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**INVESTIGATION ON THE USE OF A PRECIPITATION
METHOD TO REDUCE CHEMICAL OXYGEN DEMAND
(COD) IN AN INDUSTRIAL EFFLUENT**

BY

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ABSTRACT

The environmental pollution and the damage caused to living beings due to improper waste treatment methods have become a severe problem. Industries release a large quantity of organic liquid waste that contains polluting substances, which affect the environment.

Chemical Oxygen Demand (COD) is a parameter, which is utilized to assess the extent of pollution by organic matter. It gives an indication of the efficiency of the treatment process. The efficiency of the treatment process is expressed as COD removal, measured as a percentage removal of the organic matter.

The lime treatment is used to remove phosphate type pesticides, heavy metals and some dissolved organics. Lime treatment is used to remove food colouring, since the presence of calcium result in the formation of insoluble salts. And also some dissolved organics under go hydrolysis during the lime treatment.

A powerful oxidizing agent (potassium permanganate) oxidized substances remaining. Therefore the tolerance level of COD was achieved effectively by precipitation and oxidation followed by hydrolysis.

This study involves on the use of a powerful oxidizing agent such as permanganate to oxidize the hydrolyzed lecithin and ghee. The conditions for the treatment have been optimized. The conditions involve the use of $0.175 \text{ mol dm}^{-3}$ KMnO_4 solution and 5% w/v solution of lime. The filtrate obtained after precipitation of the calcium was found to possess a low level of COD.