

A method for synthesis and producing thermoelectric p-PbTe with tellurium excess consists in that the initial substances: lead and tellurium are placed in vacuumized quartz ampoule, which is placed into the furnace and is hold a certain temperature. The ampoule is cooled to the room temperature, the obtained ingots are crushed into fractions and powder pressing is carried out. The initial substances – lead of the purity grade of C-000 and tellurium T-HP – are taken with the tellurium excess in the 1-2 at. %. Heating the ampoule is carried out in two stages – preliminary heating at 770 K for 3 hours and the synthesis at the temperature of 1290 K for 132 hours. The grinded fractions of the synthesized compounds less than $(0.8 \div 1.0)$ mm are pressed at pressures $(0.75 \div 1.0)$ GPa.