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(54) Title: ULTRAVIOLET LIDAR FOR DETECTION OF BIOLOGICAL WARFARE AGENTS

(57) Abstract: A system and method for detecting airborne agents. The system includes a semiconductor ultraviolet optical source configured to emit an ultraviolet light, a controller configured to generate a pseudo-random code for emission of the ultraviolet light modulated at the pseudo-random code, a telescope configured to focus the ultraviolet light to a distance from the source and to receive elastically backscattered signals and fluorescence signals from the distance, and a sensor configured to detect the elastically backscattered and fluorescence signals. The method generates a pseudo-random code and emits at least one wavelength of ultraviolet light modulated at the pseudo-random code, transmits the modulated ultraviolet light pulses to a distance from the source, receives elastically backscattered signals and fluorescence signals from the distance, and detects the elastically backscattered and fluorescence signals.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/12382

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **C12M 1/00**(2006.01);**C12Q 1/00**(2006.01);**G01N 31/00**(2006.01)

USPC: 435/283.1;435/4;702/22
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)
U.S. : 435/283.1; 435/4; 702/22

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 practicable, search terms used)
EAST, DIALOG

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Snook. Laser techniques for chemical analysis. Chemical Society Review. 1997, Vol. 26, pages 319-326, see entire document.	1-4, 6, 8, 10-12 15-18 and 20-21 --- 1, 7, 9, 13-14 and 18
Y	US 2002/0175294 A1 (LEE et al.) 28 November 2002 (28.11.2002), par. 0004, 0005, 0011	5 and 19
Y	GITTINS, C.M. et al. Quantitative gas sensing by back scatter-absorption measurements of a pseudorandom code modulated A - 8 um quantum cascade laser. Optics Letters. 15 August 2000, Vol. 25, No. 16, pages 1162-1164, see entire document.	1, 7, 9, 13-14 and 18

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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