

Charge and spin Seebeck effects in a multiterminal quantum dot

Karol Izydor Wysokiński

Institute of Physics, M. Curie-Skłodowska University, ul. Radziszewskiego 10
20-031 Lublin

The system composed of a quantum dot in contact to a superconductor, a ferromagnetic and a normal metal electrodes has been studied. In the limit of infinitely large superconducting gap and weak coupling between the dot and electrodes we investigate the subgap charge and spin transport *via* standard master equation technique. In this system the pure spin current flows in the normal leads under appropriate bias. Here, we are interested in the electrical and spin currents induced by the temperature difference between the electrodes. The currents as well as the corresponding thermopower coefficients have been calculated. Assuming typical values of thermal conductance we have also discussed the charge and spin thermoelectric figures of merit which characterize the efficiency of a device.

9.7 cm

13.4 cm

Subject category :

5. Nano-structure, Surfaces, and Interfaces

Presentation mode :

poster

Corresponding author :

Karol Izydor Wysokiński

Address for correspondence :

Institute of Physics
M. Curie-Skłodowska University
ul. Radziszewskiego 10
20-031 Lublin

Email address :

karol@tytan.umcs.lublin.pl