



Title	Nitrogen-Doped Hierarchical Porous Carbon Architecture Incorporated with Cobalt Nanoparticles and Carbon Nanotubes as Efficient Electrocatalyst for Oxygen Reduction Reaction
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## Supporting Information

### **Nitrogen-doped hierarchical porous carbon architecture incorporated with cobalt nanoparticles and carbon nanotubes as efficient electrocatalyst for oxygen reduction reaction**

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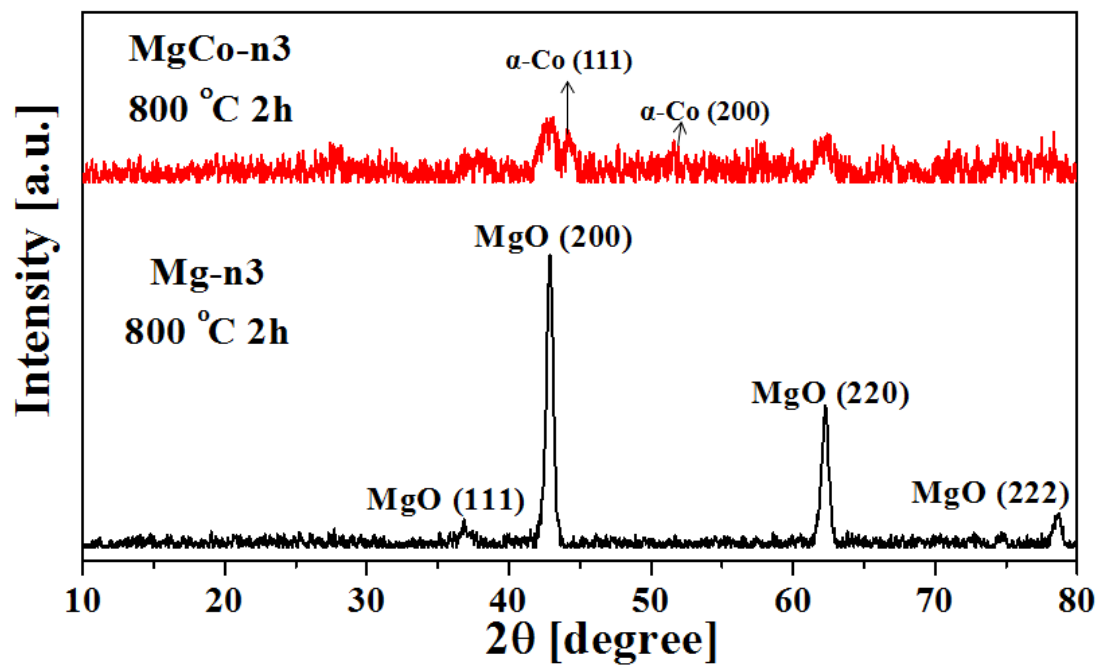
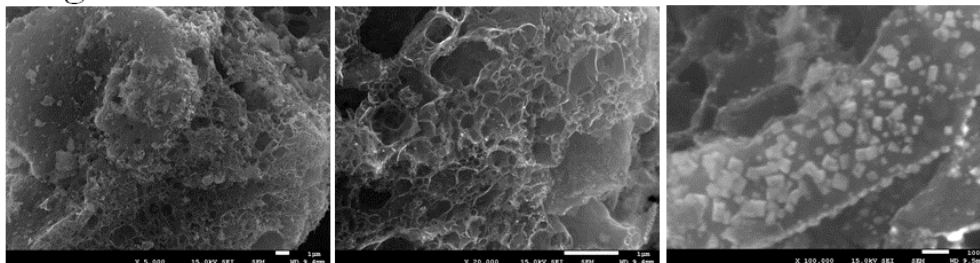


Figure S1. XRD patterns for the samples after heat treatment at 800 °C for 2 h.

### Mg-n3-800



### MgCo-n3-800

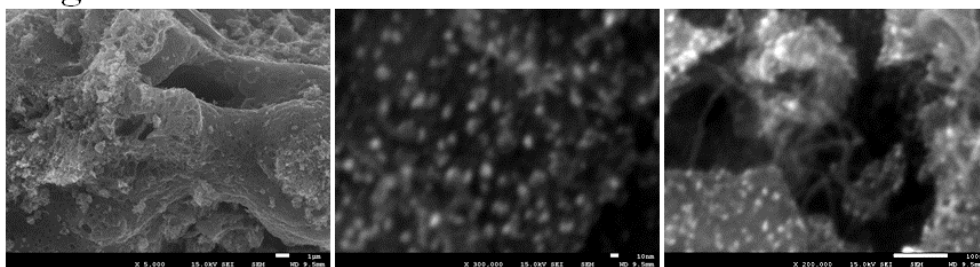
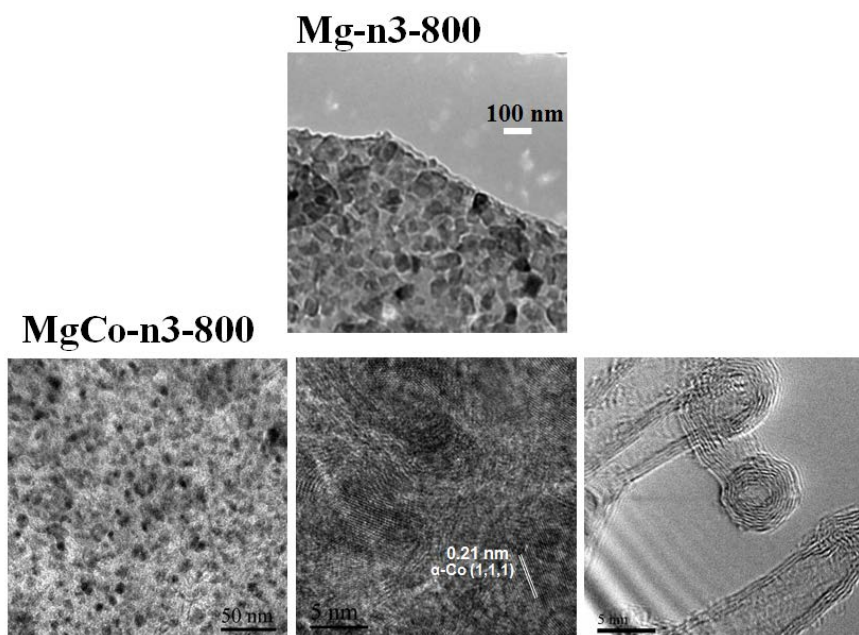
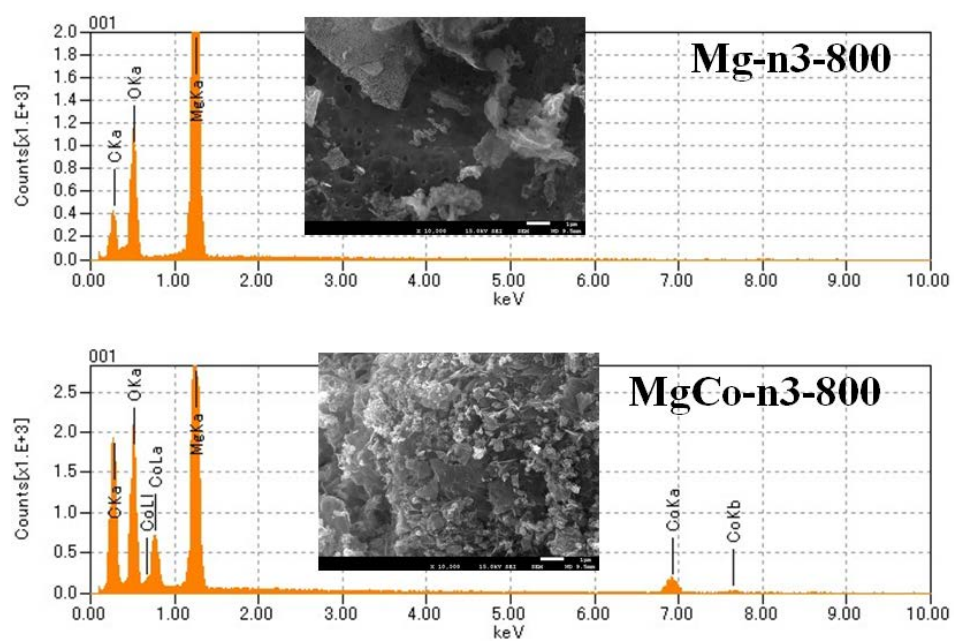


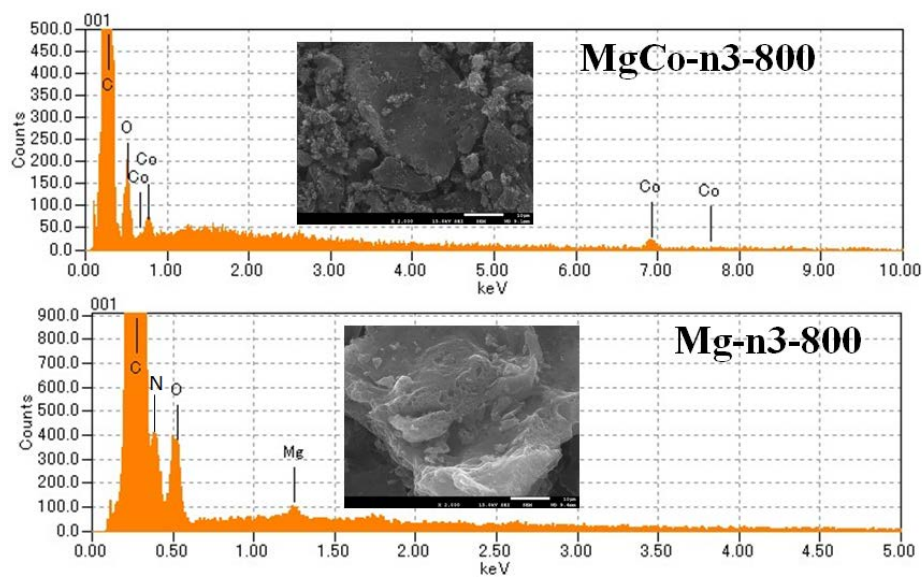
Figure S2. SEM images of the samples after heat treatment at 800 °C for 2h.



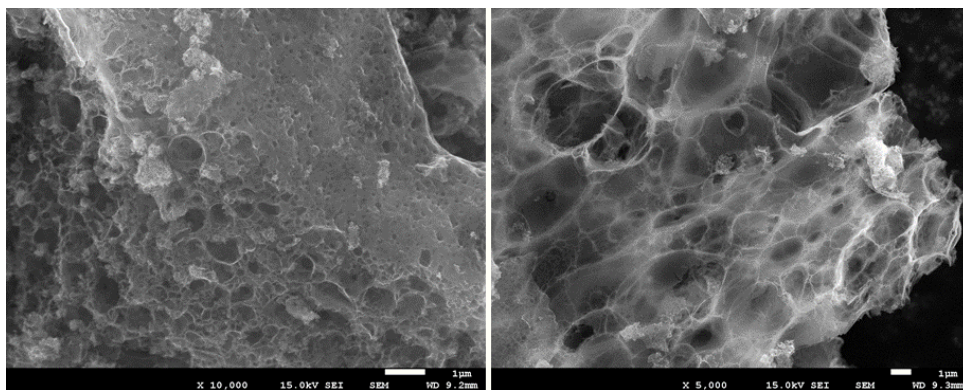
**Figure S3.** TEM images of the samples after heat treatment at 800 °C for 2h.



**Figure S4.** SEM-EDS spectra of the samples after heat treatment at 800 °C for 2h.



**Figure S5.** EDS spectra of the carbon samples under SEM observation.



**Figure S6.** SEM images of the obtained carbon sample (MgCo-n3-800).

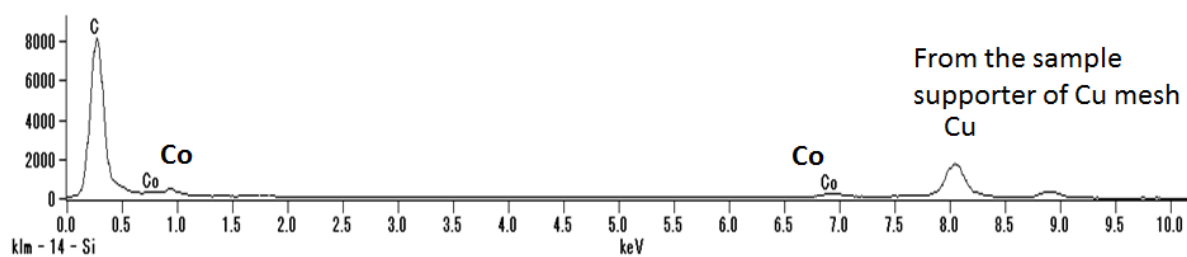


Figure S7. EDS spectra of MgCo-n3-800 under TEM observation.

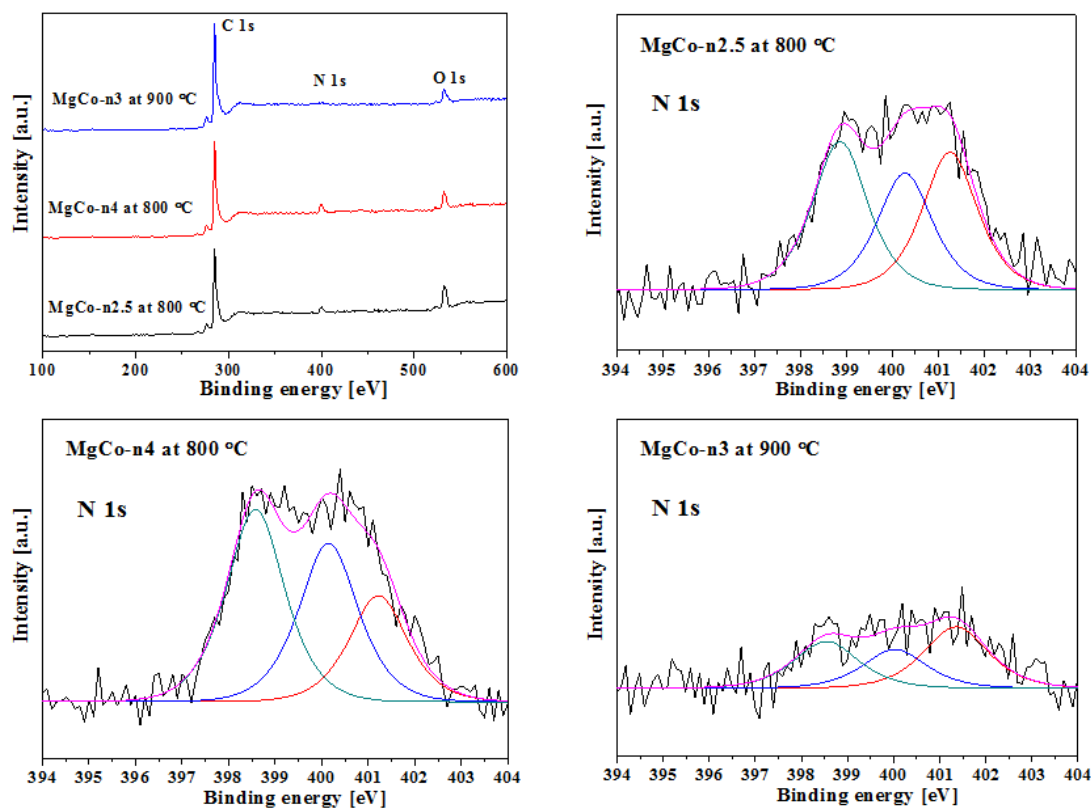
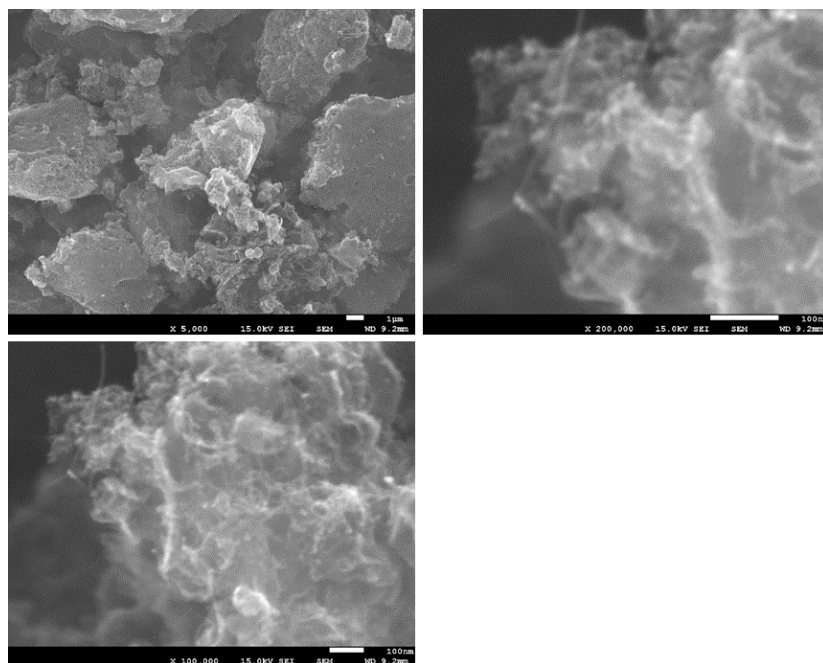
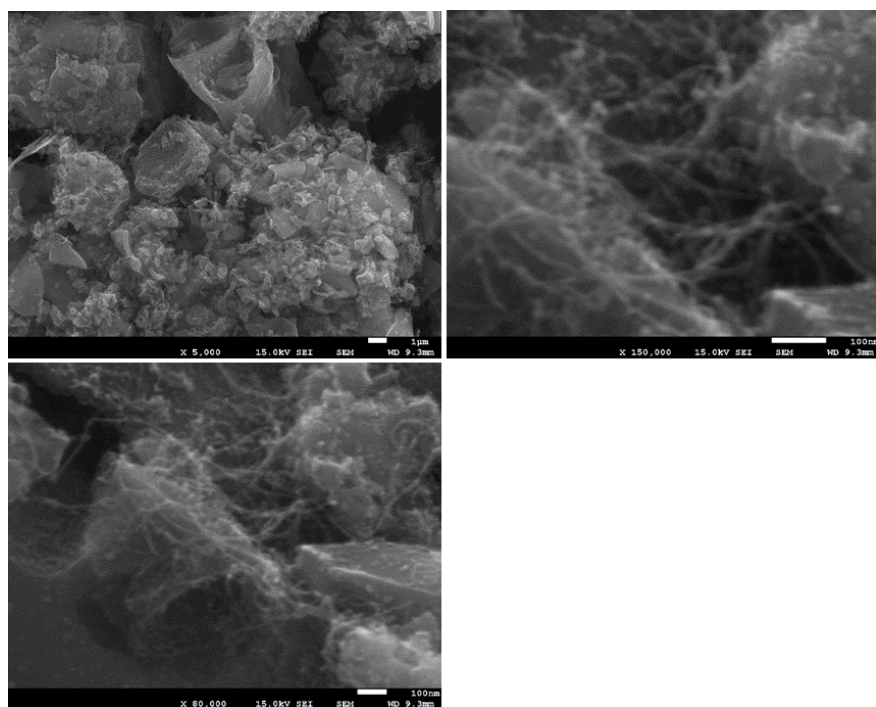


Figure S8. XPS spectra of the carbon samples.



**Figure S9. SEM images for sample MgCo-n2.5-800.**



**Figure S10. SEM images for sample MgCo-n4-800.**

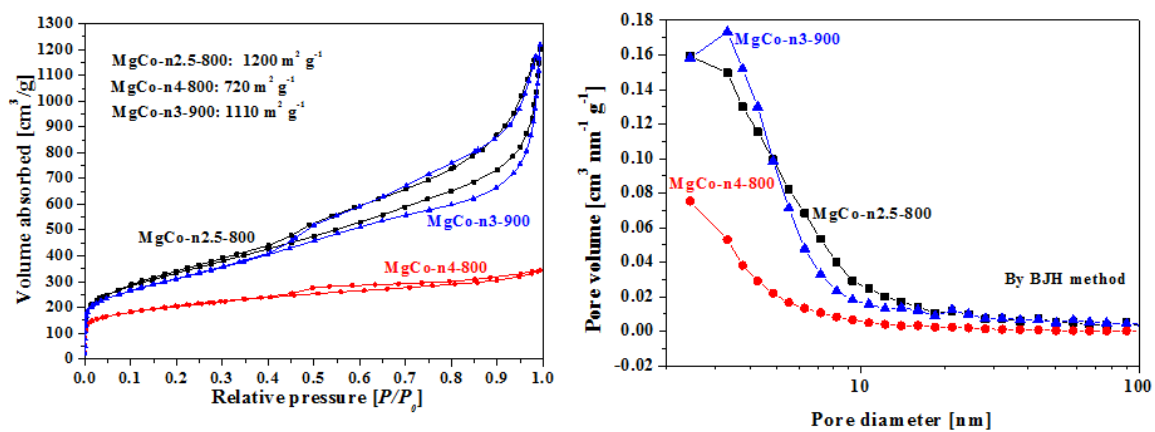


Figure S11. BET  $N_2$  sorption isotherm and pore size distribution.