光谱吸收硫化氢气体浓度传感器

作　者：唐东林, 王莹, 郭峰, 赵东

单　位：西南石油大学机电工程学院

基金项目：石油天然气装备教育部重点实验室开放基金,四川省教育厅科研项目

摘　要：

提出一种基于红外吸收光谱测量法检测硫化氢气体浓度的方法。分析了硫化氢气体近红外光谱吸收特性，为消除光源不稳定及光电器件的热零点漂移、零点漂移对测量准确度的影响，基于差分吸收检测法设计了硫化氢气体浓度传感器，对H2S气体浓度检测进行了实验研究，实验表明该传感器的测量灵敏度可达10ppm。

关键词：红外光谱；差分吸收; 硫化氢气体；浓度检测；光纤传感器

Optical h2s Gas Sensor Based on Spectrum-absorption

Author's Name:

Institution:

Abstract:

A novel optical h2s sensor based on infrared absorption has been presented. The absorption spectrum of h2s gas has been mearsured and analysed. In order to eliminate the influence of instability of light source, thermal zero shift and zero shift of photoelectric device on the precision, the optical h2s sensor is designed using the differential absorption technology. The experimental results show that the optical h2s sensor has steady performance, high sensitivity, good repeatability. we demonstrate the capability of the sensor achieving a detection limit of about 10 ppm..

Keywords: infrared Spectrum; differential absorption; h2s gas, concentration detection；　optical sensor

投稿时间：**2009-09-19**

查看pdf文件