Title (en)

Mass Spectrometer

Title (de)

Massenspektrometer

Title (fr)

Spectromètre de masse

Publication

EP 1365438 A3 20060412 (EN)

Application

EP 02257117 A 20021014

Priority

- GB 0211373 A 20020517
- GB 0212641 A 20020531
- GB 0222055 A 20020923

Abstract (en)

[origin: EP1365438A2] A mass spectrometer is disclosed wherein ions having a particular desired charge state are selected by operating an ion mobility spectrometer 4 in combination with a quadrupole mass filter 5. Precursor ions are fragmented or reacted to form product ions in a collision cell ion trap 6 and sent back upstream to an upstream ion trap 2. The fragment or product ions are then passed through the ion mobility spectrometer 4 wherein they become temporally separated according to their ion mobility. Fragment or product ions are then re-trapped in the collision cell ion trap 6 before being released therefrom in packets. A pusher electrode 8 of a time of flight mass analyser is energised a predetermined period of time after a packet of ions is released from the collision cell ion trap 6. Accordingly, it is possible to select multiply charged precursor ions from a background of singly charged ions, fragment them, and mass analyse the fragment ions with a near 100% duty cycle across the whole mass range.

IPC 8 full level

H01J 49/40 (2006.01); **H01J 49/42** (2006.01)

CPC (source: EP)

H01J 49/004 (2013.01); **H01J 49/4215** (2013.01); **H01J 49/426** (2013.01)

Citation (search report)

- [AX] WO 0070335 A2 20001123 - ADVANCED RES & TECH INST [US], et al
- [AX] US 2002014586 A1 20020207 - CLEMMER DAVID E [US]
- [A] HARDEN C S ET AL: "DETECTION OF METHYL ISOCYANATE IN AIR WITH THE USE OF HAND-HELD IONMOBILITY SPECTROMETERS", August 1997, FIELD ANALYTICAL CHEMISTRY AND TECHNOLOGY, WILEY, NEW YORK, NY,, US, PAGE(S) 285-294, ISSN: 1086-900X, XP000944904

Cited by

JP2011510463A; US2016274059A1; CN111710588A; EP3040717A1; EP1467398A3; US10551347B2; GB2533010A; GB2533010B; GB2523221A; GB2523221B; EP2001039A1; CN109755096A; DE102004014582B4; DE102004014582A1; US7064319B2; WO2015071648A3; WO2015071647A3; US7276688B2; US9880129B2; US11424113B2; WO2005104182A3; WO2009093045A3; US8415618B2; US10724990B2; WO2009093045A2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

DOCDB simple family (publication)

EP 1365438 A2 20031126; **EP 1365438 A3 20060412**; **EP 1365438 B1 20100908**; CA 2407957 A1 20031117; CA 2407957 C 20101214; EP 2001039 A1 20081210; EP 2001039 B1 20120328; GB 0321698 D0 20031015; GB 2390478 A 20040107; GB 2390478 B 20040602

DOCDB simple family (application)

EP 02257117 A 20021014; CA 2407957 A 20021011; EP 08013533 A 20021014; GB 0321698 A 20020923