# ELECTRON-LATTICE ENERGY EXCHANGE IN SMALL METALLIC PARTICLES

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S u m m a r y

Electron-lattice energy exchange in bounded metallic systems (metallic islands) is studied. We derive the formula for the energy lost by an electron per unit time for the generation of acoustic oscillations of the lattice in accordance with the Cherenkov mechanism. In bounded metallic systems, an electron moves from one potential wall to other one (it performs oscillations). With increase in the distance between the walls, the derived expression for energy exchange transforms in the known one for massive metals. With decrease in the distance between the walls, the intensity of electron-lattice energy exchange decreases and tends to zero on approaching the certain value of the above-mentioned distance.