

The Effect of Heat Treatment Conditions on Preparation of Sorption Materials from Organomineral and Plant Waste

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Abstract: The paper presents the results on the use of sorption material obtained by joint heat treatment of waste bleaching clay (BC) and plant waste (PW) resulting from mechanical harvesting of soybeans for purification of methylene blue (MB) dye using model solutions as an example. Heat treatment of PW and BC was carried out at a temperature of 350 °C and ratios of 1 : 3, 1 : 1 and 3 : 1, as well as separately for at temperatures of 250 and 350 °C in a closed metal container under conditions of lack of oxygen. The porous structure of sorption materials was studied using electron microscopic analysis methods. During desorption, the chemical nature of sorption was established (MB dye was washed out from the surface of carbon-containing sorption materials by less than 3.0 %).