

Title (en)  
Field emission-type electron source

Title (de)  
Feldemissionselektronenquelle

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

Publication  
**EP 1523025 A3 20050420 (EN)**

Application  
**EP 02022014 A 20021001**

Priority  
• JP 2002083927 A 20020325  
• JP 2002083928 A 20020325

Abstract (en)  
[origin: EP1523025A2] 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 1-7  
**H01J 1/312**

IPC 8 full level  
**H01J 1/312** (2006.01)

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

Citation (search report)  
• [A] EP 1056110 A1 20001129 - MATSUSHITA ELECTRIC IND CO LTD [JP]  
• [A] EP 1094484 A2 20010425 - MATSUSHITA ELECTRIC WORKS LTD [JP]  
• [A] EP 1096532 A1 20010502 - PIONEER CORP [JP]  
• [A] US 2001017515 A1 20010830 - KUSUNOKI TOSHIAKI [JP], et al & JP 2001126610 A 20010511 - PIONEER ELECTRONIC CORP & JP 2001243901 A 20010907 - HITACHI LTD

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