

Fig. S1 The ORR activities of $M\text{Fe}_2\text{O}_4$ catalysts, bubbled with N_2 , O_2 and O_2 with irradiation.

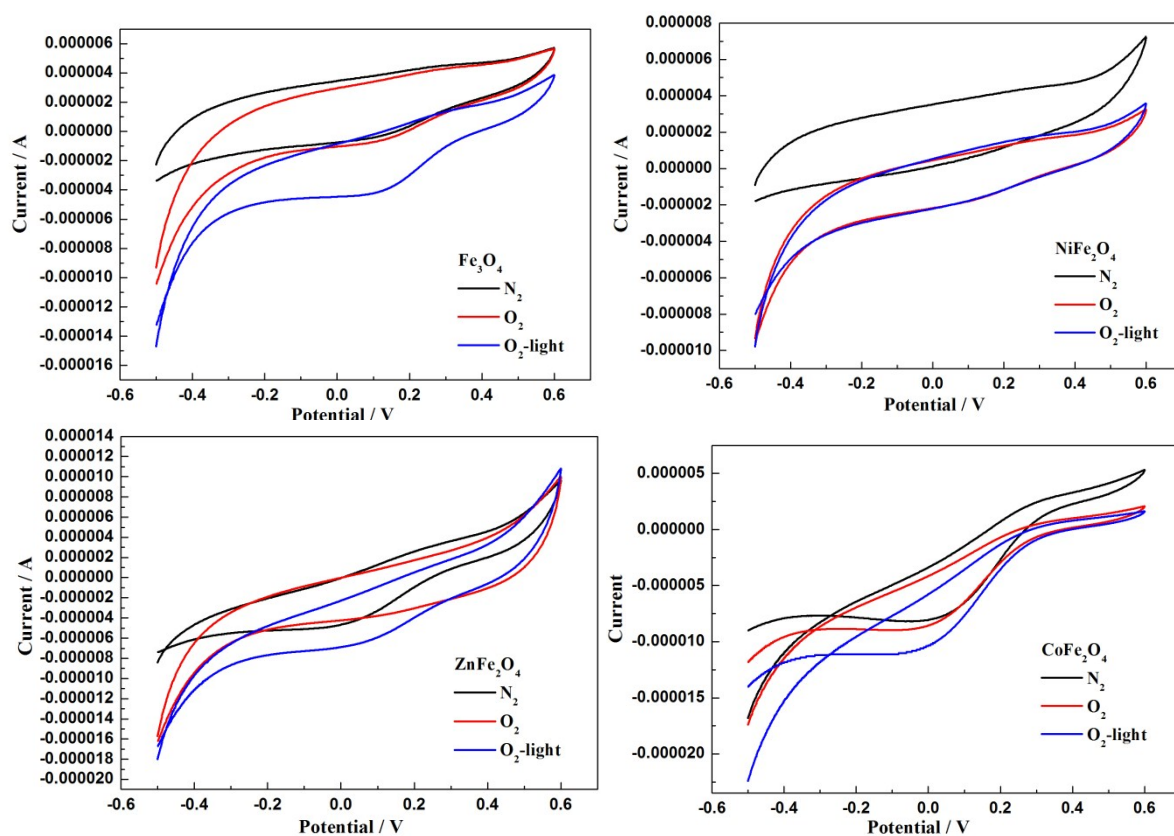
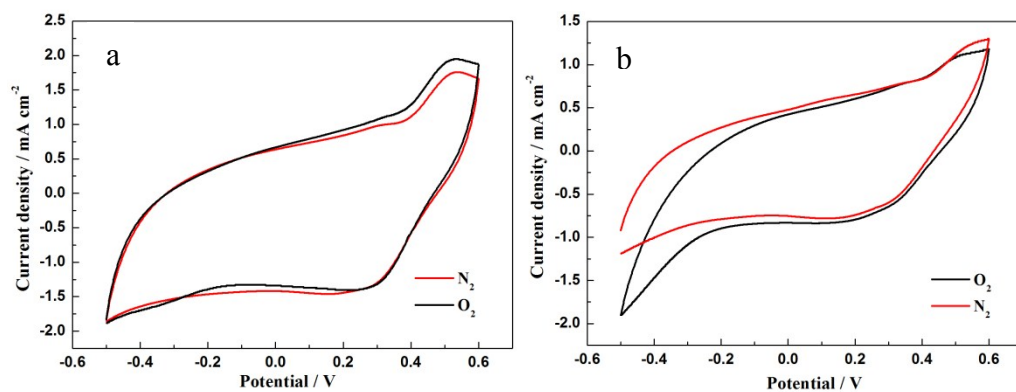


Fig.S2 The ORR activities of CoFe₂O₄- PCM (a) and CoFe₂O₄-rGO- PCM (b) in 0.2 M Na₂SO₄ solution bubbled with N₂ or O₂.



Tab. S1 The inner resistance of photocatalysis-assisted MFC/MBR system using CoFe₂O₄-PCM and CoFe₂O₄-rGO- PCM with or without irradiation.

Inner resistance	CoFe ₂ O ₄ -PCM	CoFe ₂ O ₄ -rGO- PCM
Within irradiation	477 Ω	382 Ω
Without irradiation	493 Ω	382 Ω

The Scherrer's formula is:

$$D = k \lambda / (\beta \cos\theta)$$

Where k is constant, 1; λ is the wavelength of X-ray; β is peak width at half height;

and θ is diffraction angle.