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# Oil as a Product of the Mantle

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Thermodynamic calculations and experiments showed that methane can not polymerize into heavier hydrocarbons at pressures lower than 5 kbar, while for a synthesis of hydrocarbon systems similar on composition to nature oils it is necessary 700-1800° and 15-80 kbar [1, 2]. If oil had been formed in mantle, composed mainly of ultrabasic rocks, then it is logically to suppose that oil and ultramaphite interrelation should be reflected upon its microelement composition.

The West Siberia and Tatarstan oil geochemical study (by ICP-MS method; Element 2, analytics Yu.L. Ronkin et al., lab. of physical-chemical methods of researches, IGG, UB RAS) shows [3] that oils possess an extremely specific microelement composition. The main geochemical oil features are limitedly low contents of the majority of microelements and a brightly expressed positive europium anomaly, characteristic for deep formations. At the diagram of the normalized REE contents a noted feature of their distribution in oils is the prevalence of light lanthanoids over middle and heavy ones (La/Yb=16-19). Ni, Co, Cr, V, Cs, Sr, Zr and PGE in oils are quite comparable with their concentrations in ultrabasites.

A series of experiments on the mass transport of the organic compounds from the bituminous argillites samples (of the Bazhenov suite of the North-Pokachev, South-Yagun and Tevlin-Russkin West-Siberian oil deposits) into synthesided hydrocarbons and mineralized thermal waters has been made. It was shown that biomarker presence in natural oils is not a proof of the oil organic origin, but may be quite gained by the hydrocarbons in the process of migration through sedimentary rocks, containing the organic substance.

One of the main tasks should be the development of new methods of hydrocarbon deposit prospecting. Thus, proceeding from the deep oil genesis quite an important thing is the mapping of the basement faults. The ideas being developed by us [3] give all grounds for refusing from such quite recently seeming to be a firm demand as the obligatory presence of “source rocks series” in the concrete area for its industrial oil- and gas-presence.

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