

Title (en)
NON-INVASIVE MEASUREMENT OF BLOOD COMPONENTS USING RETINAL IMAGING

Title (de)
NICHTINWASIVE MESSUNG VON BLUTBESTANDTEILEN UNTER VERWENDUNG VON RETINALBILDGEBUNG

Title (fr)
MESURE NON INVASIVE DES COMPOSANTS DU SANG AU MOYEN D'IMAGERIE DE LA RETINE

Publication
EP 1278452 A4 20050413 (EN)

Application
EP 00926006 A 20000414

Priority
US 0010088 W 20000414

Abstract (en)
[origin: WO0178589A1] Illuminating light (12) of selected wavelengths in the visible or infrared range is projected through the pupil of the eye (10) onto the fundus. The light reflected back, out through the pupil is detected (22), and analyzed, preferably using the area of the optic disk for analyzing the retinal vessels overlying the optic disk. Specific wavelengths of illuminating light may be chosen for each blood component to be analyzed depending on the spectral characteristics of the substance being analyzed. The reflected image from the retina may be used to measure non-photo-reactive blood components such as hemoglobin, and photo-reactive components such as bilirubin. For the measurement of photo-reactive components, images may be taken before, and after, or during, illumination of the eye with light at wavelengths which will affect the photo-reactive analyte, enabling measurements of the concentration of the analyte.

IPC 1-7
A61B 5/00; A61B 3/14

IPC 8 full level
A61B 3/12 (2006.01); **A61B 3/14** (2006.01); **A61B 5/00** (2006.01); **A61B 5/145** (2006.01); **A61B 5/1455** (2006.01); **G01N 21/27** (2006.01); **G01N 21/35** (2006.01)

CPC (source: EP)
A61B 3/1241 (2013.01); **A61B 3/14** (2013.01); **A61B 5/14532** (2013.01); **A61B 5/14546** (2013.01); **A61B 5/1455** (2013.01); **A61B 5/0013** (2013.01)

Citation (search report)
• [XA] US 5791345 A 19980811 - ISHIHARA KEN [JP], et al
• [X] DE 19741198 A1 19980618 - SIEMENS AG [DE]
• [A] US 5836872 A 19981117 - KENET ROBERT O [US], et al
• [A] GB 2342182 A 20000405 - KEELER LTD [GB]
• [A] US 4267844 A 19810519 - YAMANISHI AKIO
• See references of WO 0178589A1

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 0178589 A1 20011025; AU 4460800 A 20011030; EP 1278452 A1 20030129; EP 1278452 A4 20050413; JP 2003532461 A 20031105

DOCDB simple family (application)
US 0010088 W 20000414; AU 4460800 A 20000414; EP 00926006 A 20000414; JP 2001575895 A 20000414