

Title (en)  
ELECTRONIC VACUUM TUBE WITH A PLANAR CATHODE MADE OF NANOTUBES OR NANOWIRES

Title (de)  
ELEKTRONISCHE VAKUUMRÖHRE MIT EINER PLANAREN KATHODE AUF DER BASIS VON NANORÖHREN ODER NANODRÄHTEN

Title (fr)  
TUBE ELECTRONIQUE SOUS VIDE A CATHODE PLANAIRE A BASE DE NANOTUBES OU NANOFILS

Publication  
**EP 3267463 A3 20180404 (FR)**

Application  
**EP 17178583 A 20170629**

Priority  
FR 1601057 A 20160707

Abstract (en)  
[origin: US2018012723A1] A vacuum electron tube comprises at least one electron-emitting cathode and at least one anode arranged in a vacuum chamber, the cathode having a planar structure comprising a substrate comprising a conductive material, a plurality of nanotube or nanowire elements electrically insulated from the substrate, the longitudinal axis of the nanotube or nanowire elements substantially parallel to the plane of the substrate, and at least one first connector electrically linked to at least one nanotube or nanowire element so as to be able to apply a first electrical potential to the nanowire or nanotube element.

IPC 8 full level  
**H01J 1/15** (2006.01); **H01J 1/312** (2006.01); **H01J 23/04** (2006.01); **H01J 35/06** (2006.01)

CPC (source: EP KR US)  
**H01J 1/15** (2013.01 - US); **H01J 1/304** (2013.01 - KR); **H01J 1/312** (2013.01 - US); **H01J 21/105** (2013.01 - EP US);  
**H01J 23/04** (2013.01 - EP US); **H01J 35/065** (2013.01 - EP KR US); **H01J 2201/30423** (2013.01 - US); **H01J 2201/30434** (2013.01 - US);  
**H01J 2235/068** (2013.01 - EP KR US)

Citation (search report)

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- [X] US 2004116034 A1 20040617 - DEN TOHRU [JP], et al
- [XI] US 2010181896 A1 20100722 - LEE CHEOL-JIN [KR], et al
- [A] JP 2000311578 A 20001107 - SHARP KK

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CN112002628A

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3267463 A2 20180110; EP 3267463 A3 20180404**; AU 2017204507 A1 20180125; AU 2017204507 B2 20220414;  
CN 107591299 A 20180116; CN 107591299 B 20210727; FR 3053830 A1 20180112; JP 2018010869 A 20180118; JP 6982994 B2 20211217;  
KR 102458120 B1 20221021; KR 20180006322 A 20180117; TW 201812824 A 20180401; TW I753924 B 20220201; US 10720298 B2 20200721;  
US 2018012723 A1 20180111

DOCDB simple family (application)  
**EP 17178583 A 20170629**; AU 2017204507 A 20170630; CN 201710545817 A 20170706; FR 1601057 A 20160707; JP 2017130850 A 20170704;  
KR 20170086028 A 20170706; TW 106122421 A 20170704; US 201715638237 A 20170629