

Dyes and Its Removal from Aqueous Solution by Adsorption Using Orange Peel Powder: A Review

***A PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF***

Master of Science

In

Chemistry

By

SIDDHI PATEL

Under the guidance of

Dr. MITTAL THAKKAR



DEPARTMENT OF CHEMISTRY

PARUL INSTITUTE OF APPLIED SCIENCE

LIMDA-391760, VADODARA, GUJARAT, INDIA

2019-20

1. Abstract

Pollution created by textile dyeing operations attracts significant attention because an effluent containing a complex mixture of colored and potentially toxic compounds can be released with the discharged water. Developing dyes and dyeing conditions to reduce the amount of residual dye contained in any effluent has been one of many approaches to minimize this environmental impact. Disposal of textile effluents into nature is one of the major environmental concerns of a textile industry. Several biological, physical and chemical methods for degradation of textile effluents are being followed, but the real challenge is to find a method that is effective, comparatively fast and cost effective. Industrial, agricultural, and domestic activities of humans have affected the environmental system, resulting in drastic problems such as global warming and the generation of wastewater containing high concentration of pollutants. As water of good quality is a precious commodity and available in limited amounts, it has become highly imperative to treat wastewater for removal of pollutants. In addition, the rapid modernization of society has also led to the generation of huge amount of materials of little value that have no fruitful use. Such materials are generally considered as waste, and their disposal is a problem. The utilization of all such materials as low-cost adsorbents for the treatment of wastewater may make them of some value. In this review an effort has been made to give a brief idea about the low-cost alternative adsorbent like orange peel powder with a view to utilizing these waste/low-cost materials in the treatment of wastewater.

Keywords - Adsorption, color, dye, low- cost adsorbents, orange peel.