Solid State Physics

F 3028

Calculation of Specific Heat of Graphene

Project

For this project you will reproduce the results presented in the both papers of R. Sahoo [1, 2]. The goal is to compute the lattice specific heat of graphene. As first part you need to find the dispersion relation for the graphene following the Sahoo's paper [1]. As second part, you will derive and calculate the specific heat of graphene using the work of Sahoo [2]. You will work in teams and will report the results in a brief document (LaTeX) along with the code used to generate the numerical data. Have fun!

References

[1] R. Sahoo and R. R. Mishra, *Phonon dispersion of graphene revisited*, J. Exp. Theor. Phys. **114**, 805-809 (2012)

[2] R. Sahoo and R. R. Mishra, *Lattice Specific Heat of Graphene*, 2018 4th International Conference on Devices, Circuits and Systems (ICDCS), 186-188 (2018)

[3] N. W. Ashcroft and N. D. Mermin, *Solid State Physics* (Cengage Learning, 2011)