

## Investigation of the systems "shungit-toluen" and "shungyt-water" by spectroscopic methods

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### Abstract

The subject of research is Zazhoginskoje shungite Deposit (Karelia). The work is devoted to the study of shungite-toluene systems and shungite-water, determination of the composition of shungite and toluene and aqueous fractions. For the diagnosis of structural forms of carbon substances used the methods of IR and Raman spectroscopy. The image of the surface of samples was removed for scanning electron microscope. Analysis of IR and Raman spectra of the original shungite and selected crystals from the toluene and aqueous fractions allowed us to conclude about the presence in shungite allotropic modifications such as graphite, glassy carbon, carbyne, amorphised C-soot, fullerene-like compound. Presented in digital images and photomicrographs of the samples confirm that the shungite is a complex multiphase system. Furthermore, shungite comprises silica, titanium sulfide and pyrite.

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