

Extended Abstract

# Adsorption of Dyes from Aqueous Solutions Using Apatitic Materials <sup>†</sup>

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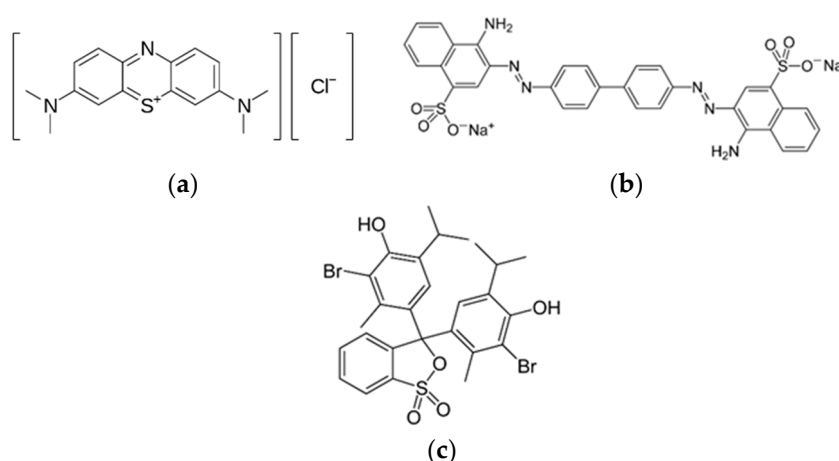
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Hydroxyapatite is a calcium phosphate biomaterial that is widely used to treat polluted water, soil, and air, due to its adsorption capacity [1]. Methylene blue (MB) (Figure 1a), a cationic dye, is frequently used in the leather industry for dyeing and printing. This dye is toxic to both humans and animals [2]. Bromothymol blue (BTB) (Figure 1c) is a sulfonphthalein dye, being one of the most widely used indicators to distinguish the acidity, alkalinity, or neutralization of an aqueous solution. Its removal from the environment is important due to the presence of azo groups from the dye component [3]. Congo red (Figure 1b) comes from the textile, printing, dyeing, paper, and plastic industries. This type of dye is toxic to most organisms, being suspected of carcinogenic and mutagenic effect [4].



**Figure 1.** Dyes used for the adsorption studies: Methylene blue (a), Congo red (b), and bromothymol blue (c).

The adsorption capacity of three apatitic materials were tested against the described dyes. The adsorption studies were performed by HPLC, while FTIR studies were conducted on the solids after the adsorption experiments.

In conclusion, the tested apatitic materials shown good adsorption capacities for the tested dyes.

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