

Supporting Information

**Construction of unique $\text{Co}_3\text{O}_4@\text{CoMoO}_4$ Core/Shell Nanowire
Arrays on Ni Foam by action exchange method for Electrochemical
Energy Storage**

Zhengxiang Gu, Honghong Nan, Baoyou Geng, Xiaojun Zhang*

Key Laboratory for Functional Molecular Solids of the Education Ministry of China,
College of Chemistry and Materials Science, Center for Nano Science and
Technology, Anhui Normal University, Wuhu, 241000, P R China.

Fax: +86-553-3869302; Tel: +86-553-3937135

E-mail: xjzhang@mail.ahnu.edu.cn



Figure S1 photographs of nickel foam substrate, Co_3O_4 precursor on nickel foam, $\text{Co}_3\text{O}_4@ \text{CoMoO}_4$ precursor on nickel foam, Co_3O_4 NWAs on nickel foam and $\text{Co}_3\text{O}_4@ \text{CoMoO}_4$ NWAs on nickel foam.

Equation: The specific capacitance(C_s) and The power density(P) and energy density (E) were calculated according to following equations:

Equation 1:

$$C_s = \frac{It}{mV}$$

Equation 2:

$$E = \frac{1}{2} C_s V^2$$

Equation 3:

$$P = \frac{E}{t}$$

Where I was the constant discharge current(A), t was discharge time(s), V was the potential window(V), m was the total mass(g) of the electrode material on Ni foam.

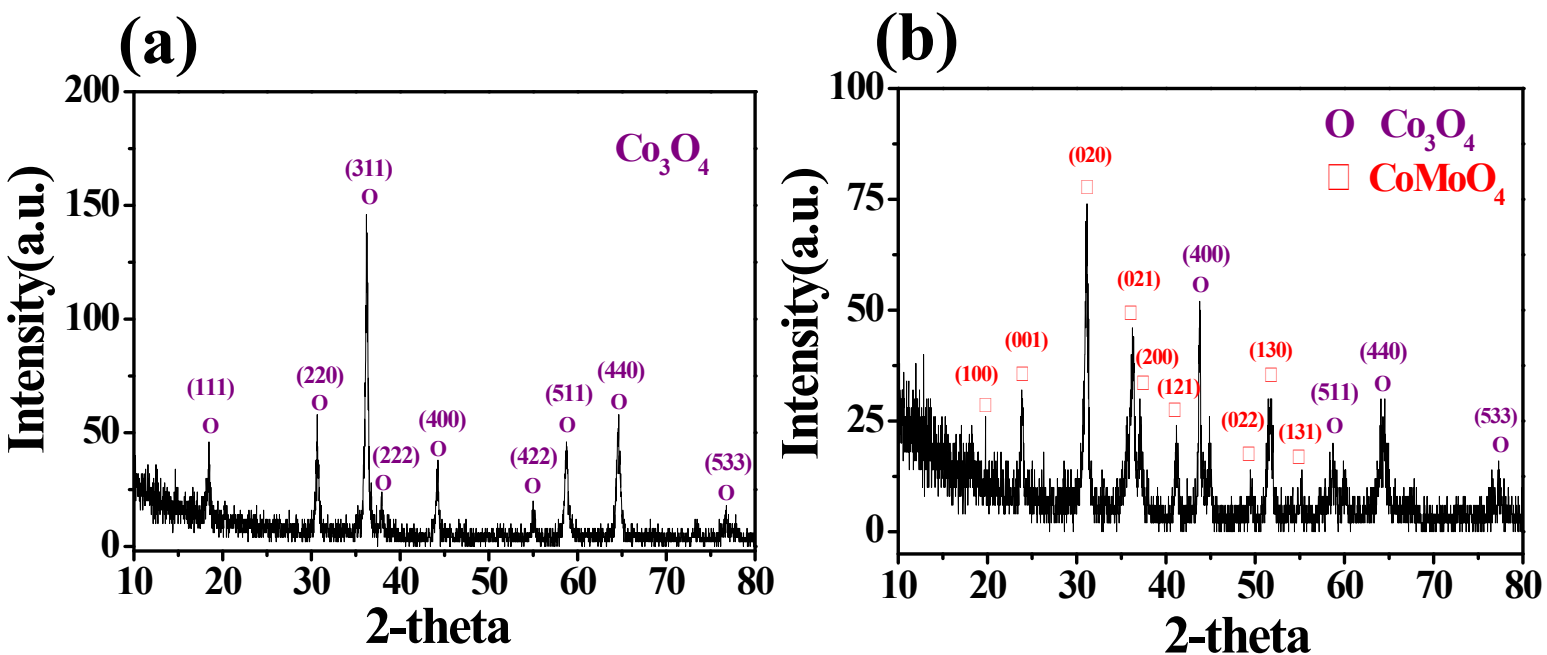


Figure S2 (a) Typical XRD patterns of the Co_3O_4 NWAs (b) XRD pattern of the $\text{Co}_3\text{O}_4@ \text{CoMoO}_4$ (10 h) core/shell composite scratched from Ni foam.

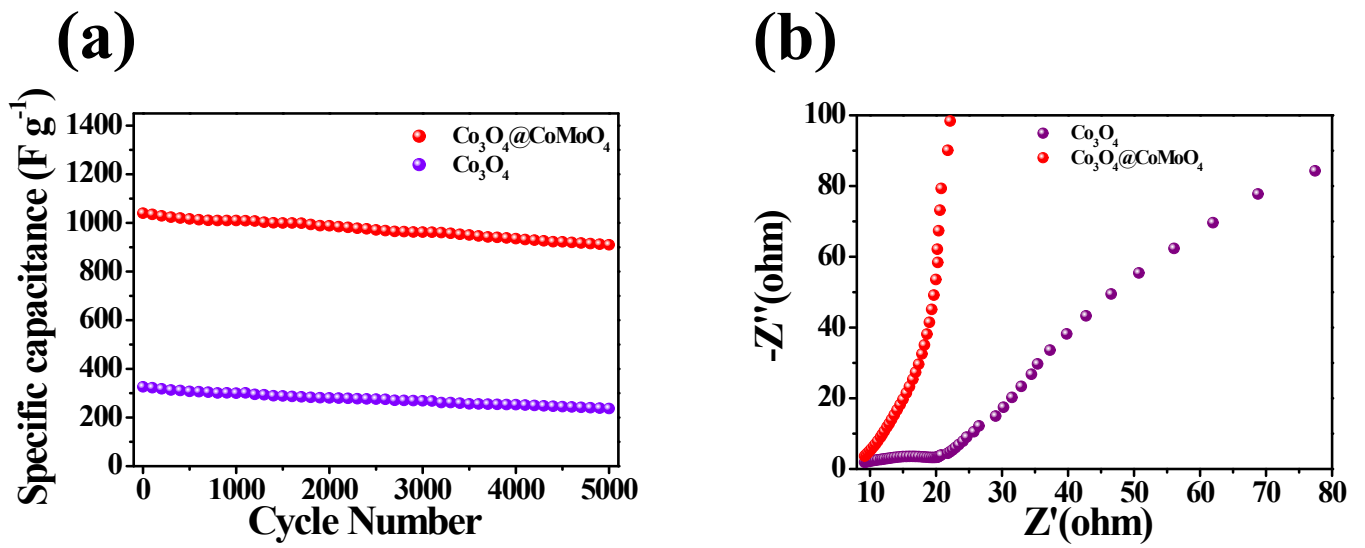


Figure S3 Long-term cycling stability of the Co₃O₄ and Co₃O₄@CoMoO₄ hybrid electrodes. (d) Impedance Nyquist plots of the Co₃O₄ electrode and the Co₃O₄@CoMoO₄ hybrid electrode.

(a)

(b)

(c)

(d)

Figure S4 Morphologies of the $\text{Co}_3\text{O}_4@\text{CoMoO}_4$ nanostructure at various reaction stages by setting the reaction time to (a) 2 h, (b) 5 h, (c) 15 h, (d) 20 h.