## Effects of Residence Time on Selective Absorption of Hydrogen Suphide

Authors : Dara Satyadileep, Abdallah S. Berrouk

**Abstract :** Selective absorption of Hydrogen Sulphide (H2S) using methyldiethanol amine (MDEA) has become a point of interest as means of minimizing capital and operating costs of gas sweetening plants. This paper discusses the prominence of optimum design of column internals to best achieve H2S selectivity using MDEA. To this end, a kinetics-based process simulation model has been developed for a commercial gas sweetening unit. Trends of sweet gas H2S & CO2 contents as function of fraction active area (and hence residence time) have been explained through analysis of interdependent heat and mass transfer phenomena. Guidelines for column internals design in order to achieve desired degree of H2S selectivity are provided. Also the effectiveness of various operating conditions in achieving H2S selectivity for an industrial absorber with fixed internals is investigated.

**Keywords :** gas sweetening, H2S selectivity, methyldiethanol amine, process simulation, residence time **Conference Title :** ICCBE 2015 : International Conference on Chemical and Biochemical Engineering **Conference Location :** Paris, France **Conference Dates :** March 30-31, 2015