

Applying a new eco zincophosphate material for organic pollutants adsorption

N. Chouat^{1,*}, B. Bensafi¹, M. A. Hasnaoui¹, M. Sassi¹, A. Bengueddach¹

¹ Laboratoire de chimie des matériaux, Université d'Oran 1 Ahmed BENBELLA, BP 1524 El M'nouar Oran.

*Corresponding author: c.nadjet@hotmail.fr

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ABSTRACT/RESUME

Abstract: A novel hybrid material zincophosphate was hydrothermally synthesized using l-methionine as a structure directing agent. The new material has been characterized by X-ray diffraction powder, scanning electronic microscopy, and infrared spectroscopy to find out the cell parameters, the shape of the obtained crystals, and to confirm the existence of the amino acid in the framework. It is used for polluting organic molecules fixation. The new adsorbent is a hybrid zincophosphate-methionine. It is promising for fixing the Red Telon (RT) and Red Bemacide (RB) dyes used by an Algerian textile company. A modeling study has allowed a glimpse of the adsorption phenomena and highlight interactions. The chosen adsorption models are the Freundlich and Sips. The best correlation factors are obtained in the case of the Sips model for the RB-zincophosphate system.