

Title (en)

X-RAY SOURCE DEVICE AND CONTROL METHOD THEREOF

Title (de)

RÖNTGENSTRAHLENQUELLE UND STEUERVERFAHREN DAFÜR

Title (fr)

DISPOSITIF SOURCE DE RAYONS X ET SON PROCÉDÉ DE COMMANDE

Publication

**EP 4024435 A4 20230809 (EN)**

Application

**EP 19943133 A 20190828**

Priority

KR 2019010970 W 20190828

Abstract (en)

[origin: EP4024435A1] The present invention relates to an X-ray source device and a method of controlling the same and includes emitters formed on an upper surface of a cathode electrode to emit electrons; an anode electrode formed to be spaced apart from the cathode electrode by a preset distance; gate electrodes located between the emitters and the anode electrode and formed by transferring a graphene thin film including at least one layer onto an upper portion of a metal electrode having at least one opening; a focusing lens located between the gate electrodes and the anode electrode and focusing electron beams emitted from the emitters to the anode electrode; and a control module configured to adjust X-ray dose for each position of the subject by performing a two-dimensional matrix control for the emitters and the gate electrodes.

IPC 8 full level

**H01J 35/02** (2006.01); **H01J 1/304** (2006.01); **H01J 9/02** (2006.01); **H01J 35/04** (2006.01); **H01J 35/06** (2006.01); **H01J 35/14** (2006.01)

CPC (source: EP)

**H01J 1/3042** (2013.01); **H01J 9/025** (2013.01); **H01J 35/045** (2013.01); **H01J 35/065** (2013.01); **H01J 2201/30469** (2013.01);  
**H01J 2235/062** (2013.01); **H01J 2235/068** (2013.01)

Citation (search report)

- [XYI] US 2017084417 A1 20170323 - PARK SHANGHYEUN [KR], et al
- [Y] US 7220971 B1 20070522 - CHANG SHA X [US], et al
- [Y] US 2019088437 A1 20190321 - LEE CHEOL JIN [KR], et al
- [Y] WO 2015175765 A1 20151119 - ELWHA LLC [US]
- [Y] US 2018158640 A1 20180607 - CHOI YOUNG CHUL [KR], et al
- See also references of WO 2021040079A1

Cited by

WO2024035843A1

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

DOCDB simple family (publication)

**EP 4024435 A1 20220706; EP 4024435 A4 20230809**; CN 114303220 A 20220408; JP 2022545826 A 20221031; JP 7407476 B2 20240104;  
WO 2021040079 A1 20210304

DOCDB simple family (application)

**EP 19943133 A 20190828**; CN 201980099793 A 20190828; JP 2022513387 A 20190828; KR 2019010970 W 20190828