Electronic Supplementary Material (ESI) for RSC Advances.

Facile synthesis of Fe3O4/hierarchical-Mn3O4/graphene oxide as a synergistic catalyst for activation of peroxymonosulfate for degradation of organic pollutants

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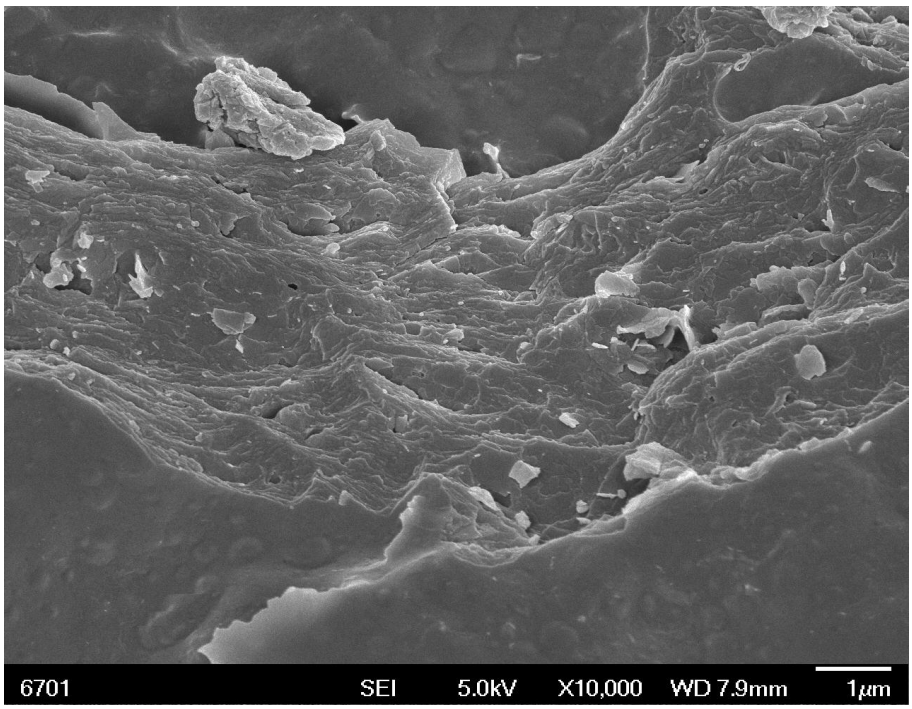

Fig. S1 SEM image of Mn_3O_4/rGO

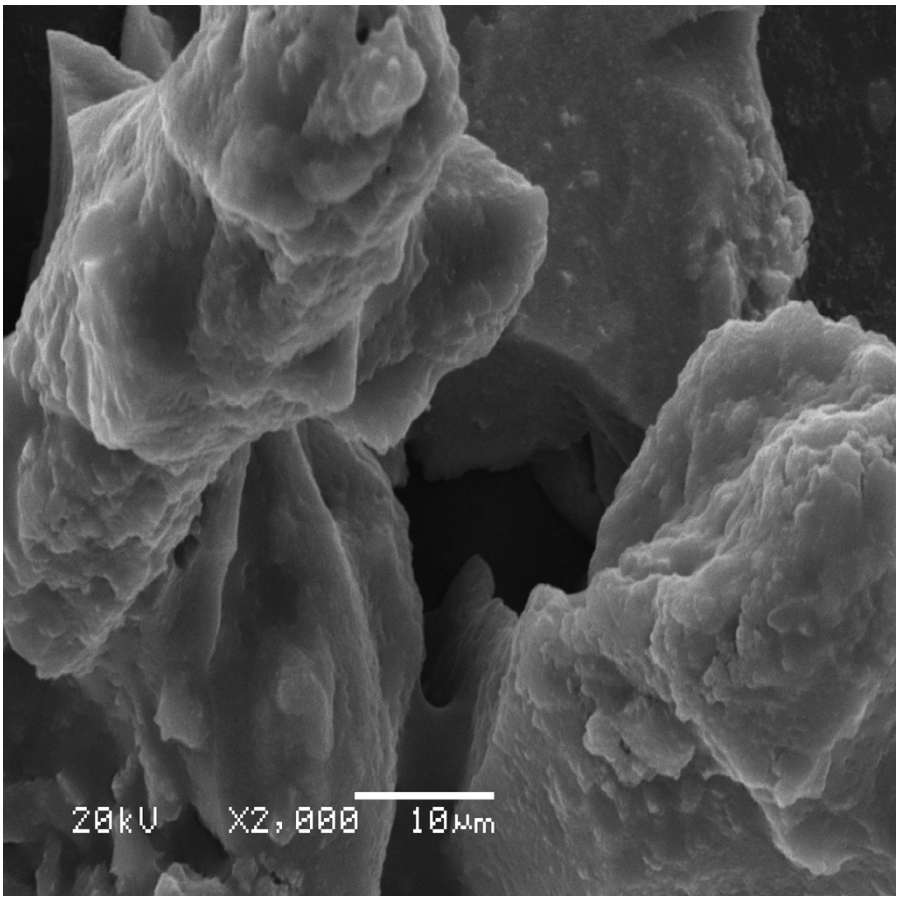

Fig. S2 SEM image of Fe_3O_4/Mn_3O_4/rGO

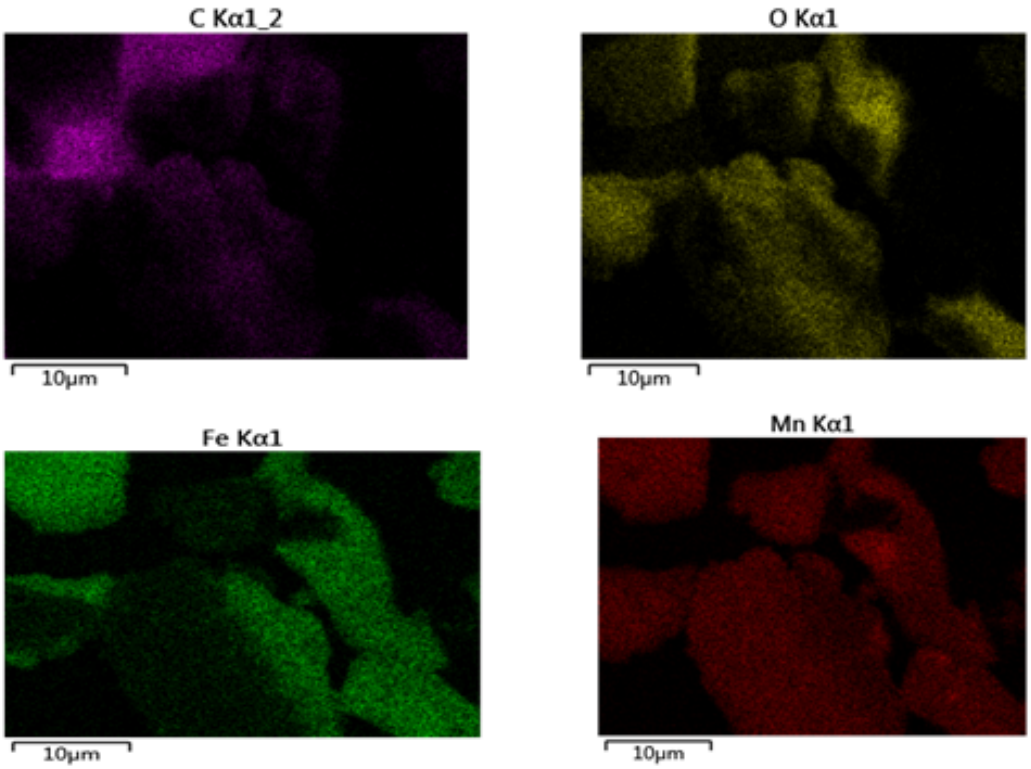

Fig. S3 Elemental distribution maps of C, O, Fe, and Mn of Fe_3O_4/Mn_3O_4/rGO hybrids

Table S1
EDXS results of Fe_3O_4/Mn_3O_4/rGO nanocomposite

Element	C	O	Mn	Fe	Total
Wt%	37.02	25.87	23.96	13.16	100
Mol%	57.39	30.11	8.12	4.39	100

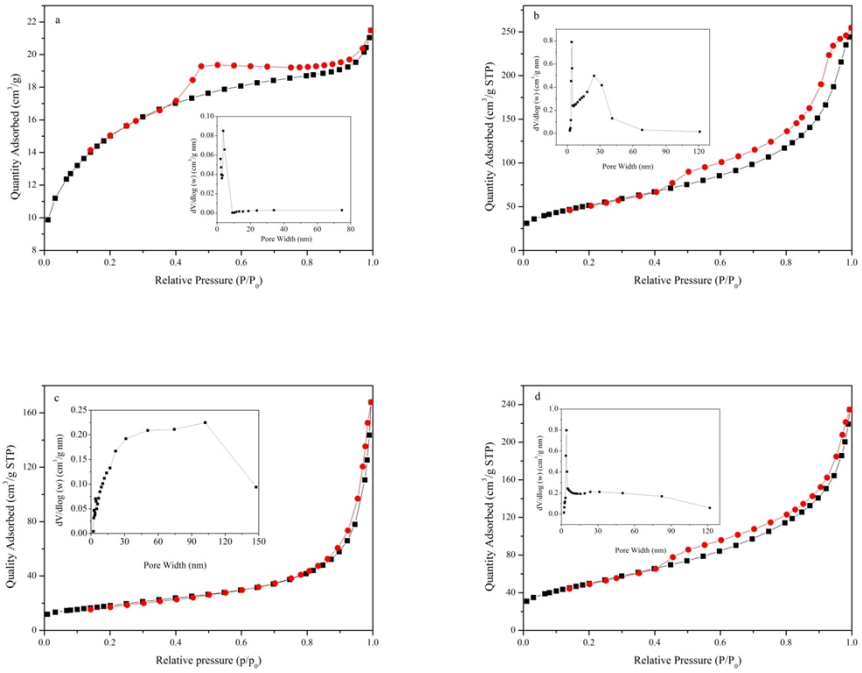

Fig. S4 Nitrogen adsorption-desorption isotherm and BJH pore size distribution (inset) of GO (a), Fe_3O_4/rGO (b), Mn_3O_4/rGO (c), Fe_3O_4/Mn_3O_4/rGO (d)

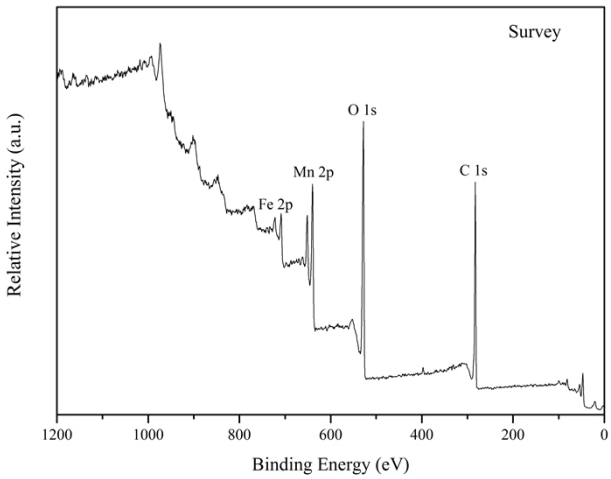

Fig. S5 XPS spectra of Fe_3O_4/Mn_3O_4/rGO composites (Survey scan)

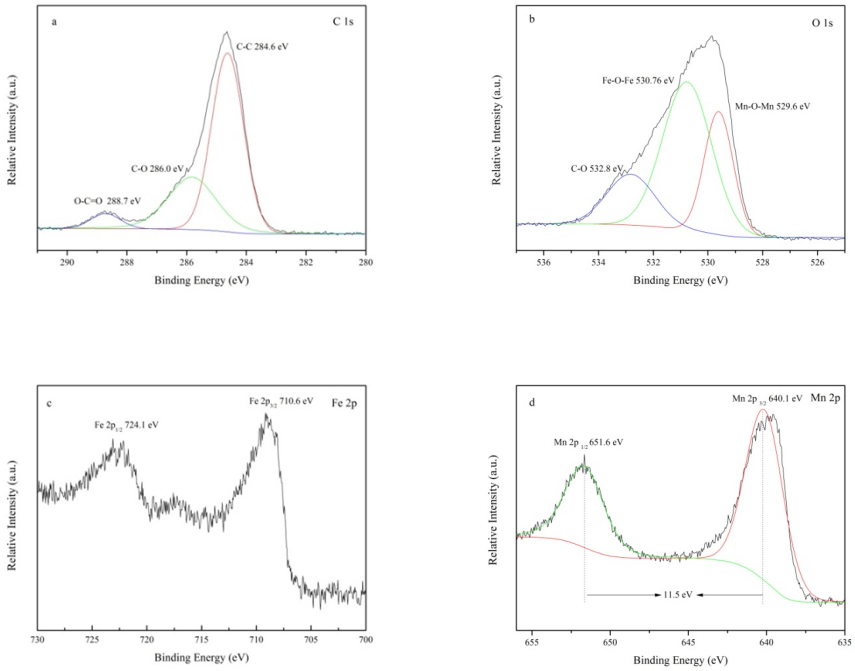

Fig. S6 XPS spectra of Fe_3O_4/Mn_3O_4/rGO, C 1s region (a), O 1s region (b), Fe2p region (c), and Mn 2p region (d)

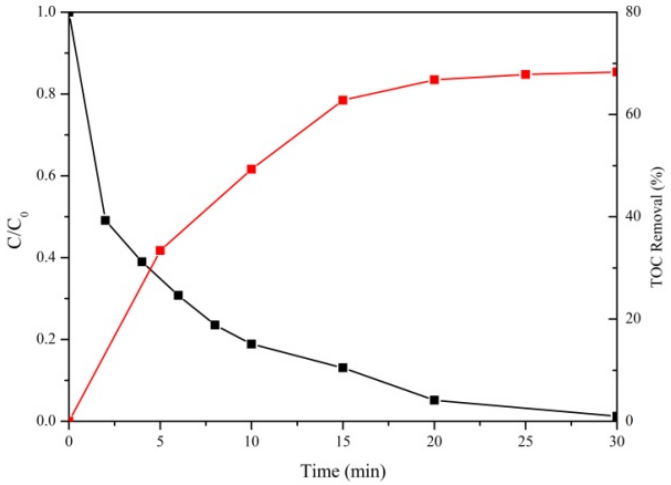

Fig. S7 discoloration and TOC removal during the degradation of MB, (Reaction conditions: catalyst = 100 mg/L, Oxone dose = 0.3 g/L, initial MB concentration = 50 mg/L, pH=7.0, T = 25 °C)