Microstructure and properties of new sintered glass powders from P_2O_5-MgO-K_2O and SiO_2-Al_2O_3-Na_2O-CaO-Fe_2O_3 systems

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By sintering mixtures of two kind of glass powders from the base systems: P_2O_5-MgO-K_2O and SiO_2-Al_2O_3-Na_2O-CaO-Fe_2O_3 new composite type materials were obtained.

Function of the established compositions, the ratio between the glass powders and the thermal treatment conditions final materials with iridescent effects at the surface were resulted.

The surface and bulk microstructure by DTA, XRD, TEM and atomic force microscopy (ATM) techniques were investigated. The main physic and chemical properties were determined.