

Electronic Supplementary Information for

**Graphene–molybdenum oxynitride porous
material with improved cyclic stability and rate
capability for rechargeable lithium ion battery**

Ding Zhou,^{ab} Haiping Wu,^a Zhixiang Wei*^a and Bao-Hang Han*^a

^a *National Center for Nanoscience and Technology, Beijing 100190, China*

^b *College of Chemistry and Molecular Engineering, Peking University, Beijing 100871,
China*

Tel: +86 10 8254 5576; E-mail: hanbh@nanoctr.cn.

Tel: +86 10 8254 5565; E-mail: weizx@nanoctr.cn.

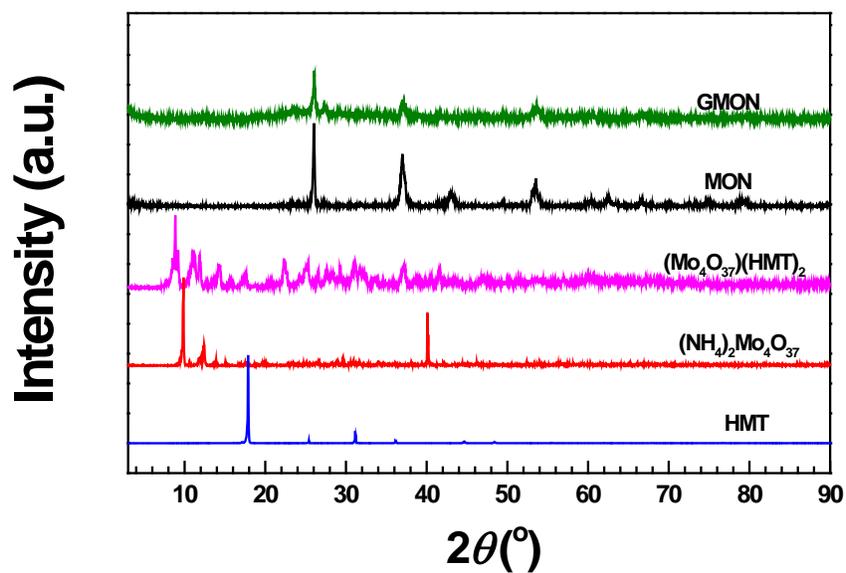


Fig. S1 XRD patterns of the raw materials and GMON materials.

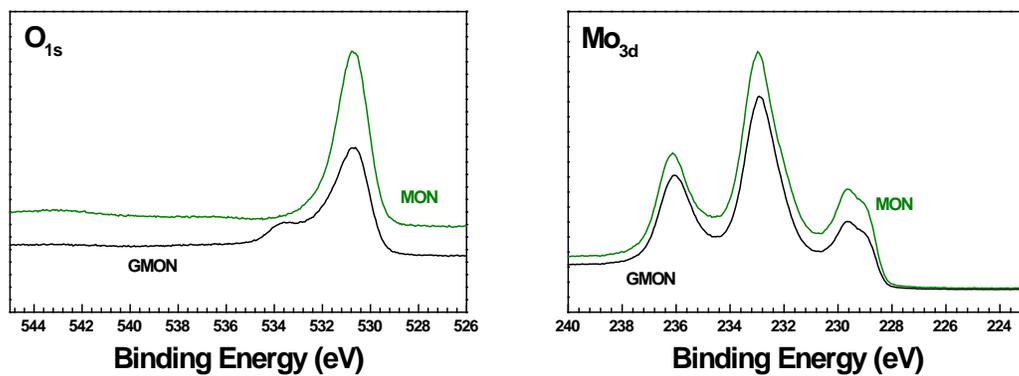


Fig. S2 XPS spectra: O_{1s} and Mo_{3d} regions analysis of MON and GMON.

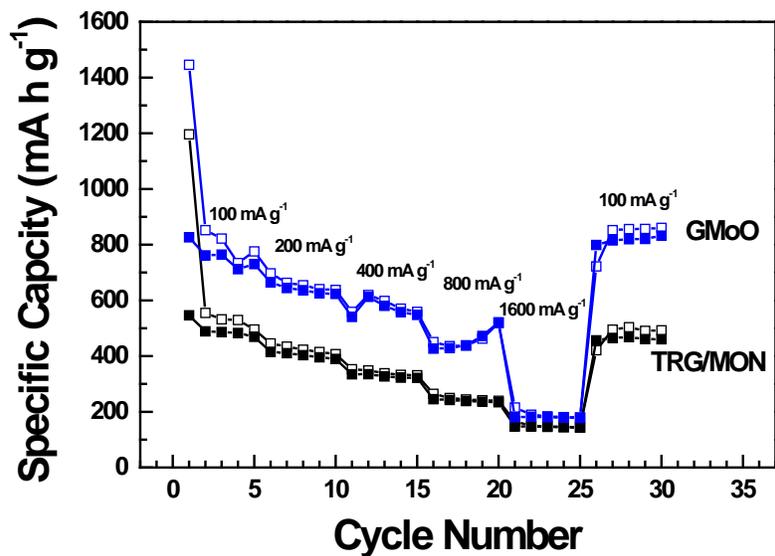


Fig. S3 Rate performances of GMoO and TRG/MON electrodes.

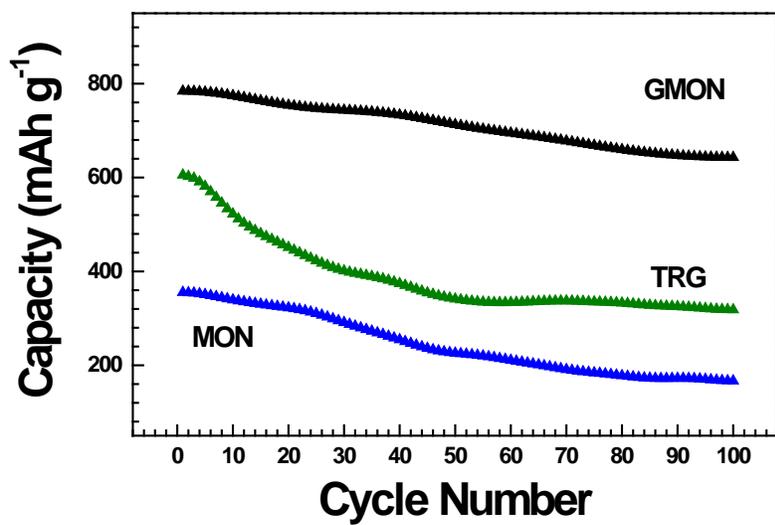


Fig. S4 Cycling performances of TRG, GMON, and MON electrodes at a current density of 200 mA g⁻¹.

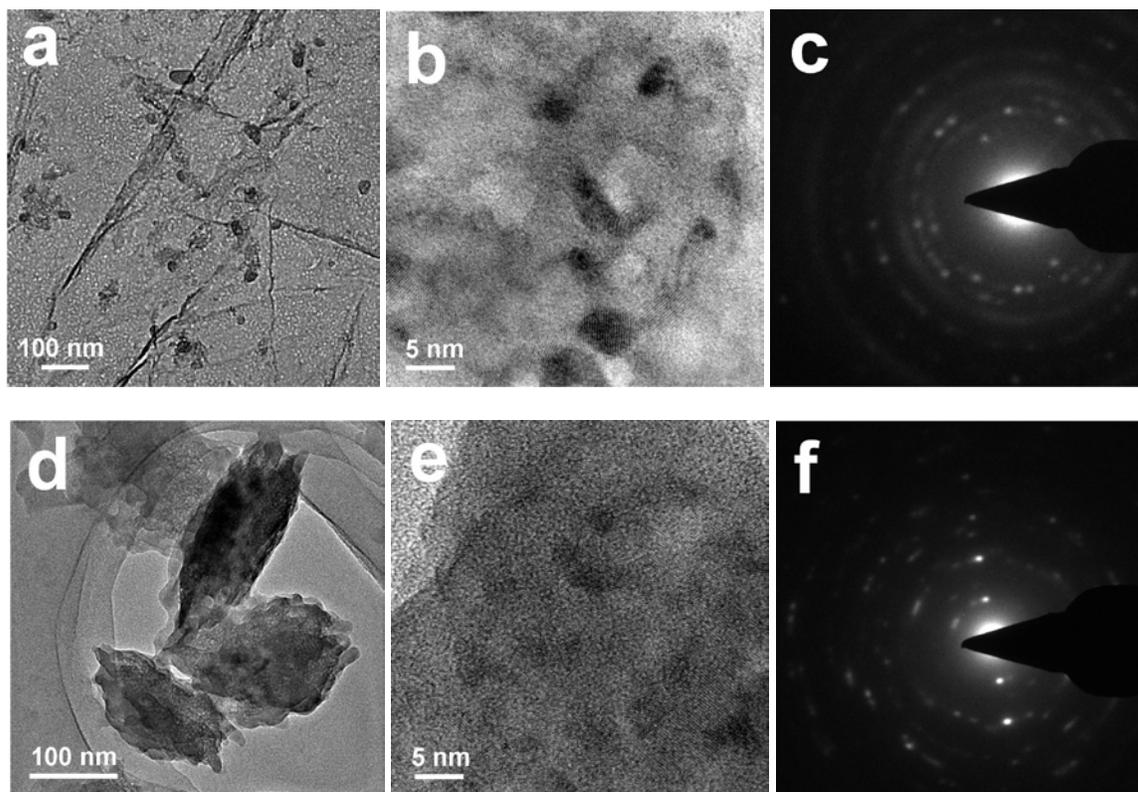


Fig. S5 TEM images and SAED of GMON (a–c) and MON (d–f) in the anode after rate performance test.

Table S1. Averaged specific charge and discharge capacity of the GMoO and TRG/MON anodes at different current densities

Current Density (mA g ⁻¹)	Averaged Specific Capacity (mA h g ⁻¹)			
	GMoO		TRG/MON	
	Charge	Discharge	Charge	Discharge
100-I	759.04	925.92	494.77	661.76
200	639.07	658.55	403.00	424.90
400	567.92	581.24	328.18	340.87
800	457.77	461.12	239.45	247.91
1600	180.14	189.94	145.64	150.83
100-II	817.57	829.54	462.40	480.76