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(71) Applicant: CAS MEDICAL SYSTEMS, INC. [US/US]; 44 East Industrial Road, Branford, CT 06405 (US).

(72) Inventors: CHEN, Bo; 18 Strang Road, Derby, CT 06418 (US). BENNI, Paul, B.; Apt. N301, 1450 Washington Boulevard, Stamford, CT 06902 (US).

(74) Agents: GETZ, Richard, D. et al.; McCormick, Paulding & Huber LLP, CityPlace II, 185 Asylum Street, Hartford, CT 06103-3402 (US).

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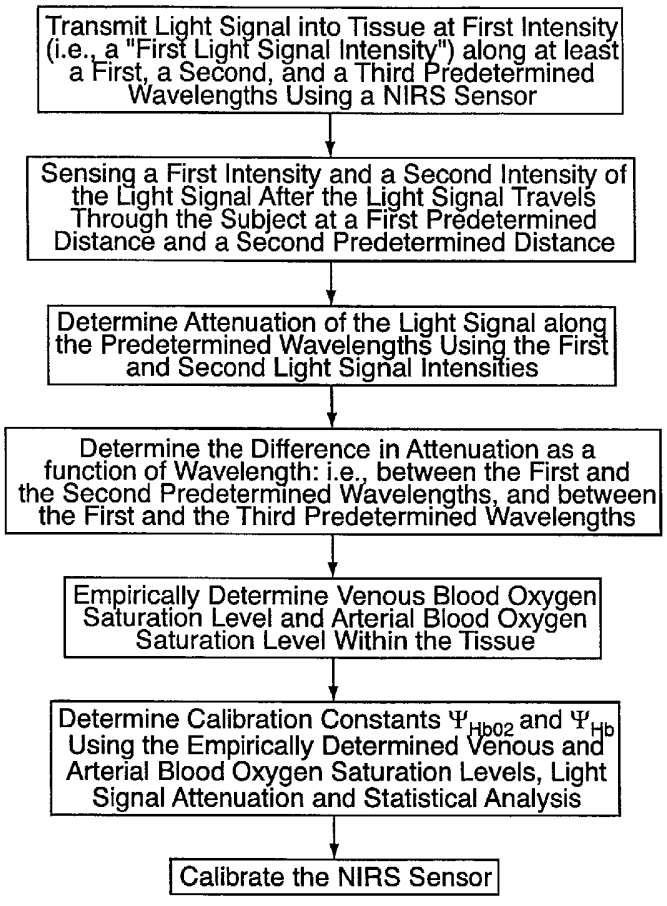
(54) Title: METHOD FOR SPECTROPHOTOMETRIC BLOOD OXYGENATION MONITORING



(57) Abstract: A method and apparatus for non-invasively determining the blood oxygen saturation level within a subject's tissue is provided that utilizes a near infrared spectrophotometric (NIBS) sensor capable of transmitting a light signal into the tissue of a subject and sensing the light signal once it has passed through the tissue via transmittance or reflectance. The method includes the steps of: (1) transmitting a light signal into the subject's tissue, wherein the transmitted light signal includes a first wavelength, a second wavelength, and a third wavelength; (2) sensing a first intensity and a second intensity of the light signal, along the first, second, and third wavelengths after the light signal travels through the subject at a first and second predetermined distance; (3) determining an attenuation of the light signal for each of the first, second, and third wavelengths using the sensed first intensity and sensed second intensity of the first, second, and third wavelengths; (4) determining a difference in attenuation of the light signal between the first wavelength and the second wavelength, and between the first wavelength and the third wavelength; and (5) determining the blood oxygen saturation level within the subject's tissue using the difference in attenuation between the first wavelength and the second wavelength, and the difference in attenuation between the first wavelength and the third wavelength.

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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61B 5/00

US CL : 600/331; 250/341.5

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. : 600/331, 323, 336; 250/341.5, 330.09, 341.1; 356/41, 319

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,805,623 A (JOBSIS) 21 February 1989 (21.02.1989), see the entire document.	1-53
A	US 5,729,333 A (OSTEN et al) 17 March 1998 (17.03.1998), see the entire document.	1-53
A	US 6,192,260 B1 (CHANCE) 20 February 2001 (20.02.2001), see the entire document.	1-53

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Eric F Winakur

Telephone No. 703/308-0858

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