

## عنوان مقاله:

Experimental Study on Biosorption of Methylene Blue Dye Using *Mucor hiemalis* biomass

## محل انتشار:

همایش بین المللی توسعه فناوری در نفت، گاز، پالایش و پتروشیمی (سال: 1398)

تعداد صفحات اصل مقاله: 7

## نویسندگان:

Arman shahbazi - Department of Chemical Engineering, Shahreza Branch, Islamic Azad University, Shahreza, Iran

Reihaneh Asachi - Environment and Biotechnology Research Division, Research Institute of Petroleum Industry, Tehran, Iran

## خلاصه مقاله:

Dyes are complex organic materials that are widely used in the textile and dyeing industries. The presence of dyes and organic matter in water poses many health and environmental hazards to humans and other organisms. In this study, the biomass of *Mucor hiemalis* was investigated to remove methylene blue dye. The effect of process variables such as adsorbent amount, initial dye concentration, pH, time and temperature were studied. Data were evaluated to fit Langmuir and Freundlich isotherm models. The results showed that the dye adsorption process was equilibrated in 120 minutes. The highest adsorption was obtained at pH = 8. The effect of adsorbent concentration was investigated and the highest adsorption was achieved at 70 mg/l. The initial concentration of dye was measured in the range of 10-70 mg/l. The effect of temperature changed the adsorption rate and the highest adsorption was achieved at 30 °C. The results showed that the data for surface adsorption of methylene blue on the biomass of *Mucor hiemalis* fits with the Langmuir isotherm model. The results showed that *Mucor hiemalis* biomass could be used as a cheap adsorbent to remove methylene blue dye from aqueous solutions.

## کلمات کلیدی:

methylene blue dye, Langmuir and Freundlich isotherm, *Mucor hiemalis*, textile industry

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/978036>

