

Title (en)

Thermoionic emissive cathode method of fabricating the same thermoionic emissive cathode and electron beam apparatus.

Title (de)

Thermisch emittierende Kathode, Herstellungsverfahren einer solchen thermisch emittierende Kathode und Elektronenstrahl-Gerät.

Title (fr)

Cathode à émission thermoionique, procédé de fabrication d'un telle cathode à émission thermoionique et appareil à faisceau d'électrons.

Publication

**EP 0637046 A1 19950201 (EN)**

Application

**EP 94111883 A 19940729**

Priority

JP 18790293 A 19930729

Abstract (en)

A thermoionic emissive cathode formed from a sintered mixture of at least one high melting point refractory and ion sintered durable substance selected from a group consisting of a metal having melting point equal to or higher than 2400 DEG C, an alloy containing the metal as a main constituent thereof, a carbide of the metal, a boride of the metal, zirconium carbide and zirconium boride and at least one electron emissive substance having low work function, selected from borides or oxides of a metal selected from a group consisting of lanthanum, yttrium, cerium and cesium, said sintered mixture being prepared by heating and pressing, is used in an electron beam apparatus. In this electron beam apparatus, it is possible to stably irradiate electron beam with heating temperature of the thermoionic emissive cathode being about 1500 DEG C to 1800 DEG C under a vacuum pressure in the range of  $10^{-2}$  to  $10^{-3}$  Pa. <IMAGE>

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**H01J 1/14**

IPC 8 full level

**H01J 1/14** (2006.01)

CPC (source: EP)

**H01J 1/14** (2013.01); **H01J 2237/06308** (2013.01)

Citation (search report)

- [X] EP 0056749 A2 19820728 - THOMSON CSF [FR]
- [X] FR 2058653 A5 19710528 - ONERA (OFF NAT AEROSPATIALE)
- [A] EP 0409275 A2 19910123 - NEC CORP [JP]
- [A] EP 0525646 A1 19930203 - NEC CORP [JP]
- [A] US 3823337 A 19740709 - MITRA N, et al
- [A] DATABASE WPI Section Ch Week 7345, Derwent World Patents Index; Class L03, AN 73-68263U
- [A] B.S. KUL'VARSKAYA ET AL.: "Thermionic emission of certain refractory materials and their possible application in devices filled with complex gaseous medium", RADIO ENGINEERING AND ELECTRONIC PHYSICS, vol. 13, no. 7, July 1968 (1968-07-01), WASHINGTON US, pages 1131 - 1134

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Designated contracting state (EPC)

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**EP 0637046 A1 19950201**; **EP 0637046 B1 19980401**; DE 69409306 D1 19980507; DE 69409306 T2 19980730

DOCDB simple family (application)

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