

Title (en)
SELF-GETTERING ELECTRON FIELD EMITTER AND FABRICATION PROCESS

Title (de)
SELBSTGETTER FELDEMISSIONS-ELEKTRONENQUELLE UND HERSTELLUNGSVERFAHREN

Title (fr)
EMETTEUR D'ELECTRONS PAR EFFET DE CHAMP A FIXATION AUTOMATIQUE DES GAZ ET PROCEDE DE FABRICATION AFFERENT

Publication
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Application
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Priority

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Abstract (en)

[origin: WO9931698A1] A self-gettering electron field emitter (30) has a first portion (40) formed of a low-work-function material for emitting electrons, and it has an integral second portion (50) that acts both as a low-resistance electrical conductor and as a gettering surface. The self-gettering emitter (30) is formed by disposing a thin film of the low-work-function material parallel to a substrate and by disposing a thin film of the low-resistance gettering material parallel to the substrate and in contact with the thin film of the low-work-function material. The self-gettering emitter (30) is particularly suitable for use in lateral field emission devices (10). The preferred emitter structure has a tapered edge (60), with a salient portion (45) of the low-work-function material extending a small distance beyond an edge (55) of the gettering and low resistance material. A fabrication process (S1-S6) is specially adapted for in situ formation of the self-gettering electron field emitters while fabricating microelectronic field emission devices.

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