

The Office of Technology Management

UNIVERSITY OF TEXAS  ARLINGTON

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A Wireless Wrist-worn Heart Sound Monitor

INVENTOR: Jung-Chih Chiao

TECHNOLOGY NEED

Heart disease is one of the leading cause of death in both men and women. About 610,000 people die of heart disease in the United States every year. Frequent and noninvasive cardiovascular monitoring is important in the surveillance for cardiovascular catastrophes and treatment of chronic disease. Auscultation is the common diagnostic method to detect heart condition, however it is difficult to adhere stethoscopes on the chest as a wearable sensor and are heavy, too big, thus restrict the monitoring of patients in motion. Furthermore, wearable Holter monitors are used to record the heart activities by placing electrodes on patient's chest often causing inconvenience and discomfort during long-term examination. Also the quality of recording is hindered by speaking and breathing sounds. Therefore, a convenient wearable wrist device for continuous heart sound monitoring and recording is required for long-term medical diagnosis.

INVENTION DESCRIPTION/SOLUTION

Researchers at UTA have developed a wireless wrist sensor to estimate the heart sounds accurately. This device overcomes the limitations of Holter monitors and stethoscopes. Wireless wrist sensor can be used to conveniently monitor a cardiac patient's health without constraints on mobility for long-term. Furthermore, the wrist sensor is implemented with low-power consumption and high connectivity wireless communication for continuous recording. Therefore, this technology can work in real-time for heart monitoring.

APPLICATIONS

- Heart monitoring
- Cardiovascular disease diagnosis such as heart murmurs, coronary artery disease, aortic stenosis etc.

KEY BENEFITS

- Wireless
- Wrist-worn
- Easy and accurate long-term heart sound monitoring
- High connectivity, low-power consumption
- Real-time continuous recording with no compromise on comfort

STAGE OF DEVELOPMENT

Prototype

INTELLECTUAL PROPERTY STATUS

PCT application filed



More about the Inventor:
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