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Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal
SSM Institute of Engineering and Technology
Kalkithupatti Village, Sindalagundu (Po),
Palani - Road, Dindigul - 624 002.

SSM Institute of Engineering and Technology • DINDIGUL-624 002 •

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Coimbatore Institute of Information Technology,
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Phone: 0422-4377821

SSM Institute of Engineering and Technology • DINDIGUL-624 002 •

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal
SSM Institute of Engineering and Technology
Kuttathupatti Village, Sindalagundu (Po),
Palani Road, Dindigul - 624 002.

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

Selvabharathi Gopal[a] and S. Sheik Dawood[b]

[a]Department of Civil Engineering, SSM Institute of Engineering & Technology, Dindigul, India

[b]Department of Civil Engineering, SSM Institute of Engineering & Technology, Dindigul, India

Corresponding Author Email id: Selvabharathi Gopal and selthi2003@gmail.com

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 TiO_2 (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.

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal
SSM Institute of Engineering and Technology
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