

Preparation and Performance Evaluation of Green Chlorine-Free Coagulants

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Abstract : Coagulation/flocculation is regarded a simple and effective wastewater treatment technology. Chlorine-containing coagulants may release chloride ions into the wastewater, causing corrosion. A green chlorine-free coagulant of polyaluminum ferric silicate (PSAF) was prepared by the copolymerization method to treat oily refractory wastewaters. Results showed that the highest removal efficiency of turbidity and chemical oxygen demand (COD) achieved 97.4% and 93.0% at a dosage of 700 mg/L, respectively. After PSAF coagulation, the chloride ion concentration was also almost the same as that in the raw wastewater. Thus, the chlorine-free coagulant is highly efficient and does not introduce additional chloride ions into the wastewater, avoiding corrosion.

Keywords : coagulation, chloride-free coagulant, oily refractory wastewater, coagulation performance

Conference Title : ICEST 2021 : International Conference on Environmental Science and Technology

Conference Location : Singapore, Singapore

Conference Dates : September 09-10, 2021