## عنوان مقاله:

Growth Kinetic Survey in Biodesulfurization of Natural Gas

## محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: 1390)

تعداد صفحات اصل مقاله: 8

## نویسندگان:

Alemian - *Biotechnology Lab., Faculty of Chemical Engineering, Noushirvani University of Technology, Babol, Iran*

Ghasem D. Najafpour - *Biotechnology Lab., Faculty of Chemical Engineering, Noushirvani University of Technology, Babol, Iran*

Ali-Asghar Ghoreyshi - *Biotechnology Lab., Faculty of Chemical Engineering, Noushirvani University of Technology, Babol, Iran*

Mohsen Jahanshahi - *Nanobiotechnology Lab., Faculty of Chemical Engineering, Noushirvani University of Technology, Babol, Iran*

## خلاصه مقاله:

The present study described here is focused on biodesulfurization of natural gas in a batch culture using active microorganisms. The microorganisms used for the removal of hydrogen sulfide were isolated from a local hot spring. The experiments were conducted with mixed gas at initialpressures of 1 to 1.8atm. Three kinetic models such as; Andrew, Logistic and Monod models in a batch culture were used to describe the microbial growth and substrate utilization. At low pressure (1atm), the bacterial behavior was substrate related and growth dependent. With gas pressure of1.2atm, maximum cell dry weight of 3.136 g/l was obtained with Logistic model. The obtained regression values for Logistic model were reasonably acceptable for all initial gas pressures. As the gas pressure was increased to 1.8atm, the inhibition coefficient may be dominated in growthkinetic. Andrew's equation was also able to predict inhibition constant; as the gas pressure increased the inhibition coefficient increased

## کلمات کلیدی:

Biodesulfurization, Hydrogen sulfide, Kinetic parameters, Logistic, Monod, Andrew's model