

Removal of Organic Pollutants from Wastewater by New Granules (Fe-PIOCG) With Gluten

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Abstract. This study focuses on the preparation by compaction-granulation method of gluten as binder and iron-pillared montmorillonite (Fe-PIOC) using different percentages of binder. Mechanical and physical characteristics of these new granules were connected to the dynamic adsorption properties of malachite green (MG). The effects of dynamic adsorption parameters such as bed depth, initial concentration and inlet flow rate were investigated. The breakthrough curves were exploited by the Thomas and Yoon and Nelson models using nonlinear regression. The corresponding results showed a good agreement with the experimental results obtained indicating that the model predictions were appropriate for the design of the column.

Keywords: Compaction-granulation; Pillared clay; Friability; Malachite Green.
