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Features of the structure of phase-separated and porous borosilicate glasses with/without an impurity of fluorid-ions according to electron microscopy

Irina Drozdova, Tatiana Antropova

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Keywords

phase-separated glass, porous borosilicate glass, structure, electron microscopy, micro crystallization, light transmittance

Abstract

The comparative research of the structure of the phase-separated glasses of sodium borosilicate system with/without the additives of fluorides and phosphorus oxide, as well as of the porous glasses received from the two-phase glasses were carried out with the help of the methods of electronic microscopy and X-ray phase analysis. It was founded out the distinctions of phase morphology of the two-phase glasses which contain or not a fluorine and phosphorus. Inside the phase-separated glasses with the additives, the microcrystalline formations which are kept inside the porous glasses were detected. An assumption was made that the revealed structure features of the porous glasses can be the reasons for observable differences of their optical properties, namely a light transmittance in the visible region.



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