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[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR REAL TIME DETERMINATION OF SIZE AND CHEMICAL COMPOSITION OF AEROSOL PARTICLES

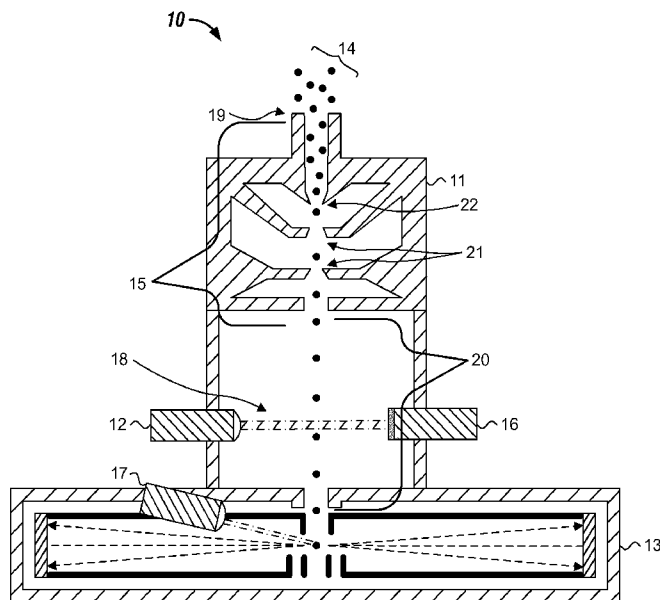


Fig. 1

(57) Abstract: The invention related to aerosol particle identification and, in particular, to a system and method for real time determination of size and optionally the chemical composition of aerosol particles.



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**A. CLASSIFICATION OF SUBJECT MATTER*****G01N 15/14(2006.01)i, G01N 15/06(2006.01)i, H01J 49/26(2006.01)i***

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)

G01N 15/14; B01D 59/44; G01F 1/708; G01J 3/42; G01N 15/02; G01N 15/06; G01N 24/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	US 5998215 A1 (KIMBERLY A. PRATHER et al.) 07 December 1999 See Abstract, Figures 1-5 and Claims 1-7.	1, 15 2-14, 16-22
Y A	US 5012118 A1 (PREIKSCHAT, FRITZ K. et al.) 30 April 1991 See Abstract, Figure 1 and Claims 1-8.	1, 15 2-14, 16-22
A	WO 01-06216 A1 (FUNES-GALLANZI, M) 25 January 2001 See Abstract and Figures 1-2.	1-22
A	US 4348111 A1 (APOSTOLOS GOULAS et al.) 07 September 1982 See Abstract and Figures 1-4.	1-22
A	US 2008-0204746 A1 (JORGE E. GONZALEZ CRUZ et al.) 28 August 2008 See Abstract, Figures 1-4 and Claim 1.	1-22



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&amp;" document member of the same patent family

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2009/064550**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5998215 A1	07.12.1999	AU 1998-96767 A1 US 5681752 A1 WO 99-18595 A1	27.04.1999 28.10.1997 15.04.1999
US 5012118 A1	30.04.1991	WO 91-09296 A1	27.06.1991
WO 01-06216 A1	25.01.2001	GB 0017497 D0 GB 2352033 A GB 9916932 D0	30.08.2000 17.01.2001 22.09.1999
US 4348111 A1	07.09.1982	EP 0018458 A2 EP 0018458 A3 JP 55-080037 A	12.11.1980 01.07.1981 16.06.1980
US 2008-0204746 A1	28.08.2008	US 2009-310128 A1 US 7595864 B2	17.12.2009 29.09.2009