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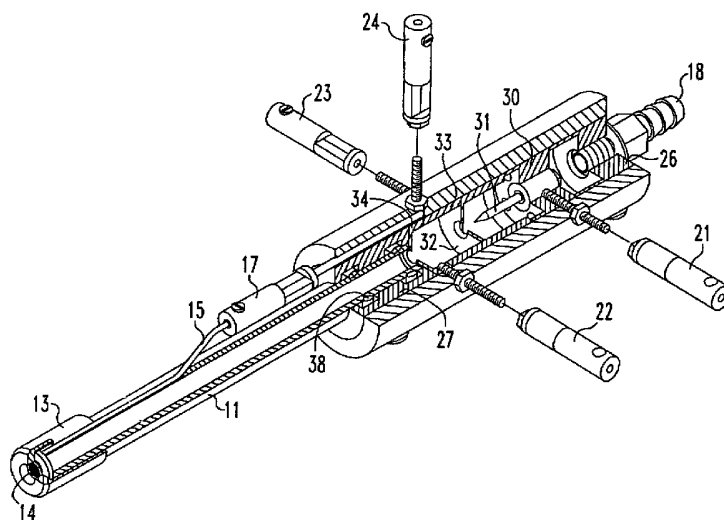
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(54) Title: ATMOSPHERIC PRESSURE ION SOURCE



(57) Abstract: A non-radioactive atmospheric pressure device for ionization of analytes comprises an atmospheric pressure chamber having an inlet for carrier gas, a first electrode (31) at one end, and a counter-electrode (32) at the other end of the chamber for creating an electrical discharge in the carrier gas thus creating metastable neutral excited-state species. Optionally, a grid (14) is provided to generate electrons or ions by contact with the excited-state species. The carrier gas containing the excited-state species or the electrons generated therefrom is directed at an analyte at atmospheric pressure near ground potential to form analyte ions.

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INTERNATIONAL SEARCH REPORT

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<p>A. CLASSIFICATION OF SUBJECT MATTER</p> <p>IPC(7) : H01J 49/10</p> <p>US CL : 250/288, 423R, 424; 356/316</p> <p>According to International Patent Classification (IPC) or to both national classification and IPC</p>														
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols)</p> <p>U.S. : 250/288, 423R, 424; 356/316</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)</p> <p>Please See Continuation Sheet</p>														
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>US 4,546,253 A (TSUCHIYA et al.) 08 October 1985 (08.10.1985), whole document.</td> <td>1-35</td> </tr> <tr> <td>A</td> <td>US 5,192,865 A (ZHU) 09 March 1993 (09.03. 1993), whole document.</td> <td>1-35</td> </tr> <tr> <td>A</td> <td>US 6,124,675 A (BERTRAND et al.) 26 September 2000 (26.09.2000), whole document.</td> <td>1-35</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	A	US 4,546,253 A (TSUCHIYA et al.) 08 October 1985 (08.10.1985), whole document.	1-35	A	US 5,192,865 A (ZHU) 09 March 1993 (09.03. 1993), whole document.	1-35	A	US 6,124,675 A (BERTRAND et al.) 26 September 2000 (26.09.2000), whole document.	1-35
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<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"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</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&amp;" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"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	"E" earlier application or patent published on or after the international filing date	"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	"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)	"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	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed			
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