

STUDIES ON
TEXTILE WASTE WATER TREATMENT

THE DISSERTATION SUBMITTED IN PARTIAL FULFILMENT
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MASTER OF ENGINEERING DEGREE
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ABSTRACT

In Sri Lanka the waste water discharged from most Textile Processing Factories to water bodies are found to be poorly treated or untreated. This may be due to reasons such as involvement of high capital and operation costs for treatment facilities, difficulties encountered in maintenance of mechanical and electrical equipments and the unawareness about the necessity of treatment of waste water. The non availability of literature regarding textile waste treatment may also be a reason for it. As such studies on treatment methods of textile waste water are very important.

In this report the author explains available literature on characteristics of textile waste water and its treatment methods and measurements related to waste water.

Laboratory studies were carried out for the removal of colour and C.O.D. from textile waste water.

Regarding the removal of colour several experimental methods were carried out based on the principle of coagulation and flocculation. For colour adsorption, powdered activated carbon and commercially available polyelectrolytes were used. The conventional jar test was employed in these experiments.  www.lib.mrt.ac.lk

Conventional activated sludge process was used in the removal of C.O.D. This was carried out by varying the influent C.O.D. values. A basic Laboratory scale activated sludge plant model complete with aeration tank, settling tank and other essential components was used for this purpose.

By adding powdered activated carbon to the waste water and carrying out flocculation and coagulation with alum, 100% removal of colour was achieved at certain dosages. Similarly removal of colour can be achieved by using polyelectrolytes also. Powdered activated carbon requirement varies from 100 mg. to 1000 mg. for 1 litre of waste water.

More than 80% of available C.O.D. could be removed by adopting conventional activated sludge treatment method with proper controls.

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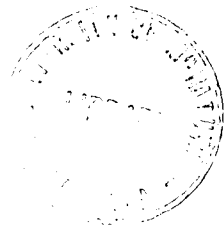
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ABBREVIATIONS

A	-	Absorbance
BOD	-	Biochemical Oxygen Demand (5d at 20 °C)
C	-	Centigrade
COD	-	Chemical Oxygen Demand
cm	-	Centimetre
Co	-	Cobalt
Cu	-	Cubic
d	-	day
F	-	Food
g	-	grams
GAC	-	Granular Activated Carbon
h	-	hour
Kg	-	Kilogram
l	-	litre
M	-	Micro-organisms
MLSS	-	Mixed Liquor Suspended Solids
MLVSS	-	Mixed Liquor Volatile Suspended Solids
M	-	Metre
mg	-	Milligram
Min	-	Minutes
mm	-	Millimetre
N	-	Normality
NTU	-	Nephelometric Turbidity Units
nm	-	nanometres
PAC	-	Powdered Activated Carbon



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Pt	-	Platinum
ppm	-	Parts Per Million
Rev	-	Revolutions
SS	-	Suspended Solids
S	-	Seconds
T	-	Transmittance



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