
Contribution ID: **24** Type: **not specified**

# Temperature-dependent conductivity of graphene in hybrid Bose-Fermi systems

We investigate finite temperature electron conductivity in a hybrid system consisting of spatially separated two-dimensional layers of graphene and condensed indirect exciton gas coupled via the Coulomb interaction. We calculate the energy dependent relaxation time of the electrons in the graphene layer accompanied by the emission and absorption of a single Bogoliubov excitation (bogolon). We further calculate the conductivity of graphene in this hybrid Bose-Fermi system.
At last, we show, that bogolon-mediated scattering is predominant in hybrid systems, as compared with phonon-assisted relaxation.

**Authors:** Mr SUN, Meng (Center for Theoretical Physics of Complex Systems, Institute for Basic Science ; Korea University of Science and Techonlogy); Dr VILLEGAS, Kristian (Center for Theoretical Physics of Complex Systems, Institute for Basic Science); Dr KOVALEV, Vadim (Institute of Semiconductor Physics, Siberian Branch of Russian Academy of Sciences;Department of Applied and Theoretical Physics, Novosibirsk State Technical University); Prof. SAVENKO, Ivan (Center for Theoretical Physics of Complex Systems, Institute for Basic Science;Korea University of Science and Technology )

**Presenter:** Mr SUN, Meng (Center for Theoretical Physics of Complex Systems, Institute for Basic Science ; Korea University of Science and Techonlogy)

**Track Classification:** School