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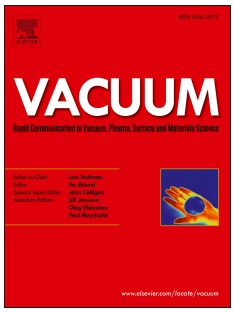

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Surface processes at the first stage of magnetron cathode Pd-Pd5Ba activation

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Abstract

The electron emission of palladium-barium cathodes is highly effective due to the active BaO substance formation of low work function on the cathode surface (2.3 eV). The work function is a universal parameter characterizing the emission capacity of material. The degree of cathode surface coverage with the emission-active layer and distribution uniformity specificate such important parameters as the emission current and homogeneity of the cathode surface. The active metal – barium – is part of the activation phase – Pd5Ba intermetallic compound. The active substance layer is formed during the activation by vacuum cathode heat treatment. At thermal Pd5Ba dissociation, diffusing Ba atoms flux through the defects in the crystal structure of a palladium