

AHI EVRAN

*International Conference
on Scientific Research
Kırşehir Ahi Evran University*



*"Know how to forgive
when you are strong and superior
be gentle when you are angry and
be generous enough to give to others
even when you are in need"*

Ahi Evran

ABSTRACT BOOK

EDITOR:

Prof. Dr. Ahmet KAZANKAYA

ISBN: 978-625-7464-54-3



AHI EVRAN INTERNATIONAL CONFERENCE ON SCIENTIFIC RESEARCH

November 30 - December 1-2, 2021
Kırşehir Ahi Evran University

ABSTRACT BOOK

Editor:

Prof. Dr. Ahmet KAZANKAYA

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Issued: 08.12.2021

WWW.AHIEVRANCONFERENCE.ORG

ISBN: 978-625-7464-54-3

CONFERENCE ID

TITLE OF CONFERENCE

AHI EVRAN
International Conference on Scientific Research

DATE - PLACE

November 30 - December 1-2, 2021
Kırşehir Ahi Evran University

ORGANIZATION

Kırşehir Ahi Evran University
&
Institute of Economic Development and Social Researches



EDITED BY

Prof. Dr. Ahmet KAZANKAYA

COORDINATOR

Alina AMANZHLOVA

EVALUATION PROCESS

All applications have undergone a double-blind peer review process

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COMPARATIVE STUDY OF OIL ADSORBENTS USING CORN CHAFF AND COCONUT FIBRE

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ABSTRACT

The issue of oil pollution has been an important concern to oil producing nations of the world due to its serious environmental impact; therefore, necessary actions need to be taken to prevent or reduce this type of pollution and their environmental consequence. Most materials used for solving the pollution menace are effective and very expensive to procure due to the limited or scarcity of starting material and the processes of transforming such precursor to useful adsorbent. Natural organic sorbents are emerging as proper choice of oil spill clean-up due to their availability, low cost and eco-friendliness. In this study, adsorptive capability of a functionalized low cost effective corn chaff and coconut fibre were investigated and compared. Batch adsorption experiment which provides data for large scale adsorption or continuous adsorption systems was adopted. The adsorptive capability of these materials were subjected to various tests which include checking of the effect of sorbent contact time and adsorbent particle size on oil adsorption capacity as evaluation for the pure crude oil and mixture of crude oil and water removal. The result showed that coconut fibre is more effective in oil spill clean-up than corn chaff. The physical characterization of the raw adsorbent was determined in the laboratory while the chemical characterization of the raw and functionalized adsorbent was done using Fourier Transform Infra-Red (FTIR) analysis. This research has shown that both corn chaff and coconut fibres are potential adsorbents for remediation of oil pollution in order to help maintain clean and serene environment where such challenges are prominent.

Keywords: Oil spillage, Adsorption, Corn chaff, Coconut fibre, FTIR analysis