

عنوان مقاله:

Removal of phosphorus and chemical oxygen demand from excess sludge supernatant using of ultrasound waves

محل انتشار:

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خلاصه مقاله:

The use of ultrasound is one of the most studied methods in treatment of water and wastewater. This study was going to remove pollutants from the supernatant of excess sludge by using of ultrasound. Initial raw supernatant with COD equal to ۱۶۰۰ mg/L and phosphorous equal to ۸۰ mg/L was exposed to ultrasound. The experimental design was used to determine the experiments with variables including time (۱.۵-۹.۵ h), ultrasonic power (۴۰-۳۶۰ w), and the volume of sample (۲۰-۱۸۰ mL). COD and phosphorous were the responses, those were investigated in this research. Based on the Response Surface Methodology (RSM), a model for COD and phosphorous removal was obtained with a ۹۵ % confidence interval. The optimized removal of COD (۹۷.۳۹ %) and phosphorous (۹۸.۷۳ %) was observed. According to the results, ultrasonic waves is a good way to remove COD and phosphorus from sludge. This method can be used .in wastewater treatment plants for treatment of supernatant of excess sludge

کلمات کلیدی:

Ultrasonic, Supernatant, Response Surface Methodology, COD, Phosphorus

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