

Fig. S1 Thermogravimetric analysis (TGA) curves of the samples C1, C2 and C3.

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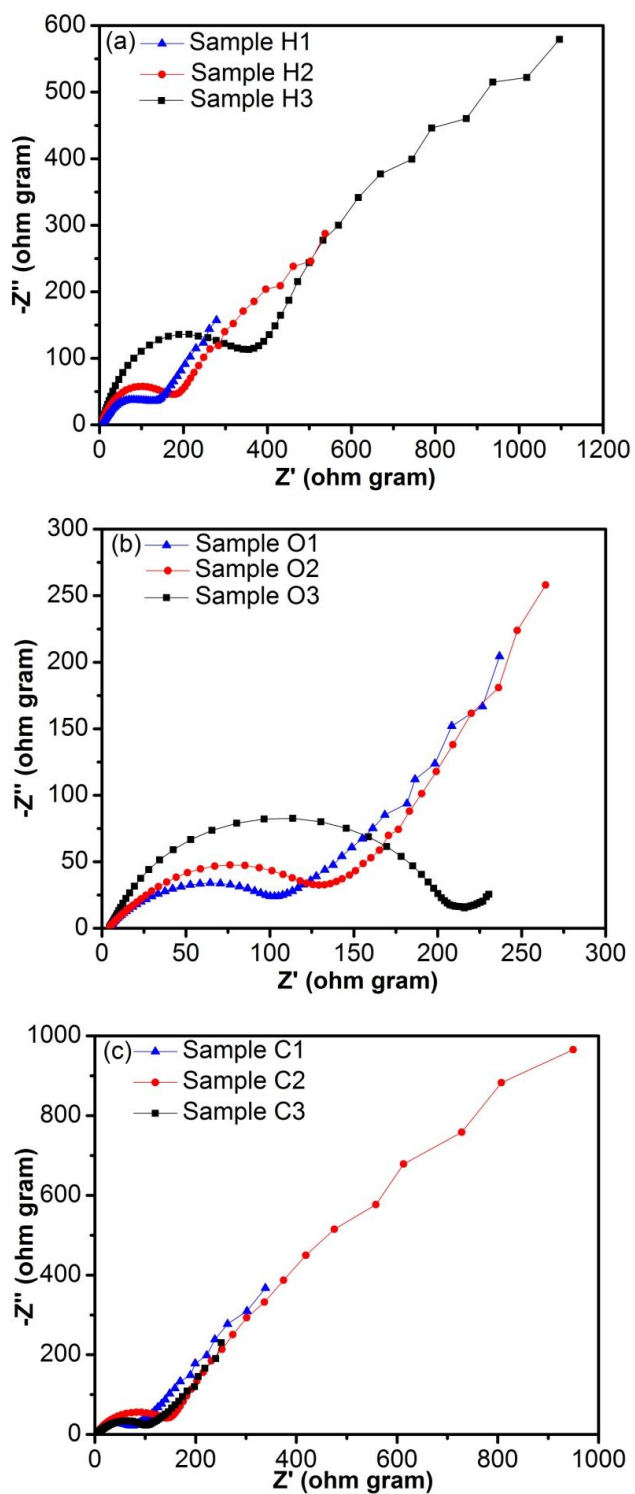
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**Fig. S2** (a) EIS spectra of (a)  $\alpha$ -FeOOH nanorods, (b)  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanorods and (c) Fe<sub>3</sub>O<sub>4</sub> nanorods in the frequency range of 0.1-10<sup>6</sup> Hz.