



## **IFine-dispersed clay - natural nanoreactors for the catalytic transformations of metane in deep horizons of an earth's crust**

I. Kosachev (1), L. Situdikova (2), V. Izotov (3), and I. Magdeev (4)

(1) Institute of organic and Physical chemistry of Kazan Scientific Center of RAS (situdikova8432@mail.ru, +7(843)238-84-, (2) Kazan State University, geology, Kazan, Russian Federation (situdikova8432@mail.ru, +7(843)238-84-, (3) Kazan State University, geology, Kazan, Russian Federation (situdikova8432@mail.ru, +7(843)238-84-, (4) Institute of organic and Physical chemistry of Kazan Scientific Center of RAS (situdikova8432@mail.ru, +7(843)238-84-

Revealing fine-dispersed clay associations in destruction zones structure of an earth's crust deep horizons has allowed to come out with the assumption of their possible influence on the fluid streams which are taking place through such zones. Metane is the main hydrocarbonic component of these fluids due to the relative chemical inertness and the small geometrical size.

On the basis of results of experimental simulation the opportunity of realization in zones destructions the crystal base the catalytic mechanism of generation from metane of the hydrocarbonic systems including connections of gas and liquid phases, under influence catalytic activity fine-dispersed clay minerals of these zones at the presence oil - field brines is revealed.

Presence in clay lamellar spaces – original natural nanoreactors promotes realization of process in enough soft conditions (temperature 3000, pressure 8-10 ).