

عنوان مقاله:

Influence of shaping condition on carbothermal reduction of extruded barite-coke mixture by using new modeling reaction kinetics

محل انتشار:

چهاردهمین کنگره ملی مهندسی شیمی ایران (سال: 1391)

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خلاصه مقاله:

The reduction rate of barite to barium sulfide is basically affected by contact surface areas of barite and coke particles and compaction of barite to barium sulfide starting materials. This requirement causes to apply the extrusion technique to improve contact surface area. In the present study the effect of moisture content of extruded barite and coke mixture on kinetic of carbothermal reduction was investigated. The shaped samples in the form of discs were isothermally heated at different temperatures in the range of 800-950 °C and the conversion of barite was measured by iodometry method. The reduction data were analyzed by using a surface reaction model and frequently factor and activation energy were calculated to evaluate reduction mechanism. It was found that the decrease in moisture content of paste significantly improves the active sites density due to increase in contact surface areas of coke and barite particles. This phenomenon promotes the reduction rate considerably

کلمات کلیدی:

Reduction kinetic, Barite, Moisture, Extrusion, Gasification

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