

N.A. Rashidi\*, U.M.N. Eldemerdash\*

# Evaluation of Lime as an Aid for Coagulation – Flocculation Treatment of Textile Wastewater Effluent

## THE AUTHOR



The corresponding author, **Dr. Usama Mohamed Nour Eldemerdash**, graduated with a degree in chemical engineering from Minia University, Minia, Egypt, in 1997. He received a M.Sc. in 2002 and his Ph.D. in 2008 from the same

university. His recent research areas include gaseous fuel processing and storage (e.g., natural gas, hydrogen), LNG technology development, and industrial wastewater treatment. He has 11 years of experience in research as well as 5 years of experience in teaching. He is senior lecturer in the chemical engineering department of the Universiti Teknologi Petronas, UTP, Kuala Kangsar, Malaysia.

E-Mail: [usama\\_demerdash@petronas.com.my](mailto:usama_demerdash@petronas.com.my)

## ABSTRACT

The treatment of textile industry wastewater effluents represents a challenge in meeting the environmental standards of discharge limits. This is due to the stability of different dyestuff even when exposed to the most oxidizing processes. The coagulation and flocculation process shows good capability for this application. Ceramic materials, e.g., lime, represent a promising alternative for enhancing this process. There is a lack of information about the optimum operating parameters for different effluents. This is due to the fact that the optimum values are related to the type of dyestuff. This study evaluates experimentally the use of lime as a coagulant aid for synthetic wastewater containing Eriochrome Black T dyestuff. Optimum operating parameters were investigated, and the optimum values of pH, temperature, coagulant dose and coagulant aid were determined. The effects on turbidity, chemical oxygen demand and final pH are shown. The lime shows a good capability for being used as a coagulant aid with aluminum sulfate to remove Eriochrome Black T dyestuff from wastewater effluents. To achieve an effective treatment, the shown optimum operating conditions should be applied.

## KEYWORDS

coagulant aids, flocculation, coagulation, wastewater, ceramic, color removal  
 Interceram 61 (2012) [1-2]