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## **Supporting Information**

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**Figure S1.** Energy-dispersive X-ray spectroscopy (EDS) plot of (a) CoMo precursor, (b) pure  $CoMoO_4$  nanospheres and (c)  $CoMoO_4@G$  complex.



Figure S2. XRD pattern of pure CoMoO<sub>4</sub> nanospheres.



Figure S3. TGA plot of the CoMoO<sub>4</sub>@G composites at O<sub>2</sub> atmosphere from room temperature to 800 °C with a heating rate of 10 °C min<sup>-1</sup>



Figure S4. Raman spectrum of CoMoO<sub>4</sub>@G composites



**Figure S5.** (a) Nitrogen adsorption-desorption isotherms and (b) the pore size distribution curve of the CoMoO<sub>4</sub>@G sample.