

Title (en)
Field emission-type electron source

Title (de)
Feldemissionselektronenquelle

Title (fr)
Source d'électrons à émission de champ

Publication
EP 1328003 B1 20081001 (EN)

Application
EP 02027754 A 20021211

Priority
• JP 2001380355 A 20011213
• JP 2002083927 A 20020325
• JP 2002083928 A 20020325

Abstract (en)
[origin: EP1328003A2] A lower electrode (2) and surface electrode (7) composed of a layer-structured conductive carbide layer is formed on one principal surface side of the substrate (1) composed of an insulative substrate such as a glass or ceramic substrate. A non-doped polycrystalline silicon layer (3) is formed on the lower electrode (2). An electron transit layer (6) composed of an oxidized porous polycrystalline silicon is formed on the polycrystalline silicon layer (3). The electron transit layer (6) is composed of a composite nanocrystal layer including polycrystalline silicon and many nanocrystalline silicons residing adjacent to a grain boundary of the polycrystalline silicon. When voltage is applied between the lower electrode (2) and the surface electrode (7) such that the surface electrode (7) has a higher potential, electrons are injected from the lower electrode (2) toward the surface electrode (7), and emitted through the surface electrode (7) through the electron transit layer (6). <IMAGE>

IPC 8 full level
H01J 1/312 (2006.01)

CPC (source: EP)
H01J 1/312 (2013.01)

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SI SK TR

DOCDB simple family (publication)
EP 1328003 A2 20030716; EP 1328003 A3 20040317; EP 1328003 B1 20081001; AT E409951 T1 20081015; DE 60229105 D1 20081113

DOCDB simple family (application)
EP 02027754 A 20021211; AT 02027754 T 20021211; DE 60229105 T 20021211