



3rd International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2020)

19-20 March 2020, Ankara, Turkey
[www. EurasianBioChem.org](http://www.EurasianBioChem.org)

➤ ORAL PRESENTATION

Synthesis and characterization of hexagonal boron nitride (hBN) for an effective removal of organic dyes: kinetics and equilibrium studies

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Abstract

In this study, hBN nanostructure is synthesized from boric acid for removal organic dyes in aqueous solution. The characteristic peaks of hBN are performed by using Raman and Fourier transform infrared (FT-IR) spectroscopies. Moreover, the morphology of hBN and particle size is determined by scanning electron microscopy (SEM) and transmission electron microscopy (TEM). During the studies, the various essential factors are investigated such as pH of the aqueous dye solution, initial dye concentration, adsorbent dose, and contact time. Further, the equilibrium isotherm and the kinetic models are studies for removal of Metanil Yellow (MY) and Victoria Blue B (VBB) anionic and cationic organic dye respectively. Under optimal condition, it is found removal of the 42.6 % Metanil Yellow (MY) and 90 % Victoria Blue B (VBB) from aqueous solution using by hBN nanostructure.

Keywords: Hexagonal Boron Nitride Nanostructure; Victoria blue B; Metanil Yellow; Adsorption Isotherm and Kinetic Models