Supporting Information

Reactive adsorption desulfurization of thiophene over NiMo/ZnO, a new adsorbent with high desulfurization performance and sulfur capacity at moderate temperature

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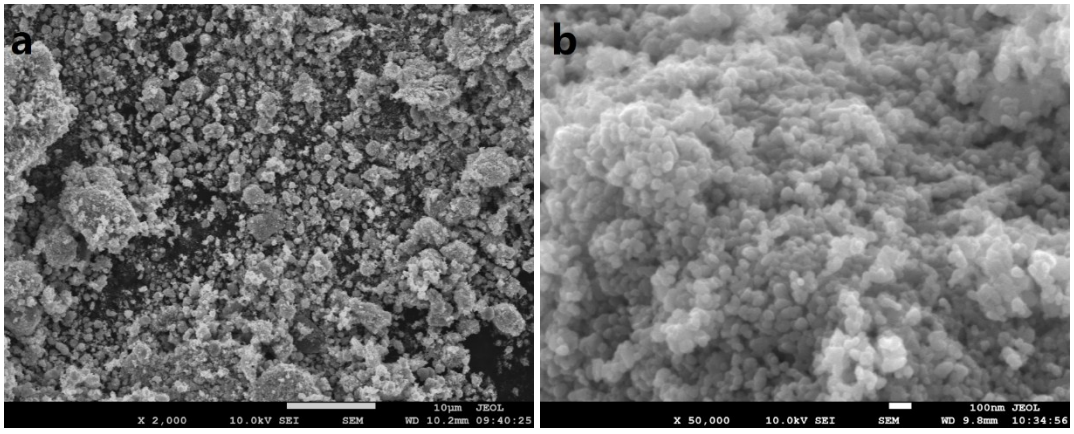

Fig. S1 The SEM photograph of ZnO support with magnification of

a)2000 times, and b)50000 times

$CuSO_4$ aqueous solution can react with H_2S and form black CuS precipitation. It is an effective indicator to detect accumulated amount of trace H_2S. In this work, 0.1 mol/L $CuSO_4$ aqueous solution was prepared as follow: 16.0 g $CuSO_4$ dissolved with deionized water then 1 ml of sulfuric acid (98%) was added into the solution to prevent the hydrolysis of $CuSO_4$. Finally, the mixed solution was transferred to 1000 ml volumetric flask and filled with deionized water.

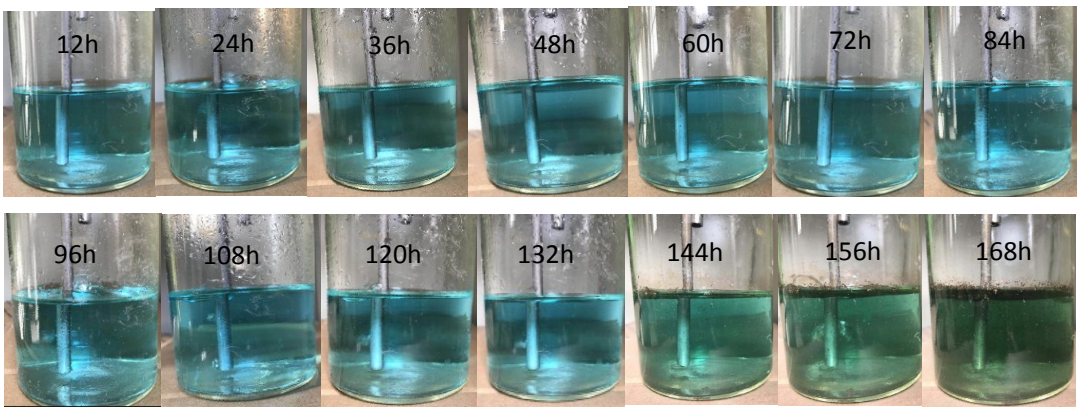

Fig. S2 H_2S in tail gas detected by $CuSO_4$ aqueous solution over 3Ni7Mo/ZnO-280.

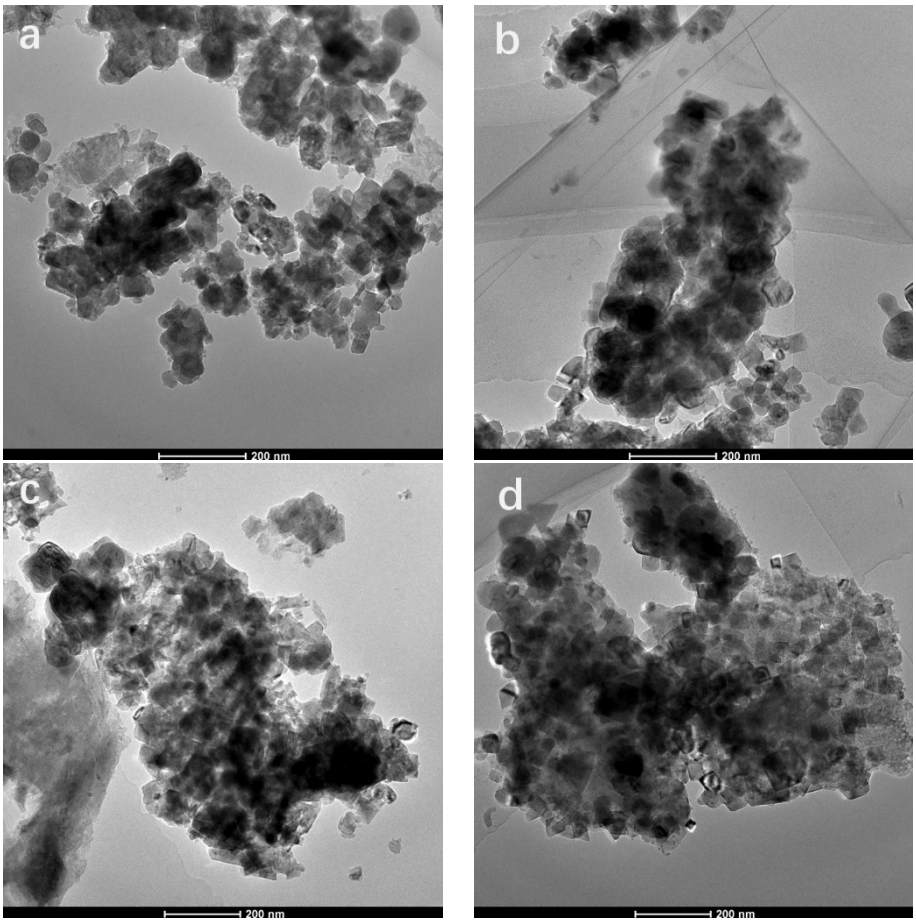

Fig. S3 Representative TEM imagines of used 3Ni7Mo/ZnO adsorbent (a) 3Ni7Mo/ZnO-280, (b) 3Ni7Mo/ZnO-340, (c) 3Ni7Mo/ZnO-400, (d) 3Ni7Mo/ZnO-500.