

Invention relates to the field of materials science and to such areas of instrument engineering as space technology, integrated microelectronics, and biomedical electronics; in particular, it relates to devices for generating electrical energy and may be applied in various industrial sectors that require new and efficient energy sources. Method for obtaining superionic ceramics based on a microcrystalline powder of solid solution of $\text{Ag}_{6,75}\text{P}_{0,25}\text{Ge}_{0,75}\text{S}_5\text{I}$ as a material for a solid electrolytic energy source, which involves the stepwise heating of evacuated quartz ampoules from previously synthesized tetrahalogen chalcogenides $\text{Ag}_6\text{P}_5\text{S}_5\text{I}$ and $\text{Ag}_7\text{GeS}_5\text{I}_9$ taken in a stoichiometric ratio, at a rate of 100 K/h up to a temperature of 1273 K, and holding at this temperature for 72 hours to homogenize the melt of the resulting charge. The solid solution of the composition $\text{Ag}_{6,75}\text{P}_{0,25}\text{Ge}_{0,75}\text{S}_5\text{I}$ is ground in an agate mortar to a powder with a particle size of 10–20 μm ; it is then pressed at a pressure of 400 MPa to produce discs 10 mm in diameter and 2–4 mm thick, which are placed in evacuated quartz ampoules and heated at a rate of 20 K/h to a temperature of 923 K and held at this temperature for 36 hours, after which they are cooled to room temperature and electrical contacts are applied to the end faces of the discs. The invention provides a method for producing superionic ceramics with high electrical conductivity and is characterized by greater manufacturability and cost-effectiveness.