

Title (en)
X-RAY ROTATING ANODE PLATE, AND METHOD FOR THE PRODUCTION THEREOF

Title (de)
RÖNTGEN-DREHANODENTELLER UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)
PLAQUE ANODE ROTATIVE AUX RAYONS X ET SON PROCÉDÉ DE PRODUCTION

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Application
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Abstract (en)
[origin: WO2009043344A1] The aim of the invention is to design an X-ray rotating anode plate and devise a method for producing such an X-ray rotating anode plate which comprises a base, meets very strict requirements in terms of the temperature of the focal spot and the rotational speed by having a low weight and adequate heat conductivity and being sufficiently resistant to high temperatures, while the cost of materials for the base is kept low. Said aim is achieved by an X-ray rotating anode plate comprising a base (1.1) that contains carbon nanoparticles in a quasi homogeneous spatial distribution which ensures substantially isotropic properties of the base (1.1) in the submacroscopic range. Said carbon nanoparticles can be carbon nanotubes and/or graphite powder nanoparticles having a substantially spherical shape. According to the invention, the solidity and heat conductivity of the base can be improved by additives. Said aim is also achieved by a method in which the starting materials of the base, optionally of a binder layer and/or a diffusion barrier and the X-ray active layer, are brought into an approximate final shape in one procedure in a die by simultaneously applying pressure, temperature, and temporally varied electric currents to said starting materials, the starting materials are compressed to the final thickness, and high-strength diffusion bonds are formed between said starting materials. The invention can be used in high-power X-ray tubes for computed tomography.

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