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Transabdominal Fetal Oximetry (TFO) for Intrapartum Fetal Health Monitoring

Tech ID: 33872 / UC Case 2021-644-0

ABSTRACT

Researchers at the University of California, Davis have developed an innovative technology designed to directly measure fetus blood oxygen saturation level through the maternal abdomen from the onset of labor until birth, thereby improving fetal health outcomes.

FULL DESCRIPTION

Existing techniques for monitoring fetal health have a high rate of false positive for detection of fetal hypoxemia, which leads to many unnecessary interventions. The Transabdominal Fetal Oximeter (TFO) developed at UC Davis emits near infrared light through the maternal abdomen to detect variations in diffused light intensity caused by physiological differences in tissue composition. The light signal is then analyzed by a novel algorithm to determine fetal oxygen saturation (by removing the contribution of the maternal oxygen level). Key considerations are patient safety and obtaining strong and reliable signals without overexposure to light or increasing maternal abdominal skin temperature. The technology employs methods and systems to maintain safety throughout the procedure. The technology overcomes the limitations of traditional cardiotocography machines, addresses the lack of direct fetal blood oxygen saturation level measurement, and solves the challenge of balancing signal strength with patient safety.

APPLICATIONS

- ▶ Healthcare providers and medical facilities involved in childbirth.
- ▶ Medical equipment manufacturers in obstetric care.
- ▶ Research applications in the field of fetal health monitoring.

FEATURES/BENEFITS

- ▶ Provides more objective metrics of fetal well-being.
- ▶ Non-invasive and safe for both fetus and mother.
- ▶ Improved signal strength without compromising safety.
- ▶ Includes a provision for temperature and motion management for comprehensive monitoring.
- ▶ Interfaces with existing EFM (Electronic Fetal Monitoring) machines.

PATENT STATUS

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Published Application	WO 2021/108747	06/03/2021	2021-644

Additional Patent Pending

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INVENTORS

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OTHER INFORMATION

KEYWORDS

intrapartum monitoring,
fetal health monitoring,
transabdominal fetal pulse
oximeter

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Bioinformatics
 - ▶ Health
- ▶ **Computer**
 - ▶ Hardware
 - ▶ Other
- ▶ **Medical**
 - ▶ Devices
 - ▶ Software

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