

Title (en)

Protection device for neutron tubes.

Title (de)

Schutzworrichtung von Neutronenröhren.

Title (fr)

Dispositif de protection des tubes neutroniques.

Publication

EP 0357133 A1 19900307 (FR)

Application

EP 89202146 A 19890824

Priority

FR 8811259 A 19880826

Abstract (en)

Protection device for a neutron tube comprising an ion source, the anode of which (2) is brought to a positive potential in relation to the cathode (3) by means of a supply source and the ionic beam of which, which is accelerated by means of the acceleration electrode (5), strikes a target (6) which is arranged on an insulating support (9) and placed at a negative potential provided by a supply HT. <??>The said protection device consists of electrical limiting elements of the tube current (11, 12) and/or of the target voltage which are made unchangeable by enclosing them in the interior of the neutron tube in such a way that any attempt to modify the electrical parameters determining the normal functioning conditions of the tube requires the latter to be opened. <??>Field of application:neutron tubes. <IMAGE>

Abstract (fr)

Dispositif de protection d'un tube neutronique comportant une source d'ions dont l'anode (2) est portée à un potentiel positif par rapport à la cathode (3) au moyen d'une alimentation source et dont le faisceau ionique accéléré au moyen de l'électrode d'accélération (5) vient frapper une cible (6) disposée sur un support isolant (9) et portée à un potentiel négatif fourni par une alimentation HT. Ledit dispositif de protection est constitué par des éléments de limitation électrique du courant tube (11, 12) et/ou de la tension cible qui sont rendus inaltérables en les incluant à l'intérieur du tube neutronique, de telle sorte que toute tentative de modification des paramètres électriques fixant les conditions normales de fonctionnement du tube nécessite l'ouverture de ce dernier. Application : tubes neutroniques.

IPC 1-7

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CPC (source: EP US)

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Citation (search report)

- [Y] US 3364355 A 19680116 - LAWRENCE RUBY, et al
- [Y] DE 714343 C 19420105 - MUELLER C H F AG
- [A] FR 2179527 A1 19731123 - TEXACO DEVELOPMENT CORP [US]
- [A] US 2988671 A 19610613 - ARNOLD MARIAN H
- [A] DE 1589699 A1 19700618 - DRESSER IND
- [Y] PROC. SYMP. PULSED NEUTRON RESEARCH, Karlsruhe, 10-15 mai 1965, vol. 2, pages 609-622; C.W. ELENGA et al.: "The generation of neutron pulses and modulated neutron fluxes with sealed-off neutron tubes"
- [A] INTERNATIONAL JOURNAL OF APPLIED RADIATION AND ISOTOPES, vol. 34, no. 1, janvier 1983, pages 269-272, Pergamon Press Ltd, Oxford, GB; L.A. SHOPE et al.: "The operation and life of the zetatron neutron tube in a borehole logging application"

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