Modelling of thermal processes of an ideal hot cathode employing the MathCad applications

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The article examines the issues associated with the analysis of the hot cathode heating process using the law of conservation of energy. We conducted the simulation of the hot cathode heating process using a thin rod, heated by electric current. The heating process is described by the differential equation in partial derivatives of the second order, and its output is based on the regularities of the thermal conductivity of solid bodies, the theory of thermal conductivity and the well-known mathematical apparatus by means of computers.

Keywords: hot cathode, heating process, thermal conductivity, software model, MathCad.

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