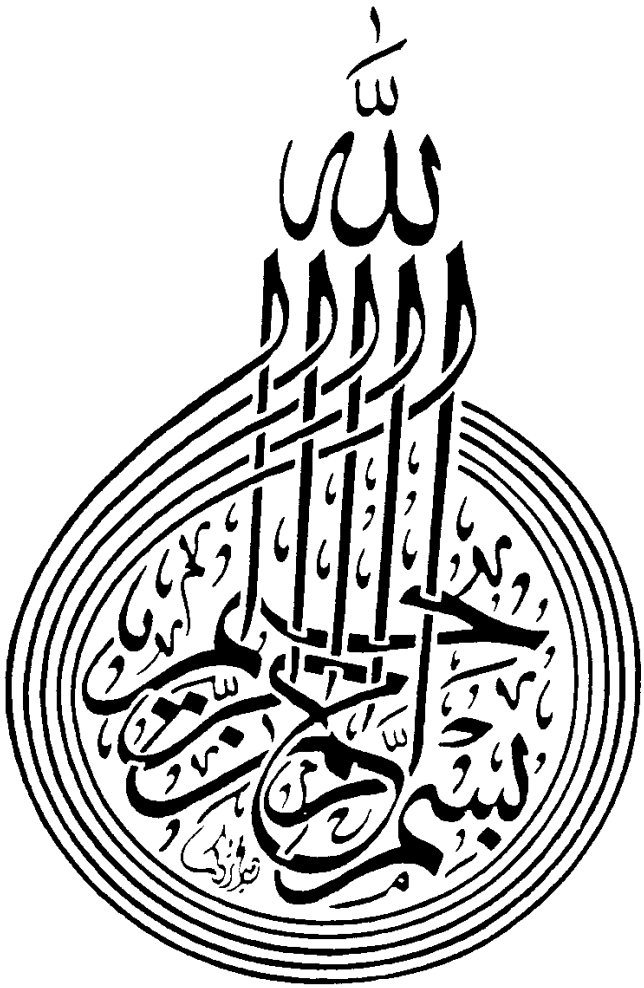

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CHEMICAL PRECIPITATION IN WASTE WATER TREATMENT

A Thesis
Submitted to the Faculty of Engineering
Ain Shams University for the Fulfillment
of the Requirement of M.Sc Degree in Civil Engineering

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MARCH 1996

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CHEMICAL PRECIPITATION IN WASTE WATER TREATMENT

BY

HALA AHMED HEGAZI

B.Sc. CIVIL ENGINEERING

FOR

THE M. Sc. DEGREE IN CIVIL ENGINEERING

(SANITARY ENGINEERING)

March 1996

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STATEMENT

This dissertation is submitted to Ain Shams University for the degree of M. Sc. in civil Engineering.

The work included in this thesis was carriedout by the author in the department of Faculty of Engineering , Ain Shams University .from November 1992 to March 1996.

No part of thesis has been submitted for a degree or a qualification at any other University or Institution .

Date : 21/3/1996

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Abstract

HALA AHMED HEGAZI
CHEMICHAL PRECIPITATION IN WASTEWATER TREATMENT

In the past studies numerous discussions have been done on chemical and physico-chemical treatment as aspects of coagulation and flocculation.
Coagulation and flocculation are effectively applicable to inorganic and organic suspended matters and precipitated metal ions without doubt.

This study discusses the removal of total suspended solids, volatile suspended solids and chemical oxygen demand from domestic wastewater using different methods of treatment as follows :

1- Plain sedimentation.
2- Chemical precipitation.
3- Chemical precipitation preceded by plain sedimentation.
4- Chemical precipitation preceded by aeration.

From the results of the four methods of treatment it was concluded that chemical precipitation using alum preceded by aeration gives the highest removal efficiency for the measured parameters (TSS , VSS & COD).
Taking into consideration that chemical precipitation previously treated by plain sedimentation (case three) give suitable removal efficiency at reasonable time and cost.
Accordingly, we propose the use of this method for increasing the efficiency of the existing sewage treatment plants in **Egypt** .

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