

***On the reaction kinetics of H₂S removal from syngas
with ZnO at high temperatur***

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Abstract

The reaction kinetics of the H₂S removal from syngas at high temperature was studied in a thermo gravimetric analyzer. A commercial sorbent consisting in Zinc Oxide pellets was used as the solid reagent. The gas stream was a Nitrogen and Hydrogen Sulphide mixture, where this last compound was present at a concentration similar to that usually found in syngas. Two different kinds of experimental tests were carried out. In the first set of experiments, the pulverized sorbent was used to neglect the influence of diffusion phenomena allowing to calculate the surface chemical reaction. The whole pellet was used for the following tests and the results obtained (conversion vs. time) were simulated by means of grain model.

Keywords: Syngas; Hydrogen Sulphide; Sorption; Zinc Oxide; High Temperature