

## Supporting information

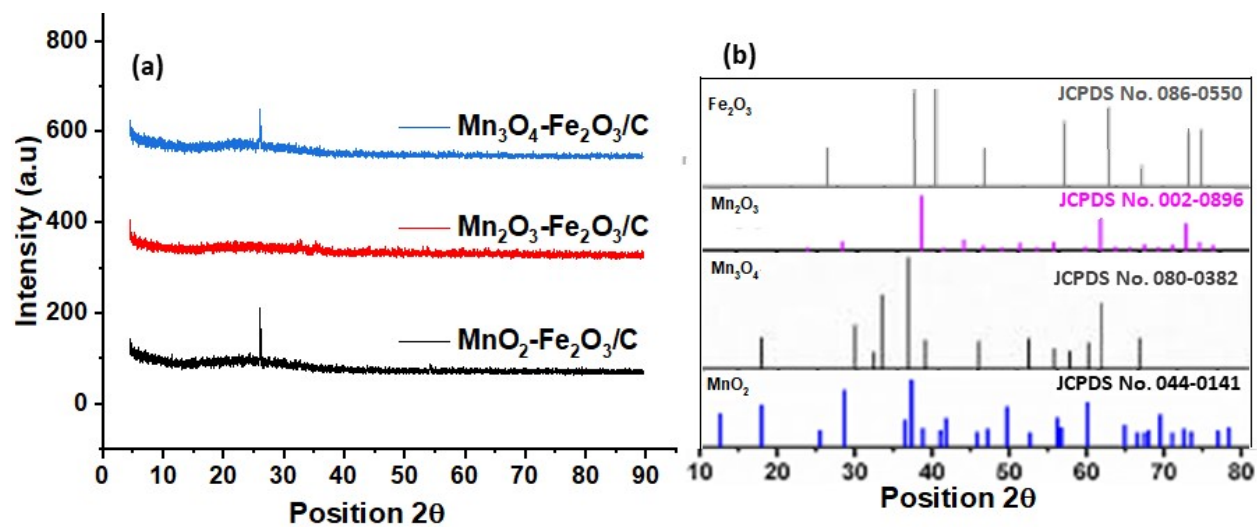
### **Effect of Manganese oxide with its discrete valencies on Fe<sub>2</sub>O<sub>3</sub>/C to form (MnO<sub>x</sub>-Fe<sub>2</sub>O<sub>3</sub>/C) hybrid nanocomposite electrodes for enhanced ORR activity**

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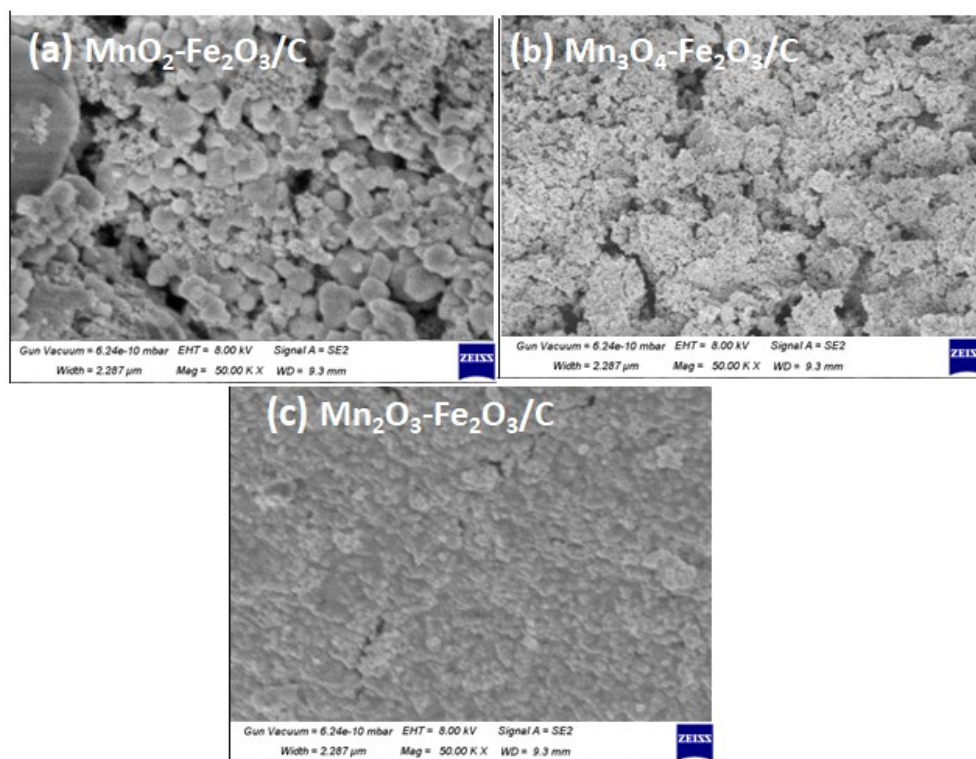
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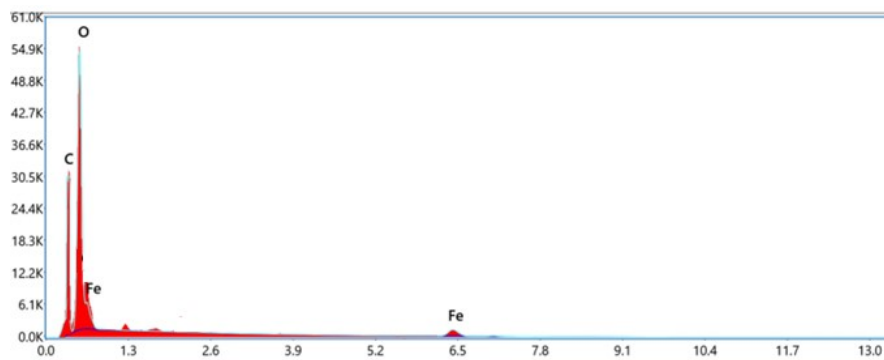
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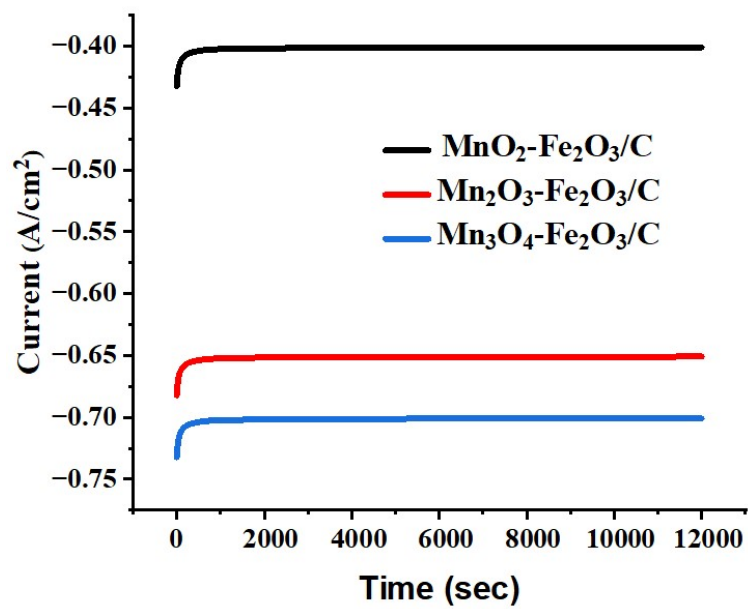
**Figure S1:** (a) XRD pattern of all ternary nanocomposites post-ORR (b) sticky pattern of  $\text{Fe}_2\text{O}_3$ ,  $\text{Mn}_2\text{O}_3$ ,  $\text{Mn}_3\text{O}_4$  and  $\text{MnO}_2$ .



**Figure S2:** SEM images of (a)  $\text{MnO}_2\text{-Fe}_2\text{O}_3/\text{C}$ , (b)  $\text{Mn}_2\text{O}_3\text{-Fe}_2\text{O}_3/\text{C}$ , and (c)  $\text{Mn}_3\text{O}_4\text{-Fe}_2\text{O}_3/\text{C}$  nanocomposites post-ORR studies



**Figure S3:** EDX spectra of  $\text{Fe}_2\text{O}_3/\text{C}$



**Figure S4:** Chronoamperometry (i-t) plot of all ternary nanocomposites