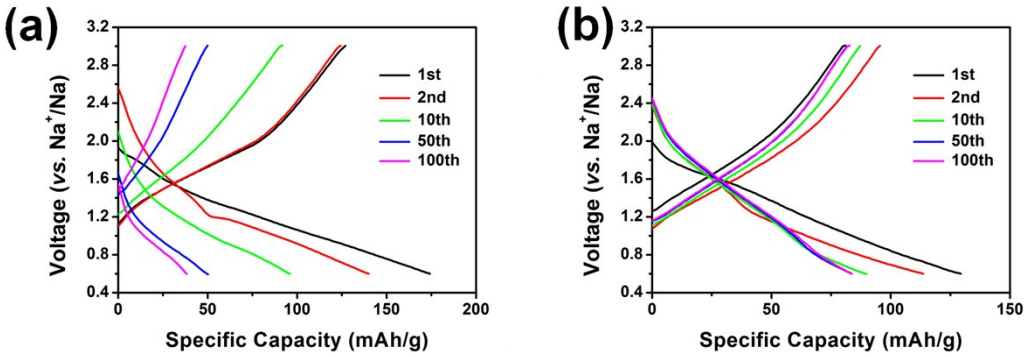

Fig. S5 The discharge/charge curves of (a) MoS_2 and (b) M-MoS_2 at the specific current of 1A/g.

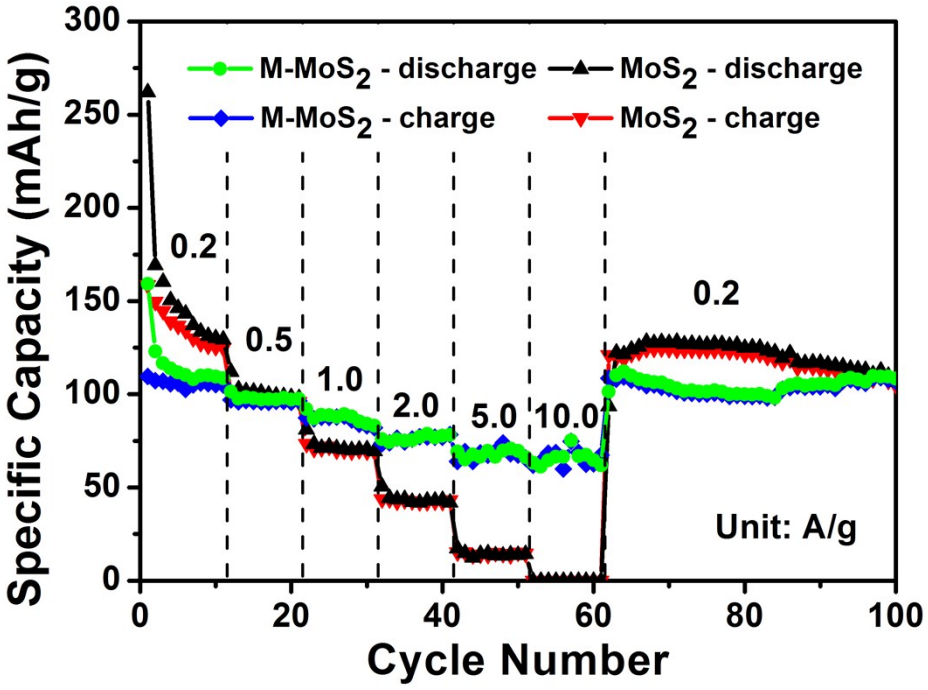

Fig. S6 The rate performances of M-MoS_2 and MoS_2.

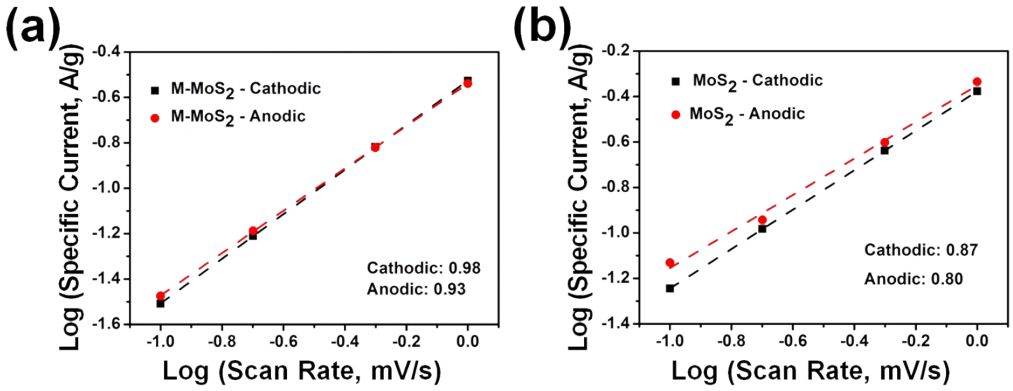

Fig. S7 Determination of the *b*-values of the anodic and cathodic peaks: (a) M-MoS_2 and (b) MoS_2.

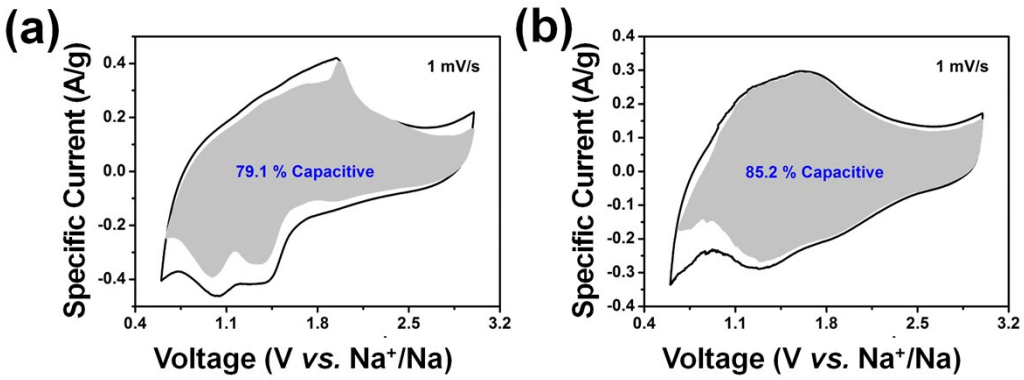

Fig. S8 The capacitive contributions of (a) MoS_2 and (b) M-MoS_2 at 1 mV/s.

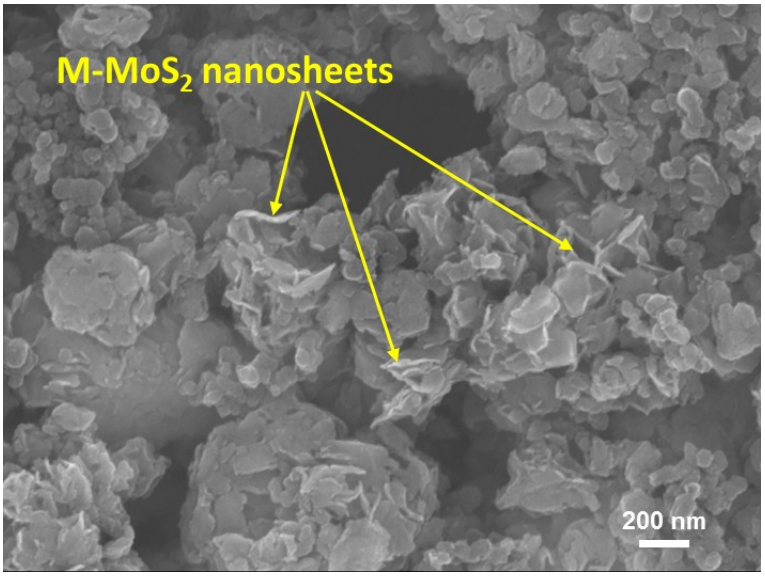

Fig. S9 *Ex-situ* SEM image of M-MoS_2 after 500 cycles at the current density of 1 A/g.