Maternal And Fetal Heart Rate Monitor

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ABSTRACT

Researchers at the University of California, Davis have developed a device for non-invasive, simultaneous monitoring of fetal and maternal heart rates to enhance reproductive management and health monitoring.

FULL DESCRIPTION

This technology encompasses devices and systems for monitoring both fetal and maternal heart rates in pregnant subjects, offering a non-invasive method to ascertain pregnancy status and monitor health. Utilizing Doppler radar sensors, these devices can detect physiological data from both the fetus and the mother, potentially identifying multiple pregnancies and providing valuable health indicators throughout gestation.

APPLICATIONS

- Non-contact heart monitoring for veterinary and possibly human use.
- Pregnancy testing for large, domesticated animals such as cattle, horses, and sheep.
- Reproductive management in agricultural and breeding operations.

FEATURES/BENEFITS

- Non-invasive detection of fetal and maternal heart rates.
- Capability to monitor multiple health indicators including heart rate variability, respiration, and body temperature.
- Early detection of pregnancy status, as early as 20 days of gestation.
- Identification of multiple fetuses, enhancing reproductive management strategies.
- Reduction in the need for skilled veterinarian labor and risk of injury from traditional palpation methods.
- Reduction in high costs and wait times associated with traditional pregnancy detection methods like blood tests and ultrasound imaging.
- Mitigation of risks of injury and disease transmission inherent in rectal palpation.
- Simplifies early pregnancy detection and identification of multiple fetuses through manual methods.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20210378532	12/09/2021	2018-059

Additional Patent Pending

OTHER INFORMATION

Note: While this invention is available for individual licensing, it is designed to work synergistically with two other related inventions. Licensing all three together is recommended for optimal functionality and integration.

2014-988 https://techtransfer.universityofcalifornia.edu/NCD/33658.html

2018-059 https://techtransfer.universityofcalifornia.edu/NCD/33690.html

INVENTORS

- Bi, Songjie
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- Liu, Xiaoguang
- Matthews, Dennis L.

OTHER INFORMATION

KEYWORDS

quadrature, constellation, heart monitor, atrial fibrillation, Doppler radar

CATEGORIZED AS

- **Medical**
  - Devices
  - Diagnostics
  - Disease: Cardiovascular and Circulatory System
  - Disease: Women's Health
  - Research Tools
  - Screening

RELATED CASES

2018-059-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Multiplexed Point-of-Care Breast Cancer Marker Detection System
- Portable Heart Motion Monitor

- On-Chip Platform for Single-Molecule Electrical Conductance Measurements
- Using Contact Doppler Radar to Monitor PA Pressure in Heart Failure Patients
- Absorptive Microwave Bandpass Filters
- Field Effect Bipolar Transistor
- Quarter-Rate Serial Link Receiver with Low Aperture Delay Samplers for High Data Rate Applications
- A Novel High-Qu Octave-Tunable Resonator And Filter With Lumped Tuning Elements

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