Slap Band Vitals Monitor

Tech ID: 26039 / UC Case 2016-330-0

CONTACT

Alvin Viray
aviray@uci.edu
tel: 949-824-3104.

OTHER INFORMATION

KEYWORDS

Vital signs monitoring, Blood pressure monitoring, Continuous blood pressure, Wearable, Non-invasive, Slap band

CATEGORIZED AS

- **Biotechnology**
  - Health
- **Communications**
  - Wireless
- **Medical**
  - Devices
  - Disease: Cardiovascular and Circulatory System
  - Screening

» **Sensors & Instrumentation**

» Biosensors

» Medical

RELATED CASES

2016-330-0

BRIEF DESCRIPTION

The invention is an easy to use wristband that continuously monitor various vitals like the heart rate, temperature and blood pressure. It eliminates the need for uncomfortable and bulky cuffs that are normally used for such measurements. The wristband communicates wirelessly to the user's or doctor's smart phone for easy access, monitoring and care.

FULL DESCRIPTION

Measuring a patient's vital signs is a routine clinical protocol. In a hospital setting, measuring multiple vital signs requires multiple large and bulky devices. Current wireless devices are specific to measuring a single vital sign, such as heart rate or temperature. Blood pressure is one of the vital signs that requires special attention, as high blood pressure can lead to heart failure or other organ damage. Current blood pressure cuff devices, which employ century-old sphygmomanometer technology, are not able to provide automatic and continuous vitals monitoring. Inventors at UCI have created a novel device that combines vitals-measuring functions into one small wristband, or "slap band". The wristband can be easily applied to a patient's wrist and continuously monitor vital signs, such as heart rate, temperature and blood pressure. Novel sensors developed by the inventors, offer a unique, cuffless solution for blood pressure measurement at the wrist. The sensors and band are built from low cost materials, are re-use, and incorporate Bluetooth capabilities to wirelessly communicate the collected data to provide continuous monitoring for better observation, diagnosis and care.

SUGGESTED USES

· Monitoring vital signs (blood pressure, heart rate and temperature) by:

o Medical professions:

» § In-patient and out-patient monitoring

» § Acute and chronic disease care and management

o In-field safety personnel (policemen, firefighters, soldiers)

o Sports medical and science professionals, and athletes

ADVANTAGES

· Continuous automatic monitoring of multiple vital signs (temperature, heart rate and blood pressure) in a single, self-contained device

· Small in size and comfortable to wear

· Cuffless solution to measure the blood pressure

· Collected data is easily accessible using smart phones

·Cost-efficient: low cost materials used in fabrication and re-usable

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,864,872	01/09/2024	2016-330
United States Of America	Issued Patent	10,898,084	01/26/2021	2016-330

STATE OF DEVELOPMENT

Prototype device has been developed. Optimization of the sensitivity range and the electrical integration of the processing chip is ongoing.

RELATED MATERIALS

» Highly stretchable wrinkled gold thin film wires Joshua Kim1, a), Sun-Jun Park1, Thao Nguyen1, Michael Chu2, Jonathan D. Pegan3, and Michelle Khine1,2, b) - 02/01/2016

UCI Beall Applied Innovation

5270 California Avenue / Irvine,CA
92697-7700 / Tel: 949.824.2683