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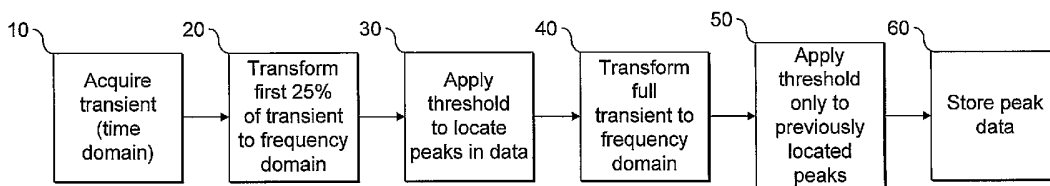
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD OF PROCESSING MASS SPECTROMETRY DATA



(57) Abstract: A method of processing Fourier Transform Mass Spectrometry (FTMS) data comprises carrying out a Fourier Transform of a part of a time domain transient and identifying from that transformed data signal peaks representative of the presence of ions. Once the peaks have been identified, the full transient is then transformed, and the peaks identified in the partial transient transform are used to locate true peaks in the transformed full transient. The number of 'false' peaks resulting from random noise has been found to correlate to the resolution, so that using a partial transient to identify true peaks reduces the risk of false peaks being included; nevertheless this information can then be applied to the full data set when transformed. As an alternative, different parts of the full data set can be transformed and then correlated; because any noise will be random, false peaks should occur at different places in the two partial transforms.

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. G06K9/00 H01J49/38

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)
G06K 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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HANNA, ALAN D.: "Noise Analysis for FTMS Spectra" PROCEEDINGS OF THE 10TH INTERNATIONAL MASS SPECTROMETRY CONFERENCE, 1985, XP008063444 Swansea cited in the application the whole document	1-3, 15, 18, 23-25
X	HANNA D A: "FTMS NOISE CHARACTERIZATION" PROCEEDINGS OF THE ASMS CONFERENCE ON MASS SPECTROMETRY AND ALLIED TOPICS, XX, XX, 26 May 1985 (1985-05-26), pages 435-436, XP008049976 cited in the application the whole document	1-3, 15, 18, 23-25
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Further documents are listed in the continuation of Box C.

See patent family 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

14 September 2006

Date of mailing of the international search report

29/09/2006

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2005/042714

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 995 989 A (GEDCKE ET AL) 30 November 1999 (1999-11-30) the whole document -----	1-3, 15, 18, 23-25
X	US 2004/195500 A1 (SACHS JEFFREY R ET AL) 7 October 2004 (2004-10-07) abstract; figures 1A, 1B, 2-8 -----	4-14, 16, 17, 19-25
X A	US 5 175 430 A (ENKE ET AL) 29 December 1992 (1992-12-29) abstract; figure 6 -----	4
T	MARSHALL A G: "Milestones in fourier transform ion cyclotron resonance mass spectrometry technique development" INTERNATIONAL JOURNAL OF MASS SPECTROMETRY, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 200, no. 1-3, 25 December 2000 (2000-12-25), pages 331-356, XP004227620 ISSN: 1387-3806 the whole document -----	
T	MARSHALL, ALAN G.; HENDRICKSON, CHRISTOPHER L.; JACKSON GEORGE S.: "Fourier Transform Ion Cyclotron Resonance Mass spectrometry: a Primer" MASS SPECTROMETRY REVIEWS, [Online] vol. 17, no. 1, 1998, pages 1-35, XP002378524 United States ISSN: 0277-7037 Retrieved from the Internet: URL: http://www3.interscience.wiley.com/cgi-bin/fulltext/10009487/PDFSTART [retrieved on 2006-06-24] the whole document -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/042714

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3, 15, 18, 23-25

A fast method to separate fourier transform mass spectrometry data peaks from noise using a threshold

2. claims: 4-14, 16, 17, 19-22

A method to compare two sets of mass spectrometry data

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2005/042714

Patent document cited in search report	Publication date	Publication date	Patent family member(s)	Publication date
US 5995989	A	30-11-1999	NONE	
US 2004195500	A1	07-10-2004	NONE	
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			WO 9220435 A1	26-11-1992