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National Conference and Exhibition on Rural Innovations

COAGULATION-FLOCCULATION SEQUENTIAL WITH SOLAR PHOTOCATALYTIC PROCESSES USING CCRD FOR DAIRY WASTEWATER TREATMENT

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Abstract

The aim of present work focus on Treatment of dairy wastewater by coagulation and solar photocatalytic process using CCRD. Dairy industry uses much volume of water and release large quantities of wastewater to the environment. The dairy industry is the largest source of food processing which, total amount of from living area. The sample of dairy wastewater is collected from "Amman PaalPannai", Vattapaarai, Dindigul. The characterization of the dairy wastewater includes pH, hardness, electrical conductivity, TSS, TDS, COD and BOD. Dairy wastewater is treated by using natural coagulants such as Cicerarietinum and Moringaoleifera and TiO₂ (Titanium dioxide) using coagulation and solar photocatalytic process respectively. The combined coagulation process, removal efficiency from cicerarietinum 86%, moringaolifera 85% was done by the effective results obtained from the natural coagulants 92% of removal efficiency and for solar photocatalytic process and the obtained COD removal efficiencies varied from 31% to 69% and colour removal from 36% to 78% and the predicted values from the model matched these experimental results satisfactory.

Keywords---Dairy Wastewater, Natural Coagulation, Central Composite Design, Colour Removal, Chemical Oxygen Demand Reduction and Solar Photo Catalytic Process.



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