

## Title (en)

ABRIDGED MULTIPOLE STRUCTURE FOR THE TRANSPORT, SELECTION AND TRAPPING OF IONS IN A VACUUM SYSTEM

## Title (de)

GEBRÜCKTE MEHRPOLIGE STRUKTUR FÜR TRANSPORT, AUSWAHL UND VERFOLGUNG VON IONEN IN EINEM VAKUUMSYSTEM

## Title (fr)

STRUCTURE MULTIPÔLE SIMPLIFIÉE POUR LE TRANSPORT, LA SÉLECTION ET LE PIÉGEAGE D'IONS DANS UN SYSTÈME À VIDE

## Publication

**EP 2715775 A4 20150603 (EN)**

## Application

**EP 12792062 A 20120602**

## Priority

- US 201113152363 A 20110603
- US 201113177780 A 20110707
- US 201113249709 A 20110930
- US 2012040620 W 20120602

## Abstract (en)

[origin: WO2012167207A2] An improved trap-TOF mass spectrometer has a set of electrodes arranged to produce both a quadrupolar RF confining field and a substantially homogeneous dipole field. In operation, ions are first confined by the RF field and then, at a selected time, the RF confining field is discontinued and the dipole field is used to accelerate the ions so as to initiate a TOF MS analysis. The apparatus of the present invention may be used alone or in conjunction with other analyzers to produce mass spectra from analyte ions.

## IPC 8 full level

**H01J 49/06** (2006.01); **H01J 49/26** (2006.01); **H01J 49/42** (2006.01)

## CPC (source: EP)

**H01J 49/063** (2013.01); **H01J 49/401** (2013.01); **H01J 49/403** (2013.01); **H01J 49/421** (2013.01); **H01J 49/4225** (2013.01)

## Citation (search report)

- [Y] WO 2005119737 A1 20051215 - UNIV FUDAN [CN], et al
- [Y] GB 1293148 A 19721018 - VARIAN ASSOCIATES [US]
- [A] WO 2007136373 A1 20071129 - SHIMADZU CORP [JP], et al
- [A] US 4985626 A 19910115 - MARGULIES MARCEL [US]
- [A] SHENHENG GUAN ET AL: "FILAR ION CYCLOTRON RESONANCE ION TRAP: SPATIALLY MULTIPLEXED DIPOLAR AND QUADRUPOLEAR EXCITATION FOR SIMULTANEOUS ION AXIALIZATION AND DETECTION", REVIEW OF SCIENTIFIC INSTRUMENTS, AIP, MELVILLE, NY, US, vol. 66, no. 1, PART 01, January 1995 (1995-01-01), pages 63 - 66, XP000495428, ISSN: 0034-6748, DOI: 10.1063/1.1146312
- [A] SHENHENG G ET AL: "Ion traps for Fourier transform ion cyclotron resonance mass spectrometry: principles and design of geometric and electric configurations", INTERNATIONAL JOURNAL OF MASS SPECTROMETRY AND ION PROCESSES, ELSEVIER SCIENTIFIC PUBLISHING CO. AMSTERDAM, NL, vol. 146-14, 31 August 1995 (1995-08-31), pages 261 - 296, XP004036674, ISSN: 0168-1176
- See references of WO 2012167207A2

## 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)

**WO 2012167207 A2 20121206; WO 2012167207 A3 20130131**; CA 2837873 A1 20121206; CA 2837873 C 20170912; EP 2715775 A2 20140409; EP 2715775 A4 20150603; EP 2715775 B1 20170809

## DOCDB simple family (application)

**US 2012040620 W 20120602**; CA 2837873 A 20120602; EP 12792062 A 20120602