

LOW COST EKG PULSOMETER

(Sponsored by K.S.C.S.T., Bangalore)

*A Project Report
submitted in partial fulfillment of the requirements
for the award of the Degree of Bachelor of
Engineering in Bio-medical
of the Visvesvaraya Technological University, Belgaum*

Submitted by

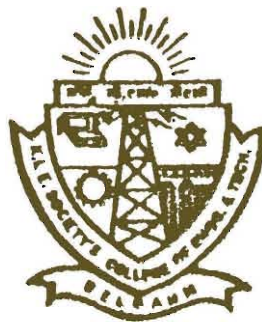
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ABSTRACT

A Pulse Oximeter is a non-invasive device for measuring the percentage of arterial blood (or hemoglobin (Hb)) that is saturated with oxygen. This device can also measure heart rate.

The principle of operation of a Pulse Oximeter is based on measuring the absorption of red and infrared light that passes through a patient's finger or ear lobe by utilizing light sensors. Hemoglobin that transports oxygen (oxy-hemoglobin) absorbs infrared wavelength (800-940 nm) of light and hemoglobin that does not transport oxygen (deoxy-hemoglobin), absorbs visible RED wavelength (600-700 nm) of light. Backgrounds such as fluid, tissue and bone are factored out of the measurement by monitoring the steady state of absorption from bone, tissue, venous blood and arterial blood.

This Pulse Oximeter, which can be used in medical, sports training and home appliance applications. Knowing the percentage of hemoglobin that is saturated with oxygen is important to provide anesthesia, to determine the effectiveness of a patient's respiratory system, as well as help to diagnose various illnesses.