Kinetics of Copper Precipitation by H_2S from Sulfate Solutions

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ABSTRACT

The kinetics of copper precipitation by H_2S from sulfate solutions were investigated by bubbling the gas through an aqueous solution. It was observed that the rate of precipitation increases as the solution pH increases. It was shown that the reaction rates and mass transfer coefficients were increased by either increasing the gas flow rates with constant bubble diameter or by decreasing the bubble diameter at constant gas flow rates, resulting from the increased interfacial area between gas and liquid phases. The average diffusion coefficient of H_2S was calculated from the experimental data and was found to be 1.987×10^{-9} m^2 s^{-1} which is very close to that in water (1.61×10^{-9} m^2 s^{-1}).