

Title (en)
FIELD EMISSION COLD CATHODE

Title (de)
FELDEMISSIONSKALTKATHODE

Title (fr)
CATHODE FROIDE A EMISSION DE CHAMP

Publication
EP 1523751 A1 20050420 (EN)

Application
EP 02756381 A 20020718

Priority
US 0221283 W 20020718

Abstract (en)
[origin: WO2004010450A1] A field emission cold cathode (11) for use in vacuum tubes. A carbon velvet material (25) is comprised of high aspect ratio carbon fibers embedded perpendicular to a base material. The tips and/or the shafts of the carbon velvet material (25) are coated with a low work function cesiated salt. The base material of the carbon velvet material (25) is bonded to a cathode surface (27). The cold cathode (11) emits electrons when an electric field is applied, even at operating temperatures less than 900 DEG C.

IPC 1-7
H01J 1/304; H01J 9/02; H01J 23/04

IPC 8 full level
H01J 1/304 (2006.01); **H01J 9/02** (2006.01); **H01J 23/04** (2006.01)

CPC (source: EP)
H01J 1/304 (2013.01); **H01J 9/025** (2013.01); **H01J 2201/30446** (2013.01)

Citation (search report)
See references of WO 2004010450A1

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 SK TR

DOCDB simple family (publication)
WO 2004010450 A1 20040129; AU 2002322392 A1 20040209; AU 2002322392 A2 20040209; AU 2002322392 B2 20090528; BR 0215809 A 20070320; CA 2492853 A1 20040129; CA 2492853 C 20090331; CN 100508100 C 20090701; CN 101527238 A 20090909; CN 101527238 B 20110713; CN 1639821 A 20050713; EA 009410 B1 20071228; EA 200500228 A1 20050825; EP 1523751 A1 20050420; HK 1078678 A1 20060317; HK 1135794 A1 20100611; IL 166173 A0 20060115; IL 166173 A 20120229; JP 2005533356 A 20051104; JP 4295215 B2 20090715

DOCDB simple family (application)
US 0221283 W 20020718; AU 2002322392 A 20020718; BR 0215809 A 20020718; CA 2492853 A 20020718; CN 02829338 A 20020718; CN 200910128900 A 20020718; EA 200500228 A 20020718; EP 02756381 A 20020718; HK 05110396 A 20051118; HK 10102294 A 20100304; IL 16617305 A 20050106; JP 2004522905 A 20020718