

Parameters of microexplosion processes on the cathode that occur during the initiation of vacuum breakdown

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The results of magnetohydrodynamic modeling of the electric explosion of a microprotrusion on the cathode, initiated by the explosive emission current, are presented. The change in the main parameters of the cathode material, such as temperature, density, pressure, during the explosion of tungsten and copper cathodes is studied. The integral of the specific action of the current is estimated when both direct and high-frequency voltages are applied to the diode. The parameters of a microcrater formed on the cathode as a result of an electric explosion of a microprotrusion are analyzed.