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OPTIMIZATION OF COAGULATION PROCESS IN HIGH TURBIDITY DISCHARGED FROM CERAMIC FACTORIES

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Abstract

This paper investigating the influence of new combination materials to flocculation - coagulation process by using booster coagulant with poly-aluminum chloride (PAC) to treated industrial wastewater carrying high level of turbidity which can reach more than 10000 NTU. The influence of the booster coagulant material like, Polymer coagulant was investigated following many previous researches which proved that these materials are very effective in case of low turbidity wastewater only. The polymer material has been used to increase the efficiency of the coagulation-flocculation process by improving many parameters during the treatment process. The influence on the settlement time and pH, COD, BOD, and turbidity removal were investigated and compared to conventional coagulants, the results of this experimental study shows that PAC coagulant can be enhanced by adding coagulant booster which increase the efficiency of turbidity removal to 99.94%, reducing the settle time to less than 3 minutes as well as improving the values of BOD, COD, pH, colors and other important parameters of the treated wastewater.

Keywords: Coagulant; Flocculation; wastewater; Poly-aluminum (PAC); Booster; Turbidity;