

### The sulfidation properties of Al-based sorbent promoted with molybdenum and nickel in various hot coal gas composition

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The sulfur removing capacities of Al-based sorbents prepared promoted with molybdenum and nickel were tested in various hot coal gas compositions ( $H_2S$ ,  $CO_2$ ,  $CO$ ,  $H_2$  and  $N_2$ ) using a fixed-bed reactor at 650°C. Firstly, the sulfur removing capacities of Al-based sorbents were tested in the Shell and Texaco process conditions. Also, the concentrations of the  $H_2S$  and  $CO_2$  gases were fixed to 1 % and 2 %, and those of  $H_2$  and  $CO$  gases were changed from 0% to 55%, respectively. The sulfur removing capacity of Al-based sorbent was not affected with the concentration of  $CO$  gas. However, the sulfur removing capacity was a little decreased by absence of  $H_2$ . The results showed that  $H_2$  gas. The sulfur removing capacity of Al-based sorbent was not affected by gas condition much more eventhough commercial sulfidation sorbents were affected by  $H_2$  and  $CO$  gases.