

Title (en)
COLD CATHODE AND A METHOD FOR THE PRODUCTION THEREOF

Title (de)
KALTKATHODE UND VERFAHREN ZU IHRER HERSTELLUNG

Title (fr)
CATHODE FROIDE ET PROCÉDÉ DE FABRICATION CORRESPONDANT

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Abstract (en)
The invention relates to the electronic engineering and, more specifically, to the fields thereof where the physical phenomenon of electron, or ion-electron, or cold emission is used, and concerns a cold cathode and a method for fabricating the same. Provided is a method for fabricating a cold cathode, according to which a cathode workpiece of a metal or alloy is subjected to severe plastic deformation to transform an initial structure of the workpiece into a fragmented structure comprising fragments of nanometric size or into a mixed structure comprising grains and fragments of nanometric size, characterized in that , after the severe plastic deformation, the cathode workpiece is subjected to a low-temperature annealing for transforming at least part of said fragments into grains of nanometric size at a temperature not lower than the operating temperature T oper of the cathode. The invention is an improvement of the method for fabricating a cold cathode using severe plastic deformation and allows to further enhance efficiency of the cathode via a reduction in the electronic work function value.

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