Optimization of Cr(VI) removal by sulfate-reducing bacteria using response surface methodology

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\textbf{ABSTRACT}

The aim of this work was to optimize Cr(VI) removal using sulfate-reducing bacteria from wastewater. Three effective factors including initial pH, initial Cr(VI) concentration, and inoculation percentage were optimized using a central composite design of response surface methodology. The optimum conditions were initial pH 7.5, initial Cr(VI) concentration 130 mg/l, and inoculation percentage 7.75%, and the maximum Cr(VI) removal was 82%. The kinetics study of Cr(VI) removal showed the pseudo-first-order model described experimental data better and was selected as an overall kinetic Cr(VI) removal.

\textit{Keywords:} Cr(VI); Sulfate-reducing bacteria; Response surface methodology; Optimization; Kinetic

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