

TREATMENT OF ORGANIC COMPOUNDS OF LANDFILL LEACHATE IN VIETNAM BY COMBINING COAGULATION AND OZONATION PROCESS

Van Huu Tap, Trinh Van Tuyen

TÓM TẮT:

Landfill leachate is a problematic pollution that should be solved in Vietnam. This study presents some experimental results of removals of COD and color from landfill leachate by using coagulation and ozonation processes to determine the optimal reaction conditions. In pre-treatment stage by coagulation, the results showed that the removals obtained from three types of coagulants showed a maximum at the concentration of more than 3,000 mg L⁻¹ under the pH region from 7 to 8. The results also indicated that the significant removals of COD and color were obtained at the concentration of 1,500 mg L⁻¹ and that PAC was the most suitable coagulant for the pre-treatment stage. The removals of COD and color in the pre-treatment stage were approximately 30 and 70%, respectively. Ozonation process was applied to leachate after coagulation. The experiments are done with effective of pH between 5 and 10, reaction time between 20 and 120 min and the amount of COD between 3 and 12 kg. The optimum pH at ozonation was 8 and the highest removals of COD and color were 57 and 80%, respectively. In addition, the optimal reaction time and the amount of COD were 60 min and 3 kg, respectively.