

Title (en)

Electron emission source and field emission display device

Title (de)

Elektronenemissionsquelle und Feldemissionsanzeigevorrichtung

Title (fr)

Source d'émission d'électrons et dispositif d'affichage d'émission de champ

Publication

EP 1930931 A1 20080611 (EN)

Application

EP 06256237 A 20061207

Priority

EP 06256237 A 20061207

Abstract (en)

The electron emission source includes a substrate and an electron emission layer formed on the substrate. The electron emission layer includes a composition of diamond-like carbon (DLC) film structures. The height of the DLC flakes is in micrometer scale, and the thickness of the DLC flakes is in nanometer scale. Hence, the aspect ratio of the DLC film structures is high. Therefore, the DLC film can be used as a good electron emission source. A conductive layer can be optionally deposited on the surface of the substrate for further enhancing DLC film in electron emission.

IPC 8 full level

H01J 1/304 (2006.01); **H01J 29/04** (2006.01); **H01J 31/12** (2006.01)

CPC (source: EP)

H01J 1/304 (2013.01); **H01J 29/04** (2013.01); **H01J 31/123** (2013.01); **H01J 2201/30457** (2013.01); **H01J 2209/0223** (2013.01); **H01J 2329/00** (2013.01)

Citation (search report)

- [XY] WO 9745854 A1 19971204 - MINNESOTA MINING & MFG [US]
- [XY] WO 2005001871 A2 20050106 - SUNG CHIEN-MIN
- [Y] US 6448709 B1 20020910 - CHUANG FENG-YU [TW], et al
- [A] WO 9522169 A1 19950817 - DU PONT [US], et al
- [X] LIU D ET AL: "Conducting atomic force microscopy for nanoscale electron emissions from various diamond-like carbon films", APPLIED SURFACE SCIENCE, ELSEVIER, AMSTERDAM, NL, vol. 249, no. 1-4, 15 August 2005 (2005-08-15), pages 315 - 321, XP004965329, ISSN: 0169-4332
- [A] C.J.TORNG,J.M.SIVERTSEN,J.H.JUDY,C.CHANG: "Structure and bonding studies of the C:N thin films produced by rf sputtering method", J. MATER. RES., vol. 5, no. 11, November 1990 (1990-11-01), pages 2490 - 2496, XP002432689

Cited by

CN109613064A

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK RS

DOCDB simple family (publication)

EP 1930931 A1 20080611

DOCDB simple family (application)

EP 06256237 A 20061207