

Comparison of two and three parameters adsorption isotherm for methylene blue from aqueous solutions onto local illitic clay

Otheman AMRHAR¹, Hakima NASAALI², Mohamed S.ELYOUBI³

Laboratory of materials electrochemistry and environment, Faculty of Science, Ibn Tofail, University, B.P:133, Kenitra 14000, Morocco.

1: E-mail: otheman.amrhar@gmail.com

2: E-mail: hnassali@yahoo.fr

3: E-mail: mselyoubi@yahoo.fr

Abstract

Equilibrium studies were carried out for the sorption of methylene blue from wastewater onto local illitic clay as an adsorbent. The experimental data were fitted to the Freundlich, Langmuir and Redlich–Peterson isotherms. We presented the comparison of two- and three parameter isotherm. The non-linear regression method was used in selecting the optimum isotherm for the experimental data, and the coefficient of determination R^2 and the Chi-square statistic test X^2 were used to select the best theoretical isotherm. Redlich–Peterson isotherm was found to be the best representative for methylene blue adsorption on local illitic clay .

Keywords: Local illitic clay ; Two- and three parameter isotherm; Regression ; Adsorption