

Glass-crystall materials with participation of $\text{Bi}_{12}\text{TiO}_{20}$ and $\text{Bi}_4\text{Ti}_3\text{O}_{12}$ phases, obtained by free cooled melts in Bi_2O_3 - TiO_2 - SiO_2 - Nd_2O_3 system

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Synthesis of selected samples in the system Bi_2O_3 - TiO_2 - SiO_2 - Nd_2O_3 was made using two successive procedures: starting oxide homogenization in 15 min and melting at temperature of 1450°C and 1100°C, in depend on composition. The phase composition is determined by X-ray diffraction (XRD) analysis. The microstructure is observed by scanning electron microscopy (SEM). Through initial amount control of the start compositions leads to formation of polyphase glass-ceramics with participation of following phases: $\text{Bi}_{12}\text{TiO}_{20}$ and $\text{Bi}_4\text{Ti}_3\text{O}_{12}$. The glass phase quantity, silica oxide and titanium oxide contents in volume, influence on the formation of separate phase areas varying in sizes and number.

Acknowledgments : *The study was performed with financial support of Swap and Transfer, Erasmus Mundus Action 2 Mobility Lot 12, Grant ID number SAT_2542*