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PbTe Nanoparticles Obtaining and Studies of Their Electrical Properties

V. Nikorich¹, P. Ketrush¹, A. Nikorich², A. Todosichiuc²

¹*Department of Physics and Engineering, Moldova State University, Chisinau, Moldova*

²*Electronics Engineering and nanotechnologies Institute D. Ghiu of AS Republic of Moldova*

Nano- and microparticles of PbTe: Ga (at 0.5%) were obtained by mechanical milling. Samples of PbTe nanopowder of parallelepiped shape were made by pressing for measuring electrical parameters. The galvanomagnetic parameters were measured in the range of 77-350 K. Firstly crystalline samples were analyzed and their galvanomagnetic properties were compared with those of samples pressed from nanopowder. It was observed that the concentration of charge carriers in crystalline and pressed samples do not differ much from each other, but electrical conductivity temperature dependencies differ more essentially. The same effect also affects the character of thermoelectric coefficient temperature dependence and causes its sign change.