Unobtrusive Fetal Heartrate Monitoring In The Daily Life

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CONTACT

Richard Y. Tun
tunr@uci.edu
tel: 949-824-3586.

INVENTORS

- Cao, Hung

OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Devices
- **Nanotechnology**
  - Electronics
- **Sensors & Instrumentation**
  - Biosensors
  - Medical
  - Physical Measurement

RELATED CASES

BRIEF DESCRIPTION

A novel wearable, unobtrusive flexible patch designed to facilitate continuous monitoring of fetal heart rate (fHR) and ECG by pregnant women in a home setting.

SUGGESTED USES

·Continuous fHR and ECG (electrocardiogram) monitoring by expectant mothers to ensure health and well-being of the fetus at all stages of the development

·The device can also be used as a diagnostic tool for detecting for fetal heart abnormality in the gestation period

FEATURES/BENEFITS

·Resolves problems with the state-of-the-art cardiac monitoring systems that are bulky, costly and intrusive

·Does not require use of ultrasound, which can be expensive and raise safety concerns for the fetus especially with repeated uses

·Allows for continuous fetal heart rate and ECG monitoring in real time

FULL DESCRIPTION

Current fetal cardiac monitoring technologies are limited to clinical settings, which cannot be used for continuous monitoring and the more recent portable devices are either bulky, intrusive, expensive or difficult to use for non-medical personnel. Typical devices fail to provide monitoring and detection of fetal ECG and changes in waveform characteristics, which is also crucial in determining cardiac health development of the fetus.

The researchers at UCI created a novel, wearable medical device, worn as a patch on the abdominal area or integrated into a garment. The patch is unobtrusive, compact, cost-effective, water-proof and reliable. This device is being investigated as a diagnostic tool beyond passive monitoring.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20230363687	11/16/2023	2020-349

STATE OF DEVELOPMENT

Working prototypes have been fabricated and plans for trials at the UC Irvine medical center.

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Cloud- enabled Wireless pH Monitoring in Laboratory Sample Vials