

Thermopower of Doped Graphene in Nanoribbons

Ruvinskii M.A.¹, Ruvinskii B.M.²

¹*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*

²*Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine*

The theoretical study of the thermoelectric effect in nanoribbons of doped graphene had been fulfilled for the cases [1] of armchair and zigzag with the relevant electronic states (with a gap and no gap in the energy spectrum). The electrical conduction, the thermoelectric coefficient and thermopower were defined by the Boltzman kinetic equation. For the armchair the elastic scattering of charge carriers the screened potential of a charged impurity was considered. For the case of zigzag the effect of electron-phonon interaction was determined. It is shown that the existence of a gap in the energy spectrum and the one-dimensional motion in the nanoribbons lead to increasing of the thermoelectric power in comparison with the case of an unlimited graphene.

1. L.Brey and H.A.Fertig. // Phys.Rev.B – 2006. – **V73** – P. 235411-1–5.