PRINTED ORGANIC LEDS AND PHOTODETECTOR FOR A FLEXIBLE REFLECTANCE MEASUREMENT-BASED BLOOD OXIMETER

Tech ID: 23488 / UC Case 2014-009-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,548,519	02/04/2020	2014-009

BRIEF DESCRIPTION

Home telemonitoring and mobile health devices are advancing the delivery and quality of healthcare at a rapid rate. Pulse oximetry is a related non-invasive practice that measures blood oxygen saturation level in terms of percent saturated peripheral oxygen, in addition to capturing the patient's pulse rate. Pulse oximetry is a standard-of-care in U.S. patient monitoring market and every multi-parameter patient monitor includes a module to measure saturated peripheral oxygen. Market research suggests the U.S. pulse oximetry market grew to over $650M in 2012 and is forecast to reach almost $1B in the U.S. by 2019. Traditional pulse oximetry systems and methods are impaired by several conditions, including skin pigmentation, ambient light interference, low capillary refill, and surface motion. To help overcome these challenges, researchers at Berkeley have successfully demonstrated a blood oximeter using reflectance spectroscopy. This is a promising new alternative to traditional methods, and has been used for samples that are difficult to analyze by transmission. The invention leverages a system design of low-cost polymer light emitting diodes and organic photodetectors to fit to a variety of new, innovative form factors for use in the home, on travel, or under hospital care.

SUGGESTED USES

- Reflectance pulse oximetry
- Bed side devices
- Hand held devices
- Finger pulse devices
- Wrist worn devices
- Telemedicine
- Mobile health

ADVANTAGES

- More universal application such as the feet, forehead and chest
- Leverages industry standard platforms and low-cost parts
- Flexible form factors to satisfy various geometry parameters/requirements

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Printed All-Organic Reflectance Oximeter Array
- Biodegradable Potentiometric Sensor to Measure Ion Concentration in Soil

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OTHER INFORMATION

KEYWORDS

reflectance, pulse, telemedicine, mobile health, oximetry, blood, spectroscopy, photodetector, light emitting diode

CATEGORIZED AS

- **Medical**
  - Devices
  - Diagnostics
- **Sensors & Instrumentation**
  - Biosensors

RELATED CASES

2014-009-0

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