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**NUMERICAL CALCULATION OF ABSORBED DOSE RECEIVED BY GLASS MATRICES FOR IMMOBILIZATION RADIOACTIVE WASTE AND ITS SIMULATED IRRADIATION**

**Content**

Samples of borosilicate glass-matrix (BSGM) were obtained by preliminary melting of a mixture of a calcined solution-simulator of radioactive waste with addition of glass-forming silicon oxide, in the form of sand, and 10 wt. % lead oxide or calcium fluoride, followed by glass-melting and pouring glass into metal molds.

The calculations of absorbed doses and dose maps in BSGM were made by using GEANT4. The calculated absorbed dose for 300 years of storage BSGM with radioactive isotopes of 137Cs, 134Cs and 60Co is equal to 332.46 Gy.

Simulated γ-irradiation of BSGM samples with radioactive waste was carried out on a linear electron accelerator LU-10 (NSC KIPT) using bremsstrahlung radiation. The average energy of photons is equal to 10.4 MeV. The rate of the absorbed dose is equal to 1.09 kGy per hour.

No changes were observed in the structure, mechanical strength and corrosion resistance of the irradiated samples of BSGM.

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