

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 September 2001 (20.09.2001)

PCT

(10) International Publication Number
WO 01/069220 A3

(51) International Patent Classification⁷: **H01J 49/04**,
G01N 27/64, H01J 49/10

(21) International Application Number: PCT/CA01/00313

(22) International Filing Date: 14 March 2001 (14.03.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/189,085 14 March 2000 (14.03.2000) US

(71) Applicant (for all designated States except US): **NATIONAL RESEARCH COUNCIL CANADA** [CA/CA];
1500 Montreal Road, Ottawa, Ontario K1A 0R6 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **GUEVREMONT, Roger** [CA/CA]; 2059 Gatineau View Crescent, Gloucester, Ontario K1J 7W9 (CA). **PURVES, Randy** [CA/CA]; 59-6247 Sundown Crescent, Gloucester, Ontario K1C 2M1

(CA). **BARNETT, David** [CA/CA]; 1934 Longman Crescent, Orleans, Ontario K1C 5G6 (CA). **JAVAHERY, Gholamreza** [CA/CA]; 4660 Aurora Road, RR2, Kettleby, Ontario L0G 1J0 (CA). **STOTT, William, Ronald** [CA/CA]; 5220 15th Sideroad, King City, Ontario L7B 1K4 (CA).

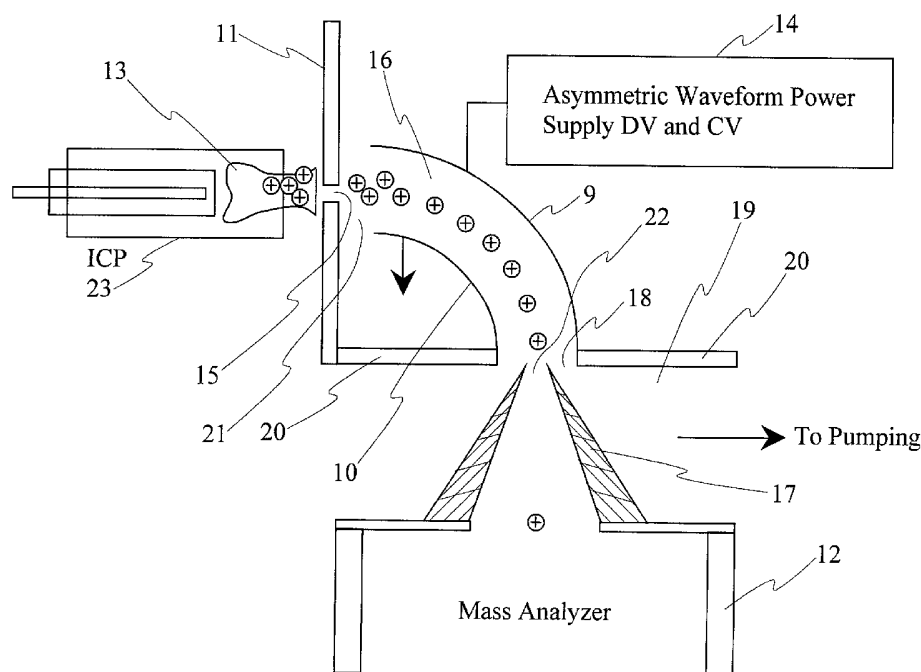
(74) Agent: **FREEDMAN, Gordon**; Freedman & Associates, Suite 350, 117 Centrepointe Drive, Nepean, Ontario K2G 5X3 (CA).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR TRANDEM ICP/FAIMS/MS



(57) Abstract: A method and an apparatus for selectively transmitting ions produced by an inductively coupled plasma ionization technique is disclosed. Ions produced within the plasma source are provided to a FAIMS analyzer within a low pressure chamber of a mass spectrometer and in fluid communication with the plasma source for receiving ions therefrom. The ions are separated in FAIMS and at least some of the ions are provided to the mass spectrometer after separation.



WO 01/069220 A3



Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

(88) Date of publication of the international search report:

3 January 2003

(15) Information about Correction:

Previous Correction:

see PCT Gazette No. 38/2002 of 19 September 2002, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 01/00313

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H01J49/04 G01N27/64 H01J49/10		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC 7 G01N H01J		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, INSPEC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 07530 A (THOMSON BRUCE A ;JOLLIFFE CHARLES L (CA); MDS HEALTH GROUP LTD (CA) 27 February 1997 (1997-02-27) page 21, last paragraph page 23, line 8 - line 11	1,9
A	BURYAKOV I A ET AL: "A NEW METHOD OF SEPARATION OF MULTI-ATOMIC IONS BY MOBILITY AT ATMOSPHERIC PRESSURE USING A HIGH-FREQUENCY AMPLITUDE-ASYMMETRIC STRONG ELECTRIC FIELD" INTERNATIONAL JOURNAL OF MASS SPECTROMETRY AND ION PROCESSES, ELSEVIER SCIENTIFIC PUBLISHING CO. AMSTERDAM, NL, vol. 128, 1993, pages 143-148, XP000865595 ISSN: 0168-1176 cited in the application abstract	1,9
<input type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents :		
A document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed		*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family
Date of the actual completion of the international search 9 July 2002		Date of mailing of the international search report 16/07/2002
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Hu1ne, S

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/CA 01/00313

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9707530	A	27-02-1997	AU 6653296 A	12-03-1997
			CA 2229070 A1	27-02-1997
			WO 9707530 A1	27-02-1997
			EP 0843887 A1	27-05-1998
			JP 11510946 T	21-09-1999
			US 6111250 A	29-08-2000
			US 5847386 A	08-12-1998
