ABSTRACT

Report on research work: 80 p., 10 tabl., 21 fig., 31 literatures.

ALUMINUM, VANADIUM, THIN FILM, ALUMINUM - VANADIUM, PHASE TRANSFORMATIONS, STRUCTURE, PHASE COMPOSITION, DIFFUSION, THERMAL EVAPORATION, ANNEALING, ELECTRON MICROSCOPY, ELECTRONOGRAPHY, RESISTOMETRY.

Research subject − samples coated with an aluminum-vanadium compound on a NaCl single crystal and a piezoceramic material of lead zirconate-titanate system.

Aim − determination of diffusion processes in thin-film aluminum-vanadium system, accompanied by changes in structural and phase composition after annealing.

Research methods − vacuum condensation method, the method of electron microscopy, the method of electronography, the method of fourprobes resistance.

The transition of phase transformations is in a thin-film aluminum-vanadium system during annealing in vacuum for 15 min at a temperature of 500 °C, which is accompanied by the formation of intermetallides Al_3V, Al_8V_5.

The results of this study can be used in future structure and phase formation researches of the same systems and for the development of thin-film sensors based on the piezoceramic material of the lead zirconate-titanate system.