

Supplementary materials

Fig.S1

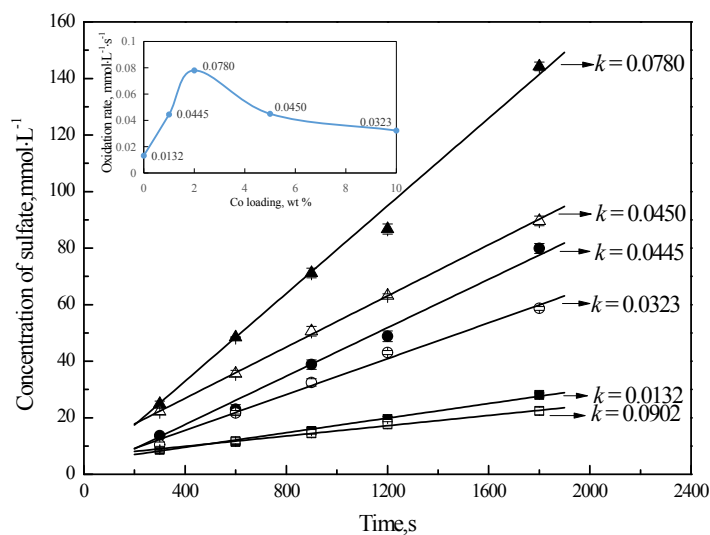


Fig.S1 Effect of cobalt loading on catalytic performance: \square in the absence of Co-SBA-15 catalyst; \blacksquare 0 wt%; \bullet 1wt %; \blacktriangle 2wt %; \triangle 5wt %; \circ 10wt %. $c_{S(IV)}=50\text{g}\cdot\text{L}^{-1}$, $c_{\text{cat}}=1\text{g}\cdot\text{L}^{-1}$, $Q=1\text{L}\cdot\text{min}^{-1}$, $P_{\text{O}_2}=0.21\text{atm}$, $T=318\text{K}$ and pH 8.0.

The oxidation reaction of MgSO_3 with Co-SBA-15 catalyst was maintained for 30 min as shown in Fig.S1 which displays the variation of the concentration of reaction product, sulfate, with the reaction time.

Fig.S2

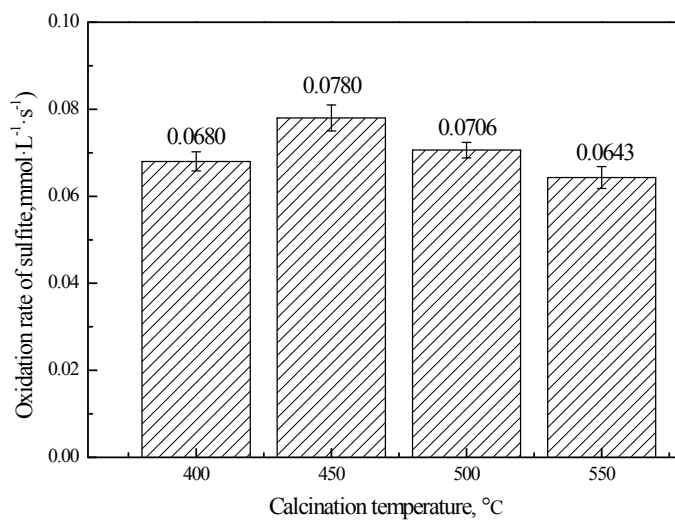


Fig.S2 Effect of calcinations temperature on the sulfite oxidation rate with the 2wt% Co-SBA-15.

We have conducted the experiments which showed the temperature effect on the oxidation of sulfite, indicating that 450°C is the optimum calcination temperature based on our experimental data as show in Fig.S2.

Fig.S3

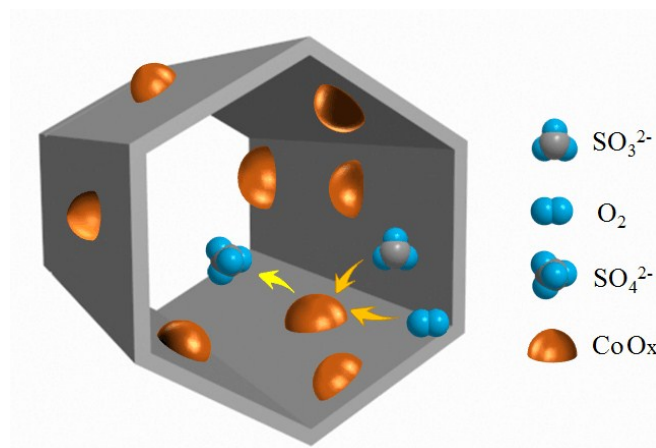


Fig.S3 Visual structure of Co-SBA-15

The majority of cobalt might be distributed in the interior of SBA-15 as showed in Fig.S3 according to the XPS analysis.