



**ABSTRACT BOOK OF  
INTERNATIONAL ENVIRONMENTAL SCIENCE  
SYMPOSIUM OF VAN 2014**

**04-07 JUNE 2014, VAN – TURKIYE**

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**YUZUNCU YIL UNIVERSITY**

**Çevre Sorunları Araştırma ve Uygulama Merkezi**

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### ADSORPTION OF METHYLENE BLUE ONTO COMMERCIAL AND DERIK CLAYS

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#### Abstract

Pollution, which damages to health significantly, have been taking place due to industrial activities that carried out in order to raise the standard of living of human beings. A significant part of these contaminations consist of toxic heavy metals and dyes.

Increase of usage of dyes in various industries leads to an increase in loads of colors in the resulting wastewater. Discharge of this wastewater without refinement impairs aesthetic appearance of receiving water medium and causes damage to aquatic life. This wastewater enabling reach of human body through receiving water medium has also carcinogenic and toxic effects on the people. According to the existing wastewater discharge standard, color is not a limiting parameter but treatment is vital when considered in terms of the environment and human health.

Dyes vary according to industries and industrial activities which are used. The industry branches in which most of the dyes used are; textile, paper, leather, rubber, pharmaceutical, food, cosmetics and paint industries. Especially considering rapid development of textile industry in our country, refining of colorful treatment is of paramount importance in view of environment and human health. For a long time it is known that clays adsorb dyes and heavy metals and therefore, in recent years, their use for the removal of these types of pollutants as adsorbent has gained importance. In this study, use of clays for removal of dye was investigated.



The purpose of this study is to recognize the danger of dyes due to industrial development, which started to become a great danger day to day able and investigate methods for removal of dyes from aqueous medium, where it has great influence. Clays are cheaper and easy to obtain, which make their use for the removal of dyes economically attractive. Therefore, in this study, two types of clays were used as an adsorbent. In this study, adsorption capacity of natural clay samples from Derik district of Mardin province and commercial clay samples for methylene blue dye was investigated.

Removal of dyes for commercial clay at 100 mg/L and at 25 °C was found to be 93 %, while that for natural clay at 100 mg/L was obtained as 97 %. In conclusion, it was found that, Na-montmorillonite clay, which is a commercial clay used in this study, and the raw clay obtained from Mardin – Derik adsorbed methylene blue dye in a yield of higher than 90 %.

**Key Words:** Clay, dye, adsorption.



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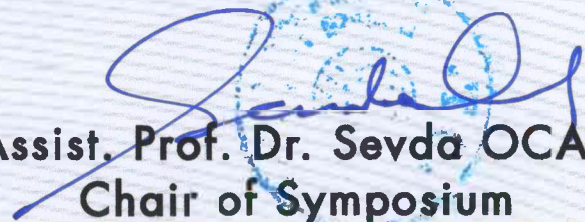
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**Gülen ÖNAL**

participated in the International Environmental Science Symposium  
of Van 2014, 4 - 7 June, and presented the paper

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