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Hydrothermal transformation of organic matter in the presence of rock-forming minerals

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Abstract

© SGEM2018. In the conditions of the deterioration of the structure of reserves of conditioned oil, development of non-traditional sources of hydrocarbon raw materials is becoming one of the promising directions of increasing the resource base of hydrocarbons. The work is devoted to the identification of changes in the chemical structure and composition of super-viscous oil as a result of steam-heat treatment in the presence of mineral compounds of carbonate reservoir rocks at temperatures of 250-300°C and pressures up to 1.6 MPa. As a result of the thermal effect, the hydrocarbon composition changed: the content of light hydrocarbons increased by 10%, the sulfur content decreased from by 2% due to the destruction of resinous compounds by 9%. The results of the conducted research contribute to the development of theoretical ideas on the transformation of biodegradable organic matter in hydrothermal processes in the presence of rock-forming compounds, and contribute to the development of scientific foundations for the creation of new technologies for extracting heavy hydrocarbon raw materials from rocks and upgrading their composition for their integrated development.

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Keywords

Heavy oil, Hydrothermal transformation, Organic matter, Steam-thermal effect

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