**Influence of the annealing temperature on the ferroe-lectric properties of niobi-um-doped strontium–bismuth tantalite**

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**Abstract.** Characteristics of ferroelec-tric thin films of niobium-doped strontium–bismuth tantalite (SBTN), which were deposited by magnetron sputtering on Pt/TiO2/SiO2/Si substrates, are investigated. To form the ferroelectric structure, deposited films were subjected to subsequent annealing at 700–800°C in an O2 atmosphere. The results of X-ray diffraction showed that the films immediately after the deposition have an amorphous structure. Annealing at 700–800°C results in the formation of the Aurivillius structure. The dependences of permittivity, residual polarization, and the coercitivity of SBTN films on the modes of subsequent annealing are established. Films with residual polariza-tion 2Pr = 9.2 μC/cm2, coer-citivity 2Ec = 157 kV/cm, and leakage current 10–6 A/cm2 are obtained at the anneal-ing temperature of 800°C. The dielectric constant and loss tangent at frequency of 1.0 MHz were ε = 152 and tanδ = 0.06. The ferroelec-tric characteristics allow us to use the SBTN films in the capacitor cell of high density ferroelectric random-access non-volatile memory (FeRAM).]

**Keywords:** Thin films, niobium-doped strontium–bismuth tantalate (SBTN), ferroelectric properties, magnetron sputtering, FeRAM.

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