

Title (en)

Electron beam window, window assembly, and electron gun

Title (de)

Elektronendurchlässiges Fenster, Fenstereinheit und Elektronenstrahlerzeuger

Title (fr)

Fenêtre transparente aux électrons, ensemble de fenêtre et canon à électrons

Publication

**EP 1670017 A1 20060614 (EN)**

Application

**EP 04257542 A 20041203**

Priority

EP 04257542 A 20041203

Abstract (en)

An electron beam window (10) is protected from damage by a high energy electron beam (15) by providing an electrically conductive path in the form of one or more conductive layers (26 and/or 27) earthed (18, 21) to a structure (12) of an electron beam gun (11). The electrically conductive layers (26 and/or 27) are adhered to their respective surfaces (24 and/or 25) and may comprise a conductive layer that is sufficiently thin that it will not significantly impede the passage of electrons through the window (10). Each layer (26 and/or 27) is preferably formed of aluminium but could also be formed from magnesium, titanium, platinum, gold, indium tin oxide, or silica doped to make it electrically conductive. Alternatively, the electron beam window (10) can be made conductive by incorporating an electrically conductive dopant in the diamond, or by ion implantation of at least one of the surfaces (24, 25).

IPC 8 full level

**H01J 5/18** (2006.01); **H01J 5/22** (2006.01); **H01J 33/04** (2006.01)

CPC (source: EP)

**H01J 5/18** (2013.01); **H01J 5/22** (2013.01); **H01J 33/04** (2013.01)

Citation (search report)

- [DX] US 2002048345 A1 20020425 - BACHMANN PETER KLAUS [DE], et al
- [X] DE 2501885 A1 19760722 - LICENTIA GMBH
- [X] WO 0116991 A1 20010308 - 3M INNOVATIVE PROPERTIES CO [US]
- [X] EP 0736780 A1 19961009 - RIKAGAKU KENKYUSHO [JP], et al
- [DX] US 2002048344 A1 20020425 - BACHMANN PETER KLAUS [DE], et al
- [X] US 2004222733 A1 20041111 - AVNERY TZVI [US], et al
- [X] US 3815094 A 19740604 - SMITH D
- [X] US 3211937 A 19651012 - HESTER ROSS E, et al
- [X] US 3611418 A 19711005 - UNO YOSHIHIRO, et al
- [A] US 2003131787 A1 20030717 - LINARES ROBERT C [US], et al

Cited by

CN106409637A; RU2680823C1

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 MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

**EP 1670017 A1 20060614**

DOCDB simple family (application)

**EP 04257542 A 20041203**