

Supporting Information for

**A free-standing electrode of core-shell structured NiO@Co₃S₄ for
high-performance hybrid Zn-Co/air batteries**

Wenxu Shang, Wentao Yu, Xu Xiao, Yanyi Ma, Yi He, Peng Tan*

Department of Thermal Science and Energy Engineering, University of Science and
Technology of China (USTC), Hefei 230026, Anhui, China.

* Corresponding author:
E-mail: pengtan@ustc.edu.cn

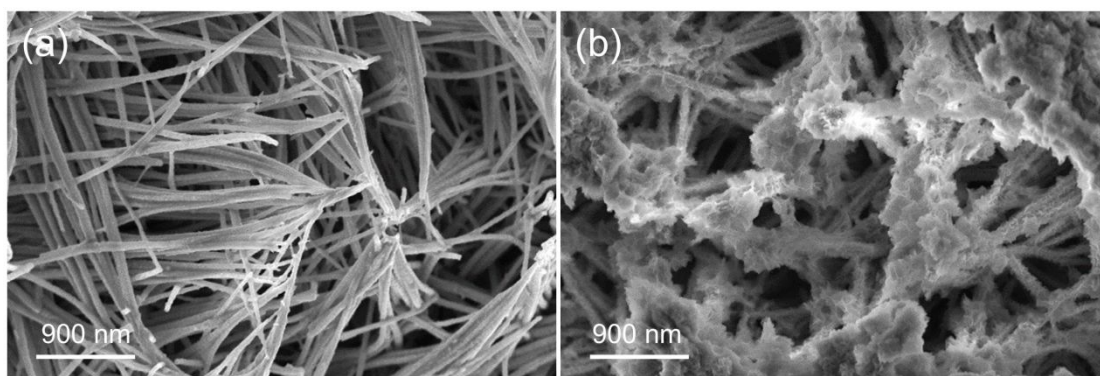


Fig. S1 The SEM images of the electrodes after sulfuring for 3 and 9 h.

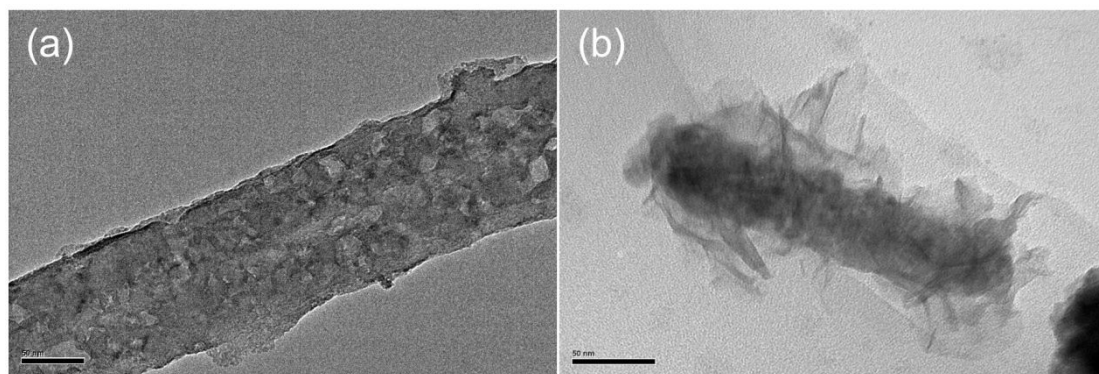


Fig. S2 The TEM images of the electrodes after sulfuring for 3 and 9 h.

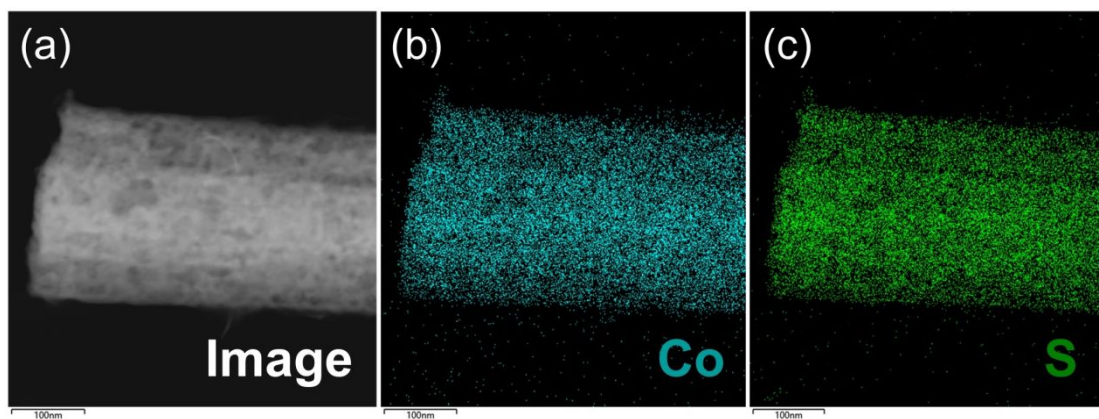


Fig. S3 The TEM mapping images of the electrode after sulfuring for 3 h.

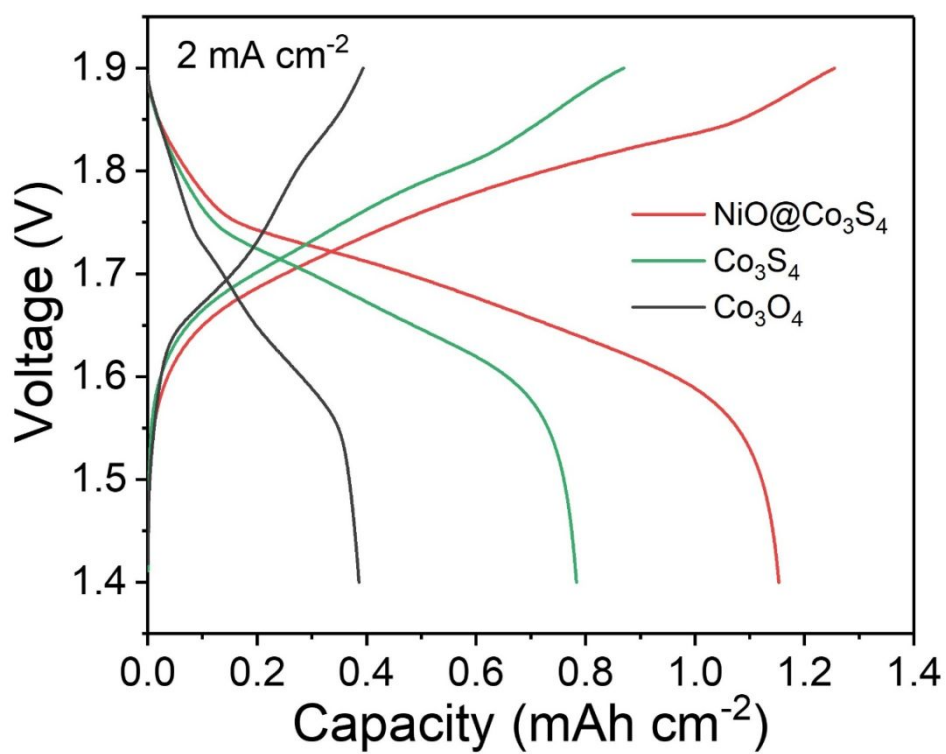


Fig. S4 The charge and discharge curves of the Zn batteries with NiO@Co₃S₄, Co₃S₄, and Co₃O₄ electrodes with the voltages ranging from 1.4 to 1.9 V.

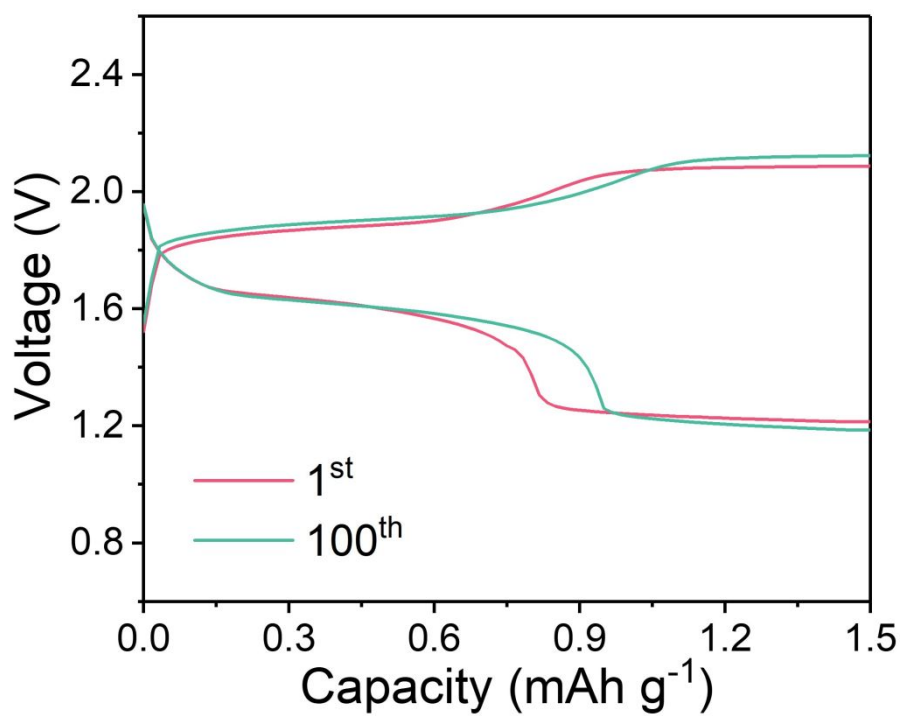


Fig. S5 Charge and discharge curves of the 1st and 100th cycle corresponding to Fig.

5.

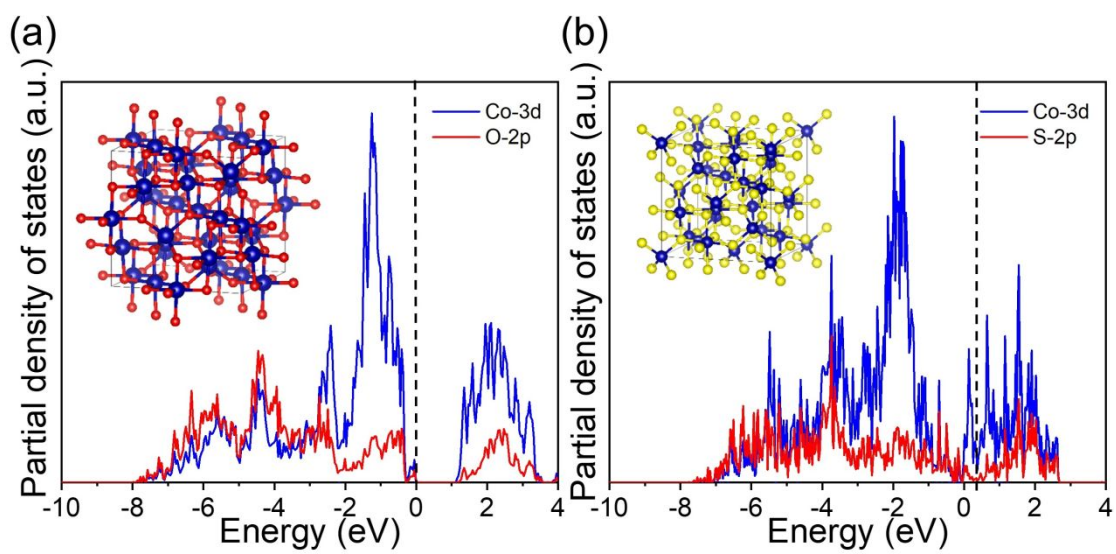


Fig. S6 Calculated density of states of Co_3O_4 and Co_3S_4 electrodes.

