

Title (en)
SYSTEMS AND METHODS FOR NONINVASIVE HEALTH MONITORING

Title (de)
SYSTEME UND VERFAHREN ZUR NICHTINVASIVEN ÜBERWACHUNG DES GESUNDHEITZUSTANDES

Title (fr)
SYSTÈMES ET PROCÉDÉS DE SURVEILLANCE SANITAIRE NON INVASIVE

Publication
EP 2945529 A4 20160224 (EN)

Application
EP 14740409 A 20140117

Priority
• US 201361753785 P 20130117
• US 201361753789 P 20130117
• US 2014012061 W 20140117

Abstract (en)
[origin: WO2014113681A1] Implementations described and claimed herein provide systems and methods for accessible and reliable routine health monitoring and noninvasive detection and early diagnosis of diseases and conditions. In one implementation, a health monitoring device is provided. The health monitoring device includes a light source configured to emit photons into an optical waveguide, which internally reflects the photons. A compliant surface is compressible against the optical waveguide during a scan of tissue. The compression of the compliant surface against the optical waveguide scatters at least one of the photons into the tissue and/or back through the optical waveguide. An imaging array is configured to collect the at least one scattered photon, forming an image representing a hardness of the tissue relative to surrounding tissue.

IPC 8 full level
A61B 5/00 (2006.01)

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Citation (search report)
• [X] WO 2012006431 A2 20120112 - UNIV TEMPLE [US], et al
• [A] US 2008284925 A1 20081120 - HAN JEFFERSON Y [US]
• [X] JONG-HA LEE ET AL: "High-Resolution Tactile Imaging Sensor Using Total Internal Reflection and Nonrigid Pattern Matching Algorithm", IEEE SENSORS JOURNAL, IEEE SERVICE CENTER, NEW YORK, NY, US, vol. 11, no. 9, 1 September 2011 (2011-09-01), pages 2084 - 2093, XP011338157, ISSN: 1530-437X, DOI: 10.1109/JSEN.2011.2109038
• [X] JONG-HA LEE ET AL: "Inclusion mechanical property estimation using tactile images, finite element method, and artificial neural network", ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY, EMBC, 2011 ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE, IEEE, 30 August 2011 (2011-08-30), pages 14 - 17, XP032318592, ISBN: 978-1-4244-4121-1, DOI: 10.1109/IEMBS.2011.6089885
• [X] LEE JONG-HA ET AL: "Tactile Sensation Imaging for Artificial Palpation", 8 July 2010, GRID AND COOPERATIVE COMPUTING - GCC 2004 : THIRD INTERNATIONAL CONFERENCE, WUHAN, CHINA, OCTOBER 21 - 24, 2004 IN: LECTURE NOTES IN COMPUTER SCIENCE, ISSN 0302-9743 ; VOL. 3251; [LECTURE NOTES IN COMPUTER SCIENCE, ISSN 1611-3349], SPRINGER VERLAG., ISBN: 978-3-642-24711-8, ISSN: 0302-9743, XP047270031
• See references of WO 2014113681A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
WO 2014113681 A1 20140724; CN 105228507 A 20160106; EP 2945529 A1 20151125; EP 2945529 A4 20160224; JP 2016508783 A 20160324

DOCDB simple family (application)
US 2014012061 W 20140117; CN 201480016559 A 20140117; EP 14740409 A 20140117; JP 2015556051 A 20140117