RADIATION CHEMICAL CONVERSION OF OIL DERIVED FROM OIL-BITUMEN ROCK

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Abstract. The results of research in the radiation processing of synthetic oil derived from oil–bitumen rock of the Balakhany deposit in Azerbaijan are presented. The study has been conducted on a ^{60}Co gamma-source at a dose rate of P = 0.5 Gy/s and various absorbed doses of D = 43–216 kGy. Samples of synthetic oil from natural bitumen rocks have been analyzed by chromatography, gas chromatography–mass spectrometry, and IR-spectroscopy, and their radiation resistance has been evaluated. The results of the study allow for both assessment of the feasibility of manufacturing petrochemicals for various applications by radiation processing and use of these materials for isolating radioactive sources to preclude their impact on the environment.

Keywords: oil–bitumen rock, synthetic oil, oxygen, hydrocarbon gases, radiation.