

材料科学与工程

## 钙基吸收剂微观结构特性及其反应性能

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**摘要** 在小型流化床反应器中对5种钙基吸收剂的脱硫反应性能进行了实验研究, 并利用扫描电镜和压汞分析等方法对吸收剂反应前后的微观结构进行了分析. 结果发现石灰石吸收剂的比表面积大约是贝壳颗粒的4~5倍, 但平均孔径却呈现出相反的趋势, 石灰石吸收剂的最佳脱硫温度为900 ℃左右, 而贝壳吸收剂最终转化率随着温度的升高而增大, 在950 ℃下表现出了较好的硫化性能. 研究发现吸收剂的孔结构参数是影响脱硫反应性能的主要因素.

**关键词** [吸收剂](#) [微观结构](#) [脱硫](#)

分类号

## MICROSTRUCTURE AND SULFATION CHARACTERISTICS OF CALCIUM-BASED SORBENTS

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### Abstract

In this work, three types of limestone and two types of shell were chosen as SO<sub>2</sub> sorbents. The physical and chemical properties of the sorbents were characterized by scanning electron microscope (SEM) and mercury porosimeter. Their sulfation characteristics were tested on a bench-scale fluidized bed reactor. Results showed that the surface area of the limestone was four or five times compared to that of the shell. However its mean pore radius showed an opposite trend. The optimum sulfation temperature of the limestone was about 900 ℃. For the shells, CaO conversion rate increased with temperature. It was found that the pore structural parameters played an important role in CaO conversion.

**Key words** [sorbent](#) [microstructure](#) [sulfation](#)

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