

Title (en)
SYSTEM AND METHOD FOR NONINVASIVE BLOOD ANALYTE MEASUREMENTS

Title (de)
GERÄT UND VERFAHREN ZUR NICHTINVASIVEN MESSUNG VON BLUTBESTANDTEILEN

Title (fr)
SYSTEME ET PROCEDE DE MESURES NON VULNERANTES D'UN ANALYTE SANGUIN

Publication
EP 1143850 A1 20011017 (EN)

Application
EP 00904453 A 20000119

Priority

- US 0001378 W 20000119
- US 11688399 P 19990122
- US 35919199 A 19990722

Abstract (en)
[origin: WO0042907A1] An intelligent system for measuring blood analytes noninvasively operates on a near infrared absorbance spectrum of in vivo skin tissue. A hierarchical architecture employs a pattern classification engine to adapt the calibration to the structural properties and physiological state of the subject as manifested in the absorbance spectrum. A priori information about the primary sources of sample variability are used to establish general categories of subjects. By applying calibration schemes specific to the various categories, the spectral interference is reduced resulting in improved prediction accuracy and parsimonious calibrations. Two classification rules are disclosed. The first rule assumes the classes are mutually exclusive and applies specific calibration models to the various subject categories. The second rule uses fuzzy set theory to develop calibration models and blood analyte predictions. Therefore, each calibration sample has the opportunity to influence more than one calibration model according to its class membership. Similarly, the predictions from more than one calibration are combined through defuzzification to produce the final blood analyte prediction.

IPC 1-7
A61B 5/00

IPC 8 full level
G01N 21/35 (2014.01); **A61B 5/00** (2006.01); **A61B 5/145** (2006.01); **A61B 5/1455** (2006.01); **A61B 5/1495** (2006.01); **C12M 1/34** (2006.01); **C12Q 1/54** (2006.01); **G01N 21/3577** (2014.01); **G01N 21/359** (2014.01); **G01N 21/47** (2006.01); **G06Q 50/00** (2006.01); **A61B 5/107** (2006.01)

CPC (source: EP)
A61B 5/0075 (2013.01); **A61B 5/14532** (2013.01); **A61B 5/14546** (2013.01); **A61B 5/1455** (2013.01); **A61B 5/7264** (2013.01); **G01N 21/4785** (2013.01); **A61B 5/1075** (2013.01); **A61B 5/7267** (2013.01); **A61B 2560/0223** (2013.01); **G16H 50/20** (2017.12)

Citation (search report)
See references of WO 0042907A1

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
WO 0042907 A1 20000727; **WO 0042907 A9 20011025**; AU 2620900 A 20000807; AU 754677 B2 20021121; BR 0008186 A 20011106; CA 2358473 A1 20000727; EP 1143850 A1 20011017; IL 144401 A0 20020523; IL 144401 A 20060611; JP 2002535023 A 20021022; NZ 513092 A 20030228; TW 498156 B 20020811

DOCDB simple family (application)
US 0001378 W 20000119; AU 2620900 A 20000119; BR 0008186 A 20000119; CA 2358473 A 20000119; EP 00904453 A 20000119; IL 14440100 A 20000119; IL 14440101 A 20010718; JP 2000594375 A 20000119; NZ 51309200 A 20000119; TW 89101109 A 20000201