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Controllable Fabrication of Magnetic Core-Shell Nanocomposites with High Peroxide Mimetic Properties for Bacterial Detection and Antibacterial Applications

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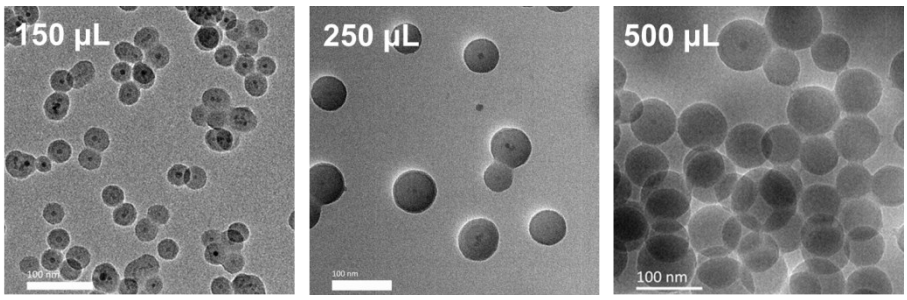

Fig.S1 The influence of TEOS amount on SiO_2 layer thickness.

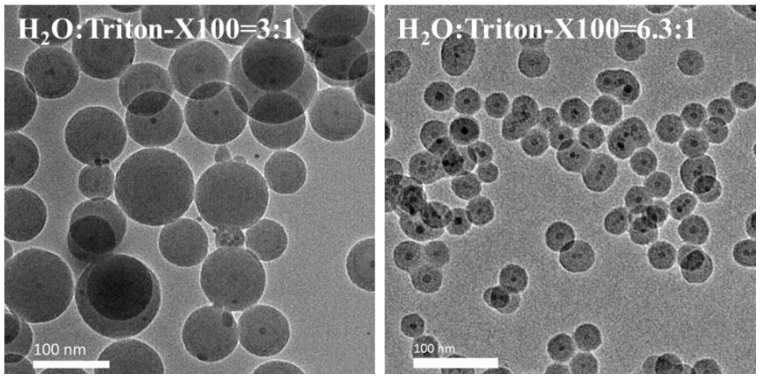

Fig.S2 The influences of the ratios of H_2O and Triton-X100 on SiO_2 layer thickness.

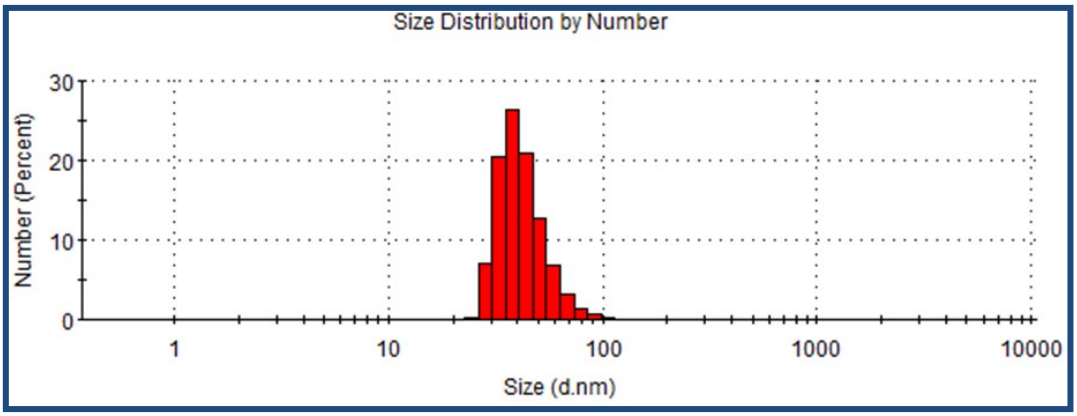

Fig.S3 DLS of Fe_3O_4@SiO_2-Pt nanocomposites.

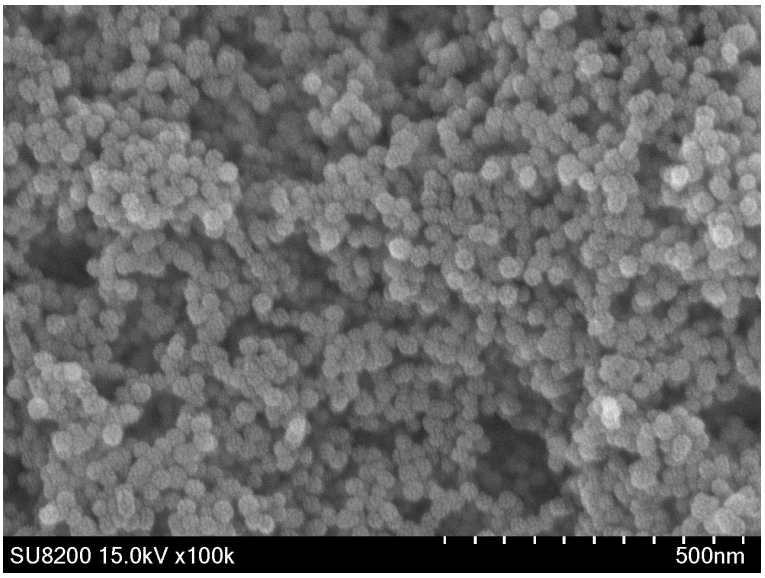

Fig.S4 SEM image of Fe_3O_4@SiO_2-Pt nanocomposites.

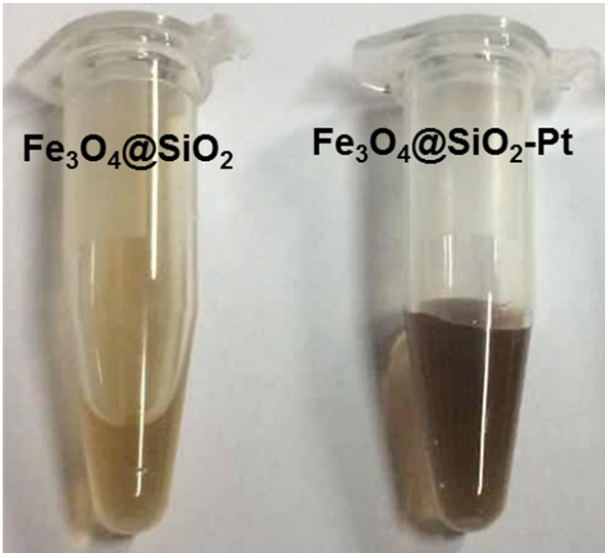

Fig.S5 Photo images of $Fe_3O_4@SiO_2$ and $Fe_3O_4@SiO_2$-Pt nanocomposites.

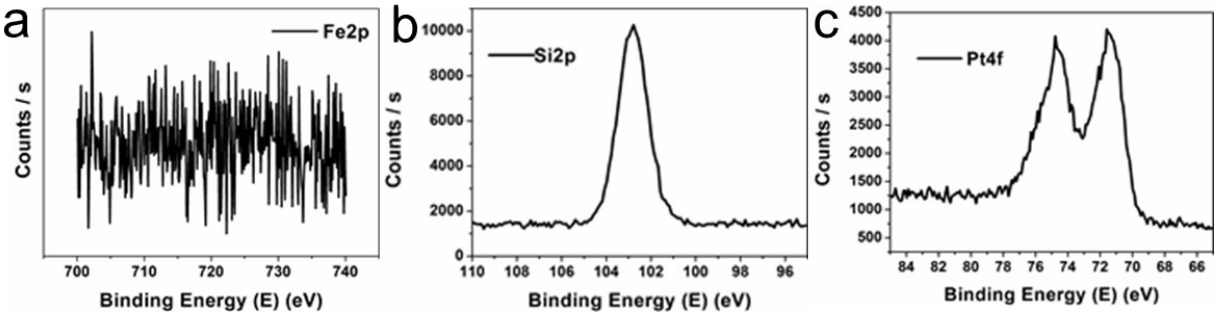

Fig.S6 XPS of $Fe_3O_4@SiO_2$-Pt nanocomposites.

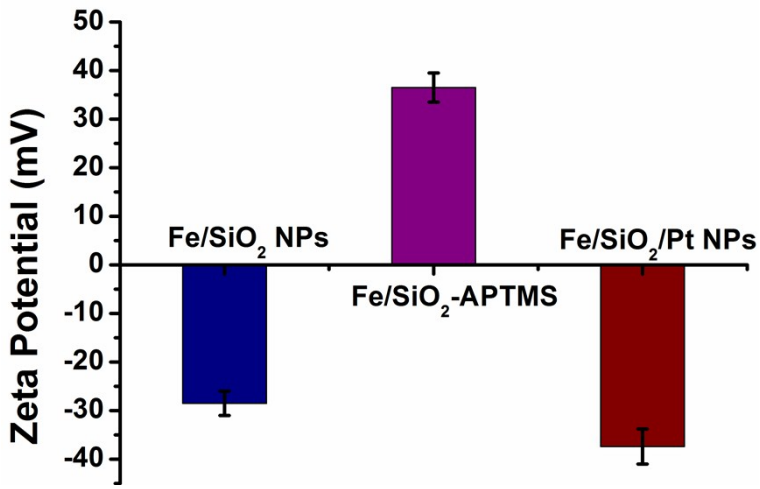

Fig.S7 Zeta potential analysis of Fe_3O_4 with various modification.

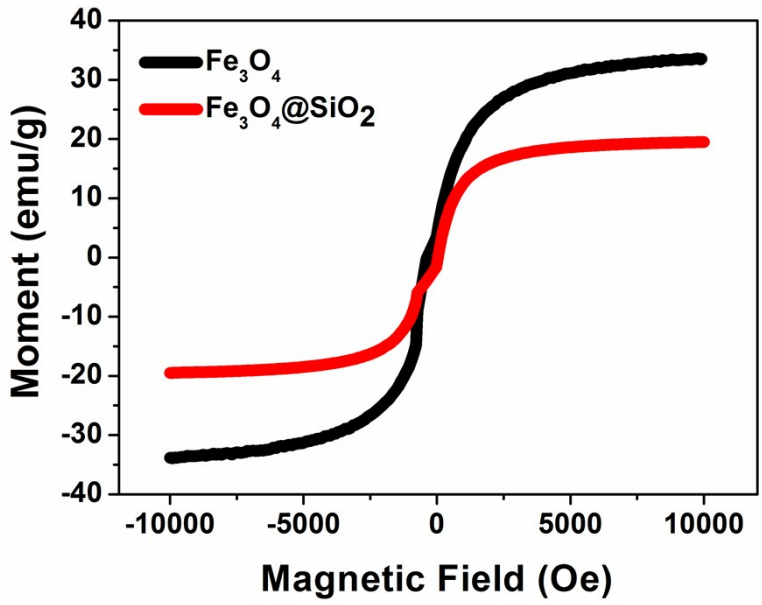

Fig.S8 The M (H) hysteresis curve for Fe_3O_4 and Fe_3O_4@SiO_2 NPs.

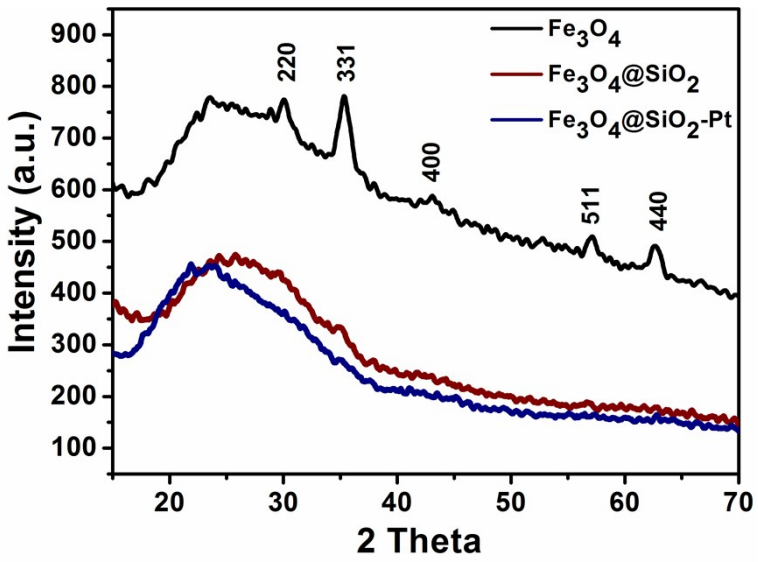

Fig.S9 XRD of Fe_3O_4@SiO_2-Pt nanocomposites.

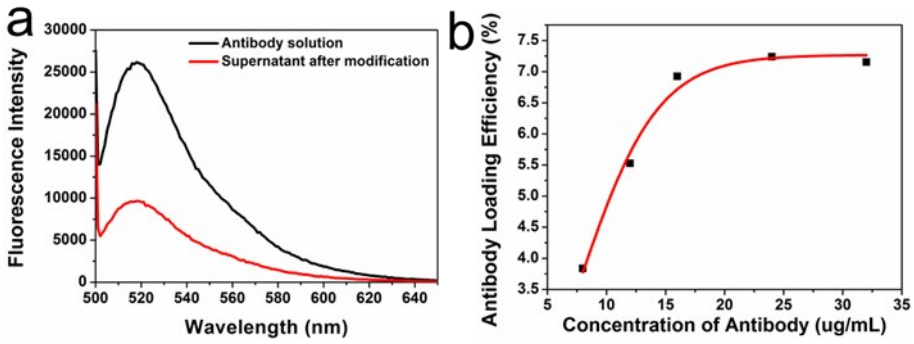

Fig.S10 Anti-*S.aureus* antibody modification of Fe_3O_4@SiO_2-Pt nanocomposites.

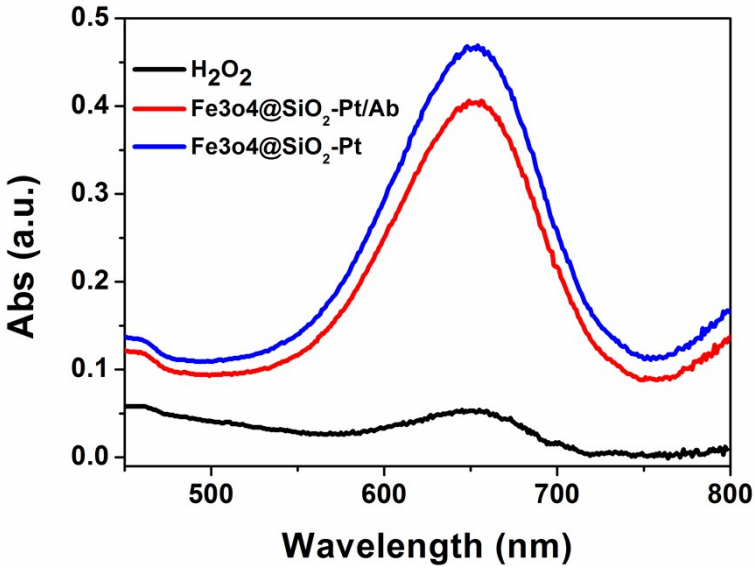

Fig.S11 UV-Vis absorption spectra of oxidize TMB treated with various samples.

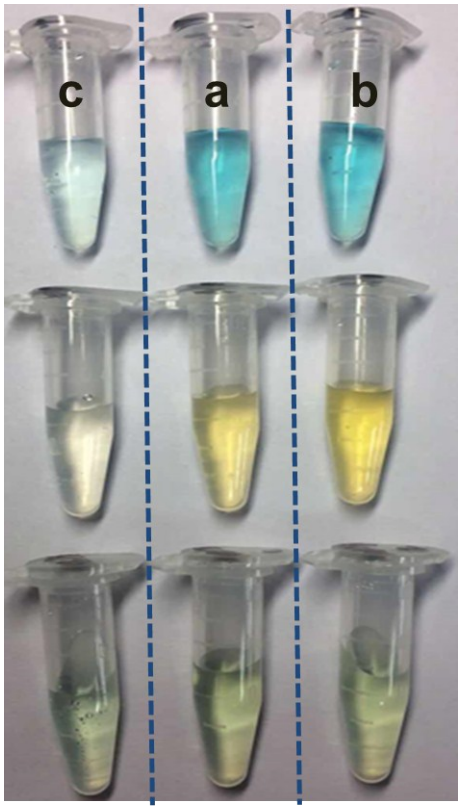

Fig.S12 Photo images of color changes treated with Fe_3O_4@SiO_2-Pt (a) and Fe_3O_4@SiO_2-Pt/Ab (b), (c) negative control.

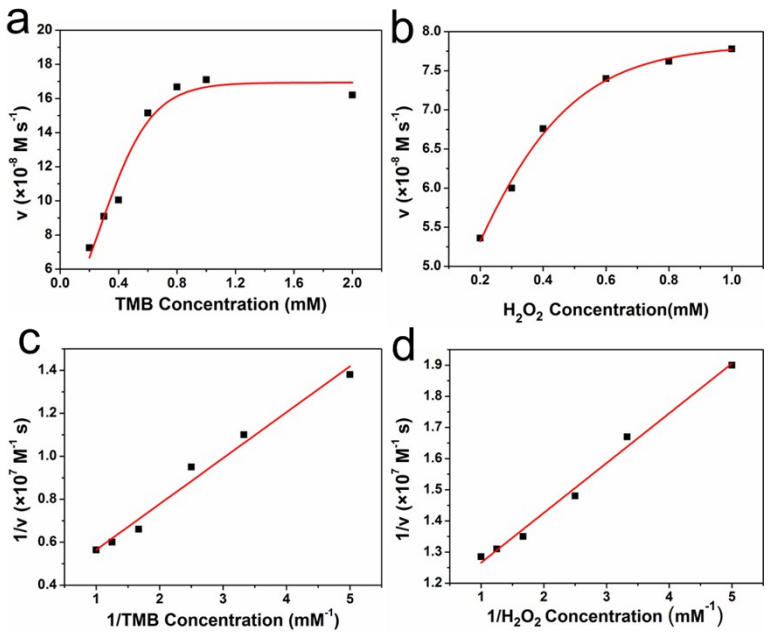

Fig.S13 Steady-state kinetic analysis using Michaelis-Menten model (a, b) and Lineweaver-Burk model (c, d) for Fe_3O_4@SiO_2-Pt nanocomposites.

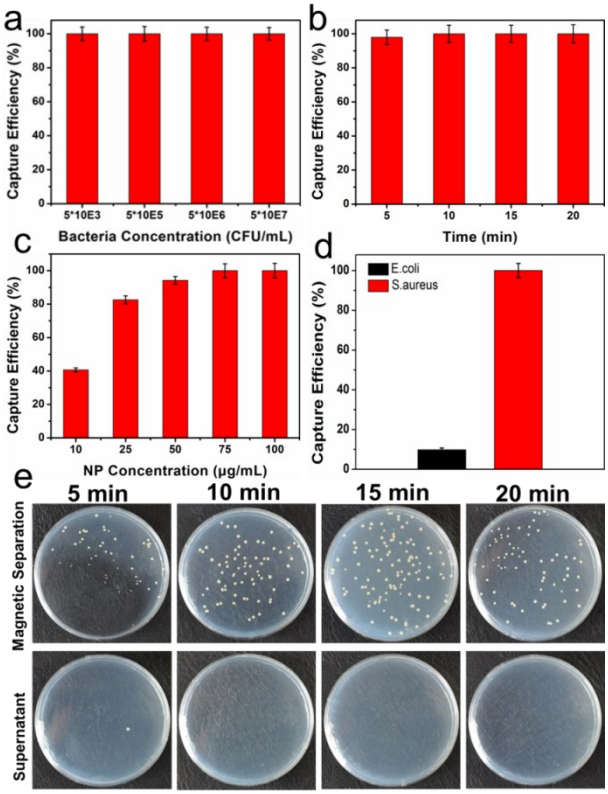

Fig.S14 Bacteria separation ability of Fe_3O_4@SiO_2-Pt nanocomposites.