

## عنوان مقاله:

Removal of anionic and cationic dyes in the best optimum conditions by the synthesized Nano-bio particles from wastewater

## محل انتشار:

دومین کنفرانس بین المللی توسعه پایدار، راهکارها و چالش ها با محوریت کشاورزی، منابع طبیعی، محیط زیست و گردشگری (سال: 1394)

تعداد صفحات اصل مقاله: 8

## نویسندگان:

,Yasaman Noorani Khojasteh - Department of chemistry, The Guilan University of Iran

,Roohan Rakhshae - Department of chemistry, The Guilan University of Iran

## خلاصه مقاله:

Banana peel form about 18- 33% of the whole fruit and are considered as a waste product. They are the good sources of polyphenols, carotenoids and other bioactive compounds which possess various beneficial effects on human health. Banana peel is also rich in dietary fibre, proteins, essential amino acids, polyunsaturated fatty acids and potassium. The purpose of this article is the most economical method for removing chemical dyes in wastewater. In this study, density, temperature, PH, contact time and adsorbent dose were tested. The obtained results are presented as graphs. Also, using the Langmuir and Vant Hoff equations, equilibrium and thermodynamics of absorption were investigated. First, removing the dye was tested by dried and banana peels. Removal of methylene blue dye by banana skin is much more than methyl orange. The result at a dose of 8(gr/l) to methyl orange adsorbent and adsorbent dosage of 1(gr/l) to methylene blue in room temperature and PH=7-8 and concentration of 20 (ppm) is as follows, MB>MO. In that conditions, removal of dye was tested by synthesized nanoparticles of Fe<sub>3</sub>O<sub>4</sub> attached to a banana peel. The result of FT-IR spectrum represents the connection of nanoparticles with pectin in plant. In this test, removal of MB is better than MO, too

## کلمات کلیدی:

anionic and cationic dyes, banana peel, isotherms, synthesized Nano-bio particles

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