Supplementary Materials

Construction of a combined enzyme system of graphene oxide and manganese peroxidase for efficient oxidation of aromatic compounds

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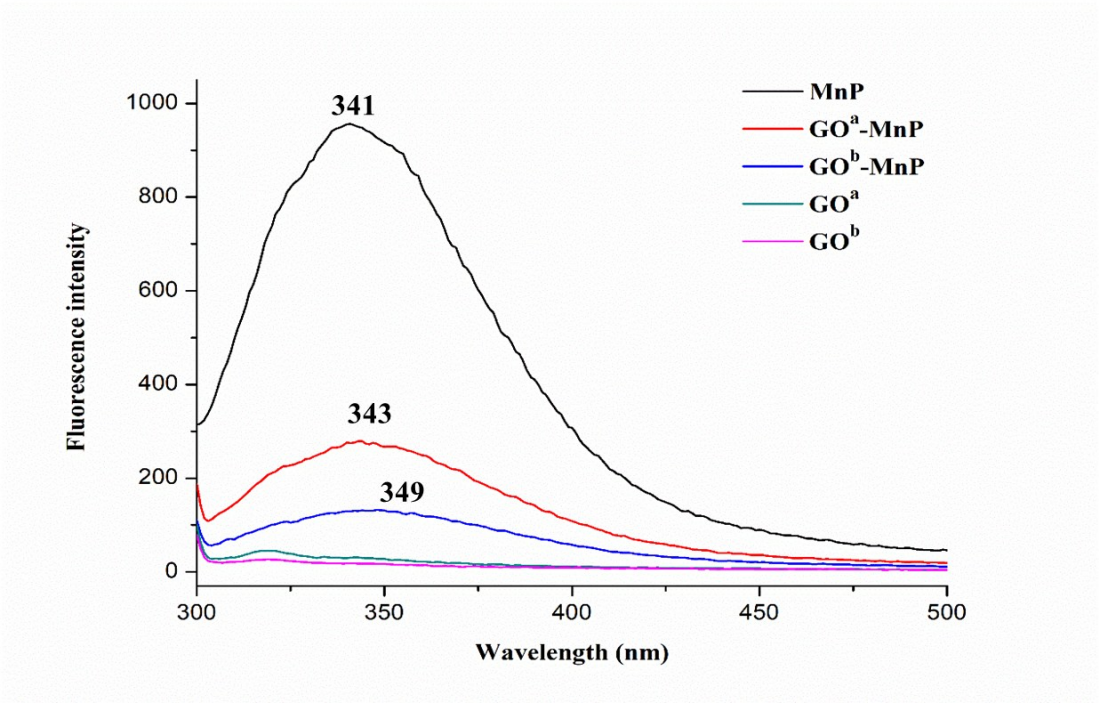

Fig. S1. Fluorescence spectra of MnP and GO-MnP. The MnP concentration was 100 μg /mL in 0.01 M sodium acetate buffer solutions (1 mL, pH 5.9), and GO concentration was 30 and 60 μg /ml（GO^a and GO^b）, respectively.

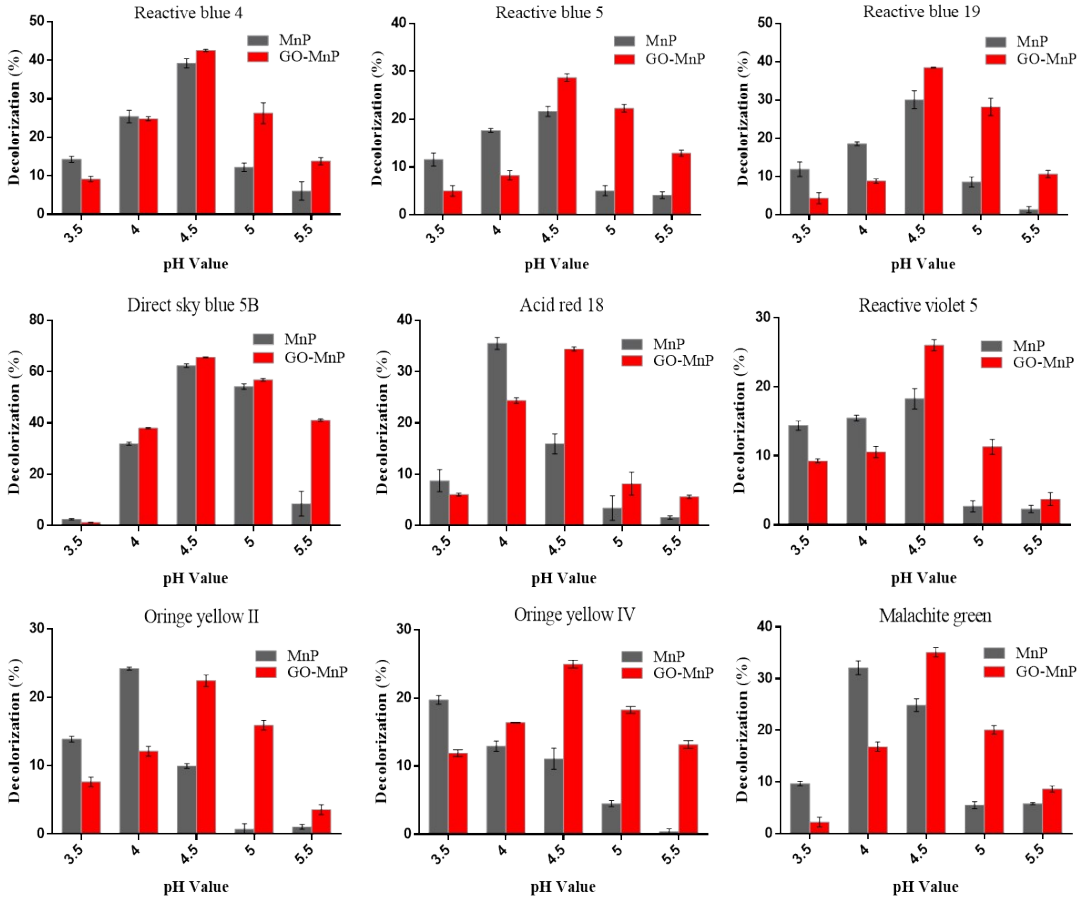

Fig. S2. Decolorization of various dyes by MnP and GO-MnP at pH 3.5~5.5.

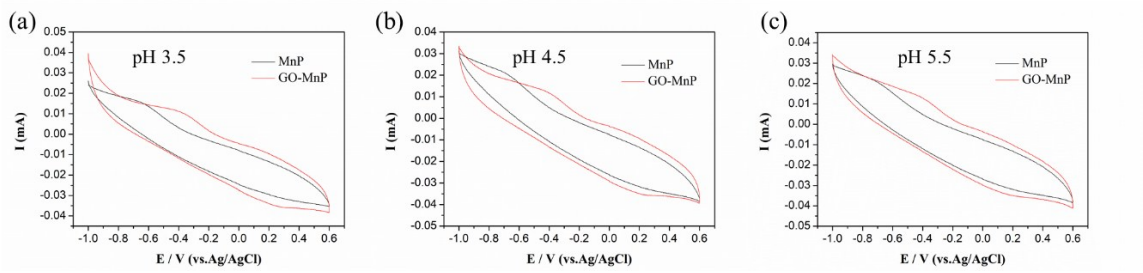

Fig. S3. Cyclic voltammograms of MnP and GO-MnP at different pH values.

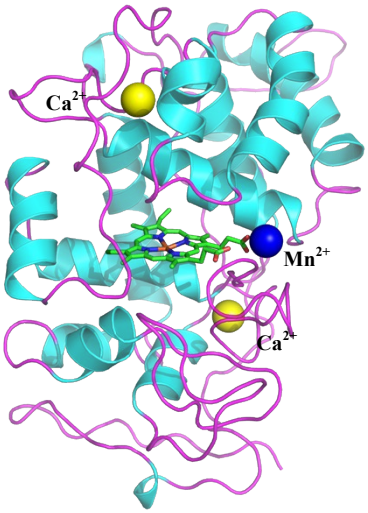

Fig. S4. Molecular models of MnP by PyMOL software.

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MAFKHLIAALSIVLSFGIAQAAITKRVACPDGKNTATNAACCSLFAIRDDIQANLFDGGE    60
                                ▲           ▲▲
CGEEVHESFRLTFHDAIGTGSFGGGGADGSIIVFDDIETNFHANNGVDEIIDEQKPFIAR    120
▲★  ★  ■  ■■●          ● ● ●      ■     ■
HNITPGDFIQFAGAVGVSNCPGAPRLDFFLGRPNPVAAAPDKTVPEPFDTVDSILARFKD    180
                     ▲
AGGFTPAEVVALLGSHTIAAADHVDPTIPGTPFDSTPEVFDTQVFVEVQLRGTLFPGTGG    240
               ■●      ★      ■● ● ● ●
NQGEVQSPLRGEIRLQSDHDLARDSRTACEWQSFVNNQAKLQSAFKAAFKKLSVLGHNIN    300
                  ■        ▲
NLIDCSEVIPEPPNVKVKPATFPAGITHADVEQACATTPFPTLATDPGPATSVAPVPPS     359
 ▲                          ▲
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Fig. S5. Signal peptide and conserved amino acid residues in MnP. "__": signal peptide; "▲": conserved cysteines; "■": conserved heme pocket residues; "★": Mn^{2+} binding sites; "●": Ca^{2+} binding sites.

Table S1 The physicochemical properties of MnP.

Physicochemical property	Value
Number of signal peptides	21
Theoretical pI	4.67
Molecular weight	35645
Number of amino acids	338
Negatively charged residues (Asp + Glu)	43
Positively charged residues (Arg + Lys)	23
GRAVY	-0.135