

Università degli Studi di Napoli Federico II



SCUOLA POLITECNICA E DELLE SCIENZE DI BASE
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MASTER'S THESIS IN ENVIRONMENTAL ENGINEERING

REMOVAL OF BISPHENOL A FROM AQUEOUS SOLUTION USING NATURAL CORK AS ADSORBENT

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ABSTRACT

In recent years, considerable attention has been focused on the removal of *bisphenol A* (BPA) from aqueous solutions by using alternative adsorbents derived from natural materials.

In this context, the aim of this study was chosen to explore BPA adsorption characteristics using natural cork as adsorbent.

Effect of various parameters such as contact time, initial BPA concentration and adsorbent dosage has been carried out in this study.

Isotherm studies were conducted on a laboratory scale and the data evaluated for compliance with Langmuir, Freundlich, Tekmin and Dubinin-Radushkevich isotherm models.

Equilibrium data fitted well with the Langmuir model.

The optimum conditions for the removal of BPA within the experiment range of variables studies were 10 mg/L of initial BPA concentration, 7.5 g/L of adsorbent dose and 24 hours of contact time. Under these conditions the maximum removal efficiency was 75%.

The pseudo-first order, pseudo second order and intraparticle diffusion models were used to describe the kinetic data. The data were best fitted with pseudo second order kinetic model.

The experimental activities of this study have been mainly carried out at the University College London (England)