Title (en)

Structure and method for fabricating of a field emission device

Title (de)

Aufbau und Verfahren zur Herstellung einer Feldemissionsanordnung

Title (fr)

Structure et procédé de fabrication d'un dispositif d'émission de champ

Publication

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Application

EP 96101877 A 19960209

Priority

EP 96101877 A 19960209

Abstract (en)

The invention generally relates to the technical field of devices using the effect to emit electrons out of a solid into vacuum due to high electric field strength. Such devices are usually called field emission devices. The invention relates more specifically to the structure of a field emission device and to methods of fabricating a field emission device. The inventive structure of a field emission device comprises a tip 1 for emitting electrons, said tip 1 has a body 2 of a first material, said body forms a series resistor, said tip is centered in relation to a gate aperture 3 which in particular is a circular gate aperture formed by an electrode 4, wherein said tip 1 projects above the surface of said electrode 4 forming the gate aperture 3. The inventive method for fabricating a field emission device allows the critical dimensions of the tips and the gate electrode to be independently controllable and thus offers a large process window and an easy manufacturability. The range of threshold voltages at which devices emit which have been processed according to the inventive methods is very small and thus offers high multiplexibility. <IMAGE>

IPC 1-7

H01J 1/30; H01J 3/02

IPC 8 full level

H01J 9/02 (2006.01); **H01J 1/30** (2006.01); **H01J 1/304** (2006.01); **H01J 3/02** (2006.01)

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H01J 1/3042 (2013.01); **H01J 3/022** (2013.01)

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