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UNCHALEE CHANTAWANNAKOOL : CHROMIUM REMOVAL BY CRYSTALLIZATION IN FLUIDIZED BED PROCESS. THESIS ADVISOR : ASSIS. PROF.SUTHIRAK SUJARITTANONTA, Ph.D. 109 pp.
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This research was a study of optimum condition and efficiency of chromium removal by crystallization in fluidized bed process. Chemical used for precipitation was sodium hydroxide. Column used for experiment was made of acrilic, 5 cm. diameter, height 3.45 m., and filled with sand size 0.8 - 1.2 mm. at bed height 1, 1.5, 2 m. under controlling conditions of pH levels 8.5, 9.0, 9.5. Wastewater was synthesized to have 5 levels of chromium concentration which were 5, 10, 50, 100, 200 mg/l.

It was found that bed height and pH were important parameters in chromium removal. Optimum pH was 9.0. Maximum chromium removal efficiency occurred at 2 m. of bed height, removed chromium 45-60% except at chromium concentration of 200 mg/l. Because of hydroxide concentration had insufficient for crystallization.

Chromium removal mechanisms of the process were mass transfer and crystallized on sand surface. Sodium hydroxide, produced hydroxide sludge which was loosely formed on sand surface. Therefore, high suspended solids was found in the effluent.