

عنوان مقاله:

Elimination of Acid Yellow 36 by PPI Dendrimer-Chitosan Hybrid: Preparation, Characterization, RSM, Kinetic and Isotherm Adsorption Study

محل انتشار:

کنفرانس بین المللی فرآورش پلیمرها (سال: 1390)

تعداد صفحات اصل مقاله: 5

نویسندگان:

m Sadeghi-Kiakhani - *Amirkabir University of Technology, Department of Textile Engineering, Tehran-Iran*

m Arami - *Amirkabir University of Technology, Department of Textile Engineering, Tehran-Iran*

k Gharanjig - *Institute for Color Science and Technology, Department of Organic Colorants, Tehran-Iran*

N.M Mahmoodi - *Institute for Color Science and Technology, Department of Environmental Research, Tehran-Iran*

خلاصه مقاله:

A biopolymer (Chitosan–Poly Propylen Imine) (CS-PPI) as a bio-adsorbent for adsorption of textile acid dye was prepared. CS-PPI was characterized by Fourier transform infra-red (FTIR). The obtained results confirmed that the linkage of NH₂ groups of PPI dendrimer onto modified chitosan containing carboxylic acid groups was accomplished chemically. Acid Yellow 36 (AY36) was used as a model pollutant. Response Surface Methodology (RSM) was applied to estimate the simple and combined effects of the operating variables including initial pH, initial dye concentration, time contact and temperature. Under the optimal values of process parameters, the dye removal performance was 99%. The data were evaluated for agreement with the Langmuir, Freundlich and Temkin isotherm models. It was found that AY36 followed by Langmuir isotherm. The adsorption kinetics of dye was found to confirm to pseudo-second order kinetics. Based on the data of present study, one could conclude that the CS-PPI being a biocompatible, eco-friendly and high performance adsorbent might be a suitable alternative for elimination of acid dyes from colored aqueous solutions

کلمات کلیدی:

Biopolymer, Chitosan–dendrimer, Acid dye, Isotherm adsorption, Kinetics

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/134083>

