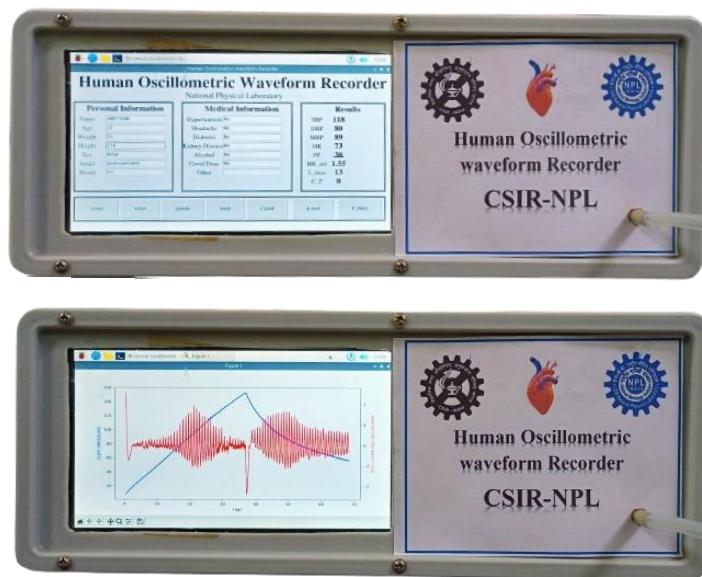




Name of the Technology/knowhow/process: Human Oscillometric Waveform Recorder for detecting Blood pressure, Heart Rate, and Arrhythmia

Summary: The invention addresses the critical need for accurate blood pressure measurement across diverse medical conditions such as sinus rhythm and arrhythmia by developing a Human Oscillometric Waveforms Recorder. The market offers various Blood Pressure devices that utilize the Oscillometric technique due to its simplicity and ease of use. However, each device employs different algorithms to calculate Blood Pressure values in terms of Systolic and Diastolic Blood Pressure, leading to significant deviations in measurement among commercially available devices. Studies have shown that these devices can produce large errors, especially in patients suffering from cardiovascular diseases such as arrhythmia. The accuracy of Blood Pressure readings is influenced by various factors, including physiological activities, motion artifacts, breathing, medical conditions, diet, environmental conditions like temperature and sessions, and geographical latitude. Consequently, there is a need for a comprehensive database of oscillometric waveforms for humans to develop a generic algorithm capable of accurately measuring SBP and DBP worldwide under all conditions. To address this need, we have developed a Human Oscillometric waveform recorder to record the oscillometric waveform and create an extensive database for further research, enhancing the accuracy and reliability of blood pressure measurements. The device is also equipped with an algorithm to identify the oscillometric waveform's sinus rhythmic/arrhythmic nature.





Applications:

1. Creates a diverse database of oscillometric waveforms tailored to the Indian population for improved diagnostics.
2. Supports the development of algorithms based on Indian waveform data, enhancing the precision of cardiovascular assessments.
3. Contributes to advancing blood pressure monitoring technology for more reliable and sophisticated devices.
4. Facilitates the development of a comprehensive blood pressure simulator for training and research purposes
5. Facilitate in-depth studies on blood pressure variations.
6. Contribute to advancements in cardiovascular medicine.
7. Monitor your cardiovascular health for preventive care.
8. Stay informed about your body's responses to various activities.
9. Enhance medical education with real-time waveform demonstrations.
10. Provide students with hands-on experience in cardiovascular diagnosis

Novelty features:

1. Arrhythmia, sinus rhythm, motion artifacts detection
2. Recording and storing oscillometric waveform along with the patient's characteristics.
3. Development of a comprehensive database of oscillometric waveforms.

Advantages:

1. Provide accurate blood pressure values in terms of systolic blood pressure, diastolic blood pressure, mean blood pressure, and pulse pressure along with pulse rate.
2. The device is also capable of distinguishing arrhythmic subjects from sinus rhythmic subjects.
3. The device provides a comprehensive database of oscillometric waveform which can further used to develop algorithms to enhance the accuracy of blood pressure monitoring devices and develop a blood pressure simulator.

Readiness level of the Technology:

Idea	Concept Definition	Proof of Concept	Prototype	Lab Validation	Technology Development	Technology Demonstration	Technology Integrated	Market Launch

IPR related details:

Whether patent(s) has already been granted for this technology/process (Yes/No):NO.....

Whether patent(s) has already been filed for this technology/process (Yes/No):YES.....

If Yes, please provide the following details

Patent Title:Human Oscillometric Waveform Recorder for Sinus Rhythm and Arrhythmia Patients



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Broad Area/Category: Electronics & Instrumentation

User Industries: Hospital, Health and medical sector, R&D