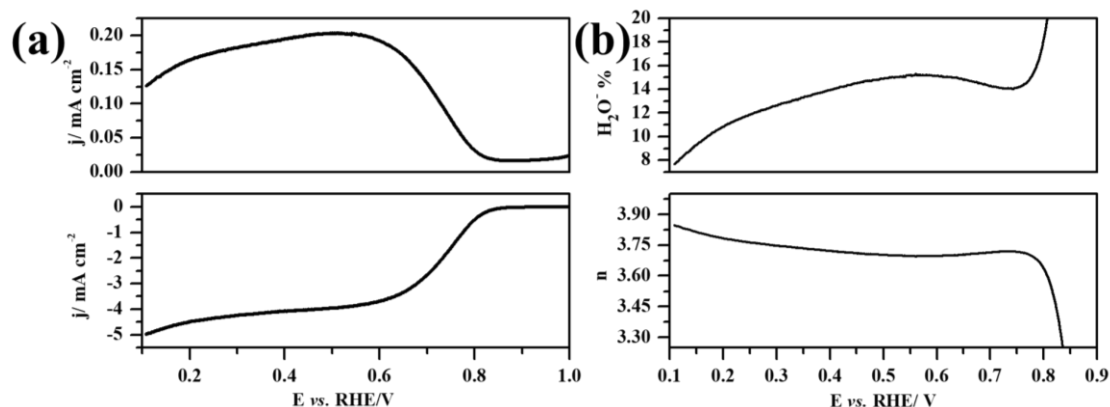


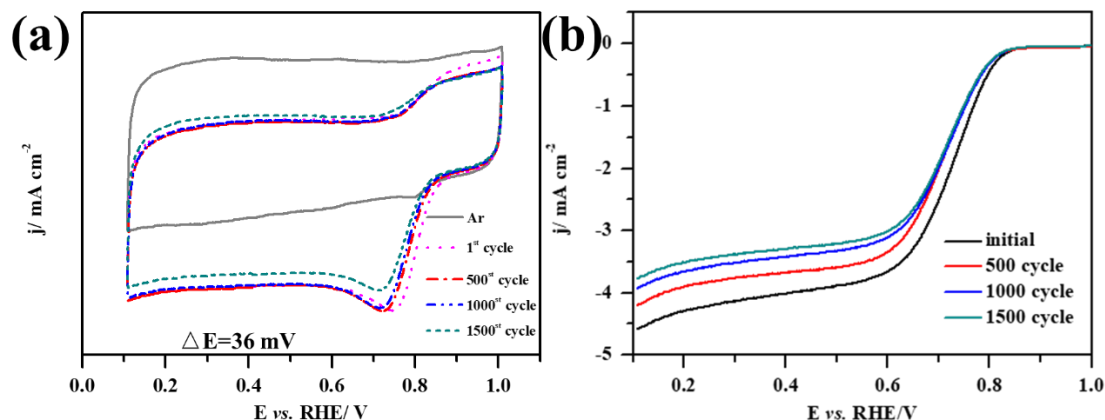
# supporting information

## Nitrogen-doped Ordered Mesoporous Carbons Supported $\text{Co}_3\text{O}_4$ Composite as an Bifunctional Oxygen Electrode Catalyst

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**Figure S1.** (a) Ring (top) and disk (down) current density from RRDE measurements of  $\text{Co}_3\text{O}_4/\text{N-HNMK-3}$  samples after annealing at different temperature in  $\text{O}_2$ -saturated 0.1 M KOH at 25 °C with a sweep rate of  $5 \text{ mV s}^{-1}$  at a rotating speed of 1600 rpm; (b) Molar fraction of  $\text{HO}_2^-$  formation and electron transfer number  $n$  from rotating ring-disk electrode (RRDE) curves in (a).



**Figure S2.** (a) CVs of  $\text{Co}_3\text{O}_4/\text{N-HNMK-3}$  from 0.1 V to 1.0 V at  $100 \text{ mV s}^{-1}$  in  $\text{O}_2$ -saturated 0.1 M KOH from 1<sup>st</sup> cycle to 1500<sup>th</sup> cycle; (b) LSVs of  $\text{Co}_3\text{O}_4/\text{N-HNMK-3}$  from 0.1 V to 1.0 V at  $5 \text{ mV s}^{-1}$  in  $\text{O}_2$ -saturated 0.1 M KOH from 1<sup>st</sup> cycle to 1500<sup>th</sup> cycle.