

Raman spectra analysis for studying the forms of hydrogen, nitrogen and oxygen dissolution in melting products of the early Earth's mantle

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The glasses of composition $(\text{NaAlSi}_3\text{O}_8)_{80}-(\text{FeO})_{20} + \text{Si}_3\text{N}_4$ were studied. The analyses and decomposition into the band components of the Raman Spectra of these glasses were made in the region from 2800 to 3800 cm^{-1} . The correlation dependence of these bands on oxygen fugacity, $\Delta\lg f\text{O}_2(\text{IW})$ permitted us to decompose the bands into some groups and to assign different molecules and complexes in our samples with the help of them.

Key words: experiment, iron- silicate melt, O, H and N dissolution, FTIR and Raman spectroscopy

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