



US007788038B2

(12) **United States Patent**
Oshita et al.

(10) **Patent No.:** **US 7,788,038 B2**

(45) **Date of Patent:** **Aug. 31, 2010**

(54) **BIOLOGICAL INFORMATION AND BLOOD TREATING DEVICE INFORMATION CONTROL SYSTEM, BIOLOGICAL INFORMATION AND BLOOD TREATING DEVICE INFORMATION CONTROL DEVICE, AND BIOLOGICAL INFORMATION AND BLOOD TREATING DEVICE INFORMATION CONTROL METHOD**

(75) Inventors: **Shuzo Oshita**, Tokushima (JP); **Yasuhiro Kuroda**, Himeji (JP); **Toshiya Okahisa**, Tokushima (JP); **Yoshiaki Ohnishi**, Tokushima (JP); **Noriko Okumura**, Takarazuka (JP)

(73) Assignee: **Koninklijke Philips Electronics N.V.**, Eindhoven (NL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 925 days.

(21) Appl. No.: **10/450,648**

(22) PCT Filed: **Dec. 27, 2001**

(86) PCT No.: **PCT/JP01/11509**

§ 371 (c)(1),
(2), (4) Date: **Jun. 16, 2003**

(87) PCT Pub. No.: **WO02/053209**

PCT Pub. Date: **Jul. 11, 2002**

(65) **Prior Publication Data**

US 2005/0102165 A1 May 12, 2005

(30) **Foreign Application Priority Data**

Dec. 27, 2000 (JP) 2000-397609

(51) **Int. Cl.**
G06F 19/00 (2006.01)
G01N 33/48 (2006.01)
A61M 37/00 (2006.01)

(52) **U.S. Cl.** **702/19**; 356/39; 604/4.01; 604/5.01; 604/6.09; 604/6.11; 604/7

(58) **Field of Classification Search** None
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,061,590 A * 5/2000 Krivitski 600/431
6,780,322 B1 * 8/2004 Bissler et al. 210/637
6,814,864 B1 * 11/2004 Favre et al. 210/321.65
7,072,769 B2 * 7/2006 Fletcher-Haynes et al. 702/21

FOREIGN PATENT DOCUMENTS

WO WO 01/08723 * 2/2001

OTHER PUBLICATIONS

Morales et al. (2001) IEEE Transactions on Control Systems Technology, vol. 9, pp. 445-457.*

* cited by examiner

Primary Examiner—Lori A Clow

(57) **ABSTRACT**

The invention comprises a patient information server device which automatically accumulates together with time information: biological information detected by a bedside monitoring device of a patient or a biological-measuring device; biological information and device information detected by a blood purification device which treats a blood sample taken from the patient; and blood information detected by a circulating blood volume measuring device that detects blood information about a circulating blood sample taken from the patient. A client device simultaneously and chronologically displays or records the patient information stored in the patient information server device. Through this arrangement, it is possible to obtain on a real time basis the biological information of a human body such as a patient's body, and the device information, for example, of a blood treating device.

16 Claims, 25 Drawing Sheets