

L. D. BARDUKHINOV,\* \*\* Z. V. SPETSIUS,\* E. V. KISLOV,\*\* A. S. IVANOV,\*  
R. V. MONKHOROV.\*\* PARAGENESES OF GARNET INCLUSIONS  
IN DIAMONDS FROM KIMBERLITES OF YAKUTIA AFTER DATA OF RAMAN  
AND IR SPECTROSCOPY

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Diamonds with inclusions of garnet have been studied from kimberlite pipes Udachnaya, Zapolyarnaya, Komsomolskaya-Magnitnaya, Yubileynaya, Komsomolskaya, Aikhal, Mir, and Mayskaya of the Yakutia diamondiferous province. Positive correlation has been revealed between positions of the main combination peaks in the Raman spectra of garnets and their chemical composition. The method to determine the paragenetic association of garnet inclusions by the Raman spectroscopy data is described. Diamonds with inclusions of the eclogitic paragenesis garnets are characterized by the high content of total nitrogen and by medium degree of its aggregation, whereas diamonds with inclusions of dunite-harzburgite and lherzolite paragenesis garnets are distinguished by the low concentration of

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nitrogen and by the wide variation of the nitrogen aggregation degree. There were also revealed dependences between thermal-temporal parameters of the diamond formation (according to the IR-spectroscopy of diamonds) and the type of rocks (according to the Raman spectroscopy of garnet inclusions).

*Key words:* diamonds, inclusions, kimberlites, garnets, Raman spectroscopy, IR-spectroscopy.