

Improving electrochemical performance of natural molybdenite/N-doped graphene composited anode for lithium-ion batteries via short-time microwave irradiation

Shuonan Wang,^a Yun Hai,^a Bin Zhou,^b Hao Liu*^b and Libing Liao*^a

Corresponding author: Hao Liu, liuhao1398@cugb.edu.cn

Libing Liao, clayl@cugb.edu.cn

^a Beijing Key laboratory of Materials Utilization of Nonmetallic Minerals and Solid Wastes, National Laboratory of Mineral Materials,

School of Materials Science and Technology, China University of Geosciences, Beijing, 100083, PR China

^b School of Science, China University of Geosciences, Beijing, 100083, PR China

Table S1. Electrochemical performance of MoS₂-based electrode materials

Material	Binder/electrolyte	Stability	Rate capacity	Reference
natural MoS ₂ -1 μm	CMC/1 M LiClO ₄ in EC and DMC (1:1, v-v)	1337 mAh g ⁻¹ (147.9 % of initial) after 125 cycles at 0.1 A g ⁻¹	682 mAh g ⁻¹ at 5.0 A g ⁻¹	【1】
Natural ore-Molybdenite	PVDF/1 M LiClO ₄ in EC and DMC (1:1, v-v)	234 mAh g ⁻¹ (22 % of initial) after 125 cycles at 0.1 A g ⁻¹	<302 mAh g ⁻¹ at 1.0 A g ⁻¹	【2】
Natural ore-Molybdenite	CMC/1 M LiClO ₄ in EC and DMC (1:1, v-v)	863 mAh g ⁻¹ (72 % of initial) after 100 cycles at 2.0 A g ⁻¹	682 mAh g ⁻¹ at 2.0 A g ⁻¹	【2】
MoS ₂ /N-graphene	PVDF/1 M LiPF ₆ in EC and DMC (1:1, v-v)	1025 mAh g ⁻¹ (57.3 % of initial) after 100 cycles at 0.1 A g ⁻¹	648 mAh g ⁻¹ at 1.0 A g ⁻¹	【3】
MoS ₂ /graphene	PVDF/1 M LiPF ₆ in ethylene EC and DMC (1:1, v-v)	406.3 mAh g ⁻¹ (57 % of initial) after 100 cycles at 0.1 A g ⁻¹	<400 mAh g ⁻¹ at 1.0 A g ⁻¹	【3】
MoS ₂ @C/RGO	PVDF/ 1 M LiPF ₆ in ethylene EC, DEC and MEC (1:1, v-v)	1189 mAh g ⁻¹ (107.9 % of initial) after 100 cycles at 0.2 A g ⁻¹	726 mAh g ⁻¹ at 2.0 A g ⁻¹	【4】
MoS ₂ /holey graphene	PVDF/1 M LiPF ₆ in ethylene EC and DMC (1:1, v-v)	—	408 mAh g ⁻¹ at 1.0 A g ⁻¹	【5】
MoS ₂ /C fibers	PVDF/1 M LiPF ₆ in ethylene EC and DMC (1:1, v-v)	620 mAh g ⁻¹ (107.9 % of initial) after 50 cycles at 0.1 A g ⁻¹	260 mAh g ⁻¹ at 1.0 A g ⁻¹	【6】
C@MoS ₂	PVDF/ not mention	750 mAh g ⁻¹ (63 % of initial) after 50 cycles at 0.2 A g ⁻¹	349 mAh g ⁻¹ at 2.0 A g ⁻¹	【7】
C@MoS ₂ /PEDOT:PSS	PVDF/1 M LiPF ₆ in ethylene EC and DMC (1:1, v-v)	575 mAh g ⁻¹ (81 % of initial) after 100 cycles at 0.05 A g ⁻¹	363 mAh g ⁻¹ at 0.3 A g ⁻¹	【8】
Natural MoS ₂ /NG-MW	sodium alginate/1 M LiPF ₆ in ethylene EC and DMC (1:1, v-v)	453.7 mAh g ⁻¹ (45.6 % of initial) after 150 cycles at 0.067 A g ⁻¹	638 mAh g ⁻¹ at 1.34 A g ⁻¹	This work

Reference

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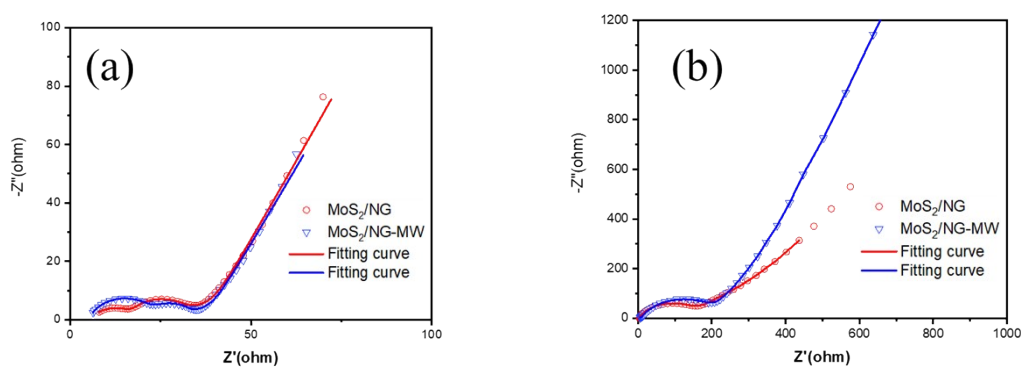


Figure S1. EIS curves of MoS₂/NG and MoS₂/NG-MW electrode after (a) 50 cycles and (b) 150 cycles.