

عنوان مقاله:

Optimization of Hydrogen Sulfide Reactive Absorption in Spray Column by Response Surface Methodology

محل انتشار:

كنفرانس بين المللى مهندسى، هنر و محيط زيست (سال: 1393)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Amir Rahimi - Associate Professor of Department of Chemical Engineering, College of Engineering, University of ... Isfahan, Isfahan ۸۱۷۴۶–۷۳۴۶۱, Iran

Saied Nouri Khorasani - Associate Professor of Department of Chemical Engineering, Isfahan University of . Technology, Isfahan ארושא-ארוטא. Iran

خلاصه مقاله:

In the current study, hydrogen sulfide (H2S) removal from gas streams containing light hydrocarbons was performed in a spray column by reactive absorption into sodium hydroxide solution. The influence of operating variables such as solution pH, solution temperature and liquid-to-gas volumetric ratio was investigated on the H2S removal efficiency. Response surface methodology (RSM) was applied to investigate the individual and interactive effects of the independent operating variables on the H2S removal efficiency as the response. RSM was employed to optimize the operating variables which were effective on the response. In the experiments, the operating variables of solution pH, solution temperature and liquid-to-gas volumetric ratio were varied in the range of 12-14, 40-60°C and 15×10-3-30×10-3, respectively. The maximum of removal efficiency was obtained 99.4±0.1% with employing optimal operating variables of pH 13.6, 42.3 °C and 21.8×10-3 of liquid-to-gas volumetric ratio predicted by RSM polynomial model. A very satisfactory compatibility is observed in the comparison of experimental data and second-order response surface ...modeling predictions

کلمات کلیدی:

Hydrogen Sulfide, Reactive Absorption, Response Surface Methodology, Spray Column

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/372440

