

Thermoelectric transport through the double quantum dot in the sequential tunneling regime.

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The charge, energy and spin currents have been studied in the sequential tunneling limit for the system consisting of two parallel quantum dots with electrostatic coupling and in contact with two external electrodes. Special attention is paid to the thermal generation of the pure spin current in the system with one ferromagnetic electrode and/or subject to the magnetic field. The spin only current in the system may be induced easily by the temperature gradient across the system of interacting quantum dots and controlled by the gate voltage. We have calculated charge conductance, Seebeck coefficients for charge and spin transport and thermal conductance as well as power factor and thermoelectric figure of merit. The performance of the device as the thermoelectric generator has also been discussed.

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