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Synthesis of SO_4^{2-}-Fe_3O_4/FeS coating catalyst on TC4 titanium alloy for enhanced Fenton-like degradation of phenol

Xiao Zhang[1], Jiankang Wang[2], Zhongping Yao[1]*, Changju Chen[1], Yang Zhou[1] and Zhaohua Jiang[1]

[1]School of Chemistry and Chemical Engineering, State Key Laboratory of Urban Water Resource and Environment, Harbin Institute of Technology, Harbin 150001, China

[2]College of Materials Science and Engineering, Yangtze Normal University, Chongqing 408100, China

**Corresponding authors.*

yaozhongping@hit.edu.cn

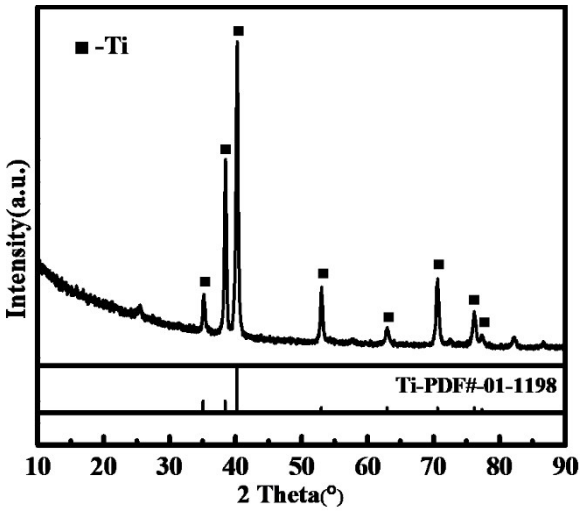

Fig. S1 XRD patterns of PEO coatings before S modification

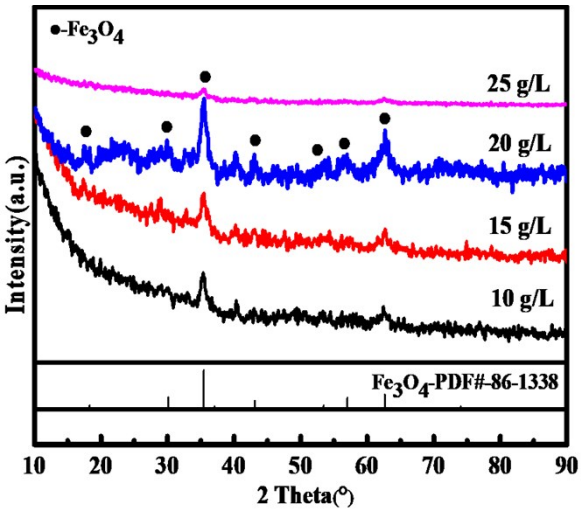

Fig. S2 XRD patterns of PEO coatings prepared with different contents of $Na_2S_2O_3 \cdot 5H_2O$. (Other condition: 15 g/L $K_3[Fe(CN)_6]$)

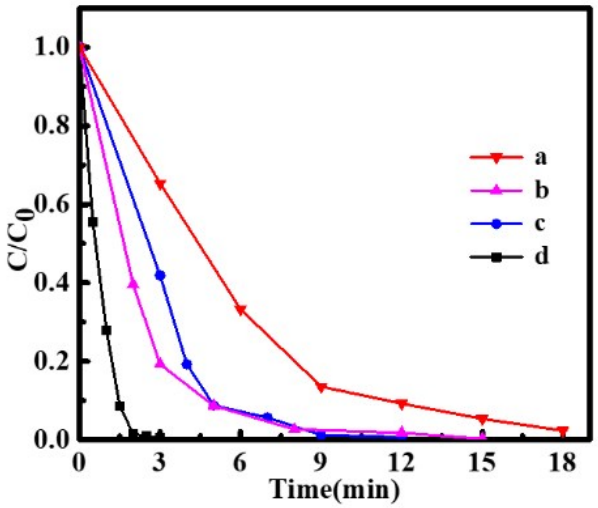

Fig. S3 Degradation curves of phenol by PEO coatings prepared with different iron and sulfur sources: 15 g/L $K_3[Fe(CN)_6]$, 15 g/L $Na_2S_2O_3 \cdot 5H_2O$ (a), 20 g/L $K_3[Fe(CN)_6]$, 15 g/L $Na_2S_2O_3 \cdot 5H_2O$ (b), 15 g/L $K_3[Fe(CN)_6]$, 20 g/L $Na_2S_2O_3 \cdot 5H_2O$ (c) and 20 g/L $K_3[Fe(CN)_6]$, 20 g/L $Na_2S_2O_3 \cdot 5H_2O$ (d)

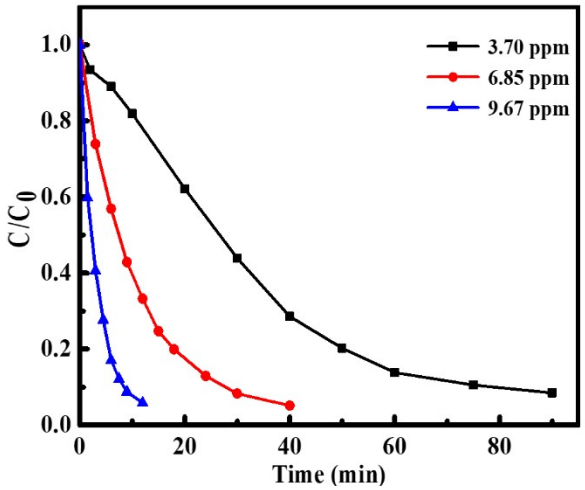

Fig. S4 Homogeneous Fenton degradation of phenol at different Fe^{2+} concentrations. (Other conditions: pH 6.0, H_2O_2 6 mmol/L, initial concentration of phenol 35 mg/L, reaction temperature 30℃)

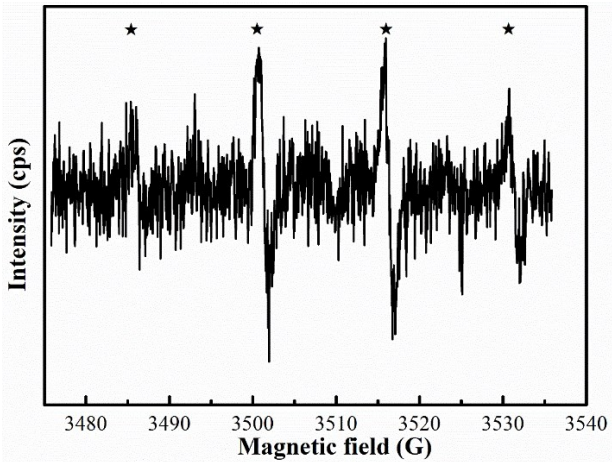

Fig. S5 EPR spectrum of DMPO-·OH in PEO coating/H_2O_2 system