

Title (en)

High-performance ion source and method for generating an ion beam

Title (de)

Hochleistungs-Ionenquelle und Verfahren zum Erzeugen eines Ionenstrahls

Title (fr)

Source d'ions à haute performance et procédé de génération d'un faisceau d'ions

Publication

EP 2669929 A1 20131204 (EN)

Application

EP 12169819 A 20120529

Priority

EP 12169819 A 20120529

Abstract (en)

An ion source, in which a divergent skimmer electrode is placed, spatially separated from, but in short spatial distance downstream from the tip of the tip electrode, and in which a sheath gas is supplied to flush around the tip electrode, allows achieving a stable and high-flux ion beam. The dimensions of the skimmer electrode may be chosen to adjust the pressure difference across the skimmer electrode, and may support the formation of two Mach cones. This combination of features allows to greatly enhance the ion current, a significant improvement for deposition applications in particular.

IPC 8 full level

H01J 49/16 (2006.01); **H01L 21/02** (2006.01)

CPC (source: EP)

H01J 49/165 (2013.01)

Citation (applicant)

- US 4144451 A 19790313 - KAMBARA HIDEKI
- US 4861988 A 19890829 - HENION JOHN D [US], et al
- US 6294779 B1 20010925 - APFFEL JAMES A [US], et al
- EP 0511961 B1 19950215 - UNIV ROCKEFELLER [US]
- EP 2254142 A2 20101124 - BATTELLE MEMORIAL INSTITUTE [US]

Citation (search report)

- [IY] US 2009071815 A1 20090319 - TAKAMIZAWA ATSUSHI [JP], et al
- [Y] US 2010271631 A1 20101028 - SCHLUETER HANS-JUERGEN [DE], et al
- [Y] US 2003066969 A1 20030410 - DE LA MORA JUAN FERNANDEZ [US]
- [Y] US 2002125423 A1 20020912 - EBELING DANIEL D [US], et al
- [Y] WO 2009118775 A1 20091001 - SHIMADZU CORP [JP], et al
- [A] US 2006108539 A1 20060525 - FRANZEN JOCHEN [DE]
- [A] US 6646253 B1 20031111 - ROHWER EGMONT [CG], et al
- [A] US 2003042458 A1 20030306 - ROHWER EGMONT [ZA], et al

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2669929 A1 20131204

DOCDB simple family (application)

EP 12169819 A 20120529