

INFLUENCE OF IONIZING RADIATION AND HYDROCARBONS ON NATURAL BENTONITE METAMORPHISM

Oil generation is a kinetic process –both time and temperature are critical [1,2]. Metamorphism of nanostructured bentonite and petroleum under influence of ionizing rays is an interconnected process [3-5].

The word metamorphic comes from Greek and means a change in form. Hypotheses based on kerogen-oil interaction postulate that the expulsion of oil is controlled by absorption or adsorption of the products onto the surface of the kerogen, diffusion of the hydrocarbons through the kerogen and / or relative solubility. The role of radionuclides in metamorphism of clay and oil hydrocarbons has not been studied enough.

The purpose of this work is to identify the correlation between the metamorphism of natural bentonite and hydrocarbons. Using Fourier transform infrared spectroscopy, it was studied that bentonite clays, under the influence of gamma rays, interact with oil hydrocarbons, forming an intercomplex. TGA and DTA analyzes of bentonite clay showed the loss of bentonite structural water, which plays an important role in the formation of hydrogen and petroleum hydrocarbons.

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Section

Radiation ecology and methods of analysis (Section 3)

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