The effect of aluminum content in Cu-ZnO-Al_2O_3 during adsorptive desulphurization

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The adsorbent, Cu-ZnO-Al_2O_3, with different aluminum content has been investigated to elucidate its adsorptive removal efficiency of sulfur from components like dimethylsulfide (DMS), tetrahydrothiophene (THT), t-butylmercaptan (TBM) and H2S. The removal capacity increased up to 15 mol.% Al in Cu-ZnO-Al_2O_3 and then decreased sufficiently up to 30 mol.% Al. These different adsorbents were characterized and their activity variation was explained by reducibility of copper oxides and metallic surface of copper.