# Supplementary Information

# MIL-100(Fe)/silica gel: controllable preparation and photocatalytic activation of peroxydisulfate for tetracycline hydrochloride degradation

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**Materials and instrumentation**

All reagents and solvents were analytical grade and used without any further purification. Ferric chloride ($FeCl_3$) was purchased from Aladdin. Trimesic acid ($H_3BTC$), Histidine (His), and tetracycline hydrochloride (TH) were purchased from Macklin. Ethanol (EtOH), methanol (MeOH), t-butanol (TBA), hydrochloric acid, N, N-dimethylformamide, ammonia and dimethyl silicone oil were purchased from Xilong Technology Co., Ltd. Tetraethoxysilane was purchased from Adamas. Triethanolamine (TEA) was purchased from Greagent. High purity nitrogen ($N_2$) was purchased form Huayou Special Gas Co., Ltd. Powder X-ray diffraction patterns (XRD) of the products were obtained on a Bruker D8 Focus diffractometer equipped with Cu Kα radiation and a Lynx Eye detector. Field-emission scanning electron microscopy (SEM) images were observed on a Hita chisu8010 scanning electron microscope. Thermogravimetric analyses (TGA) were performed with a Netzsch STA 449 F3 instrument under flowing air with a heating rate of 10 °C $min^{-1}$. $N_2$ adsorption measurements were performed with a Micromeritics ASAP2020 instrument surface area analyzer at 77 K. The Brunauer-Emmett-Teller (BET) method was used to calculate the specific surface area. The concentration of TH was measured by UV-vis spectroscopy (UNICO UV-4802S).

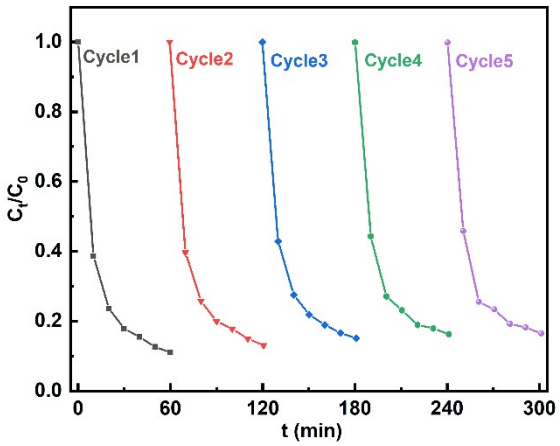


Fig. S1 The cycling performance of SM30.