

B-Hue: Award winning device developed by FIVE STARS of ECE Dept



News & Events recently reported the exciting news about the award of Rs.5 lakhs by Texas Instruments to a team of five students of the ECE Dept for converting a project idea of theirs into a real world product. The project concept was one among the top 30 ideas presented in the Indian Innovation Challenge Design Contest 2017 (IICDC-2017) initiated by Texas Instruments in collaboration with Department of Science and Technology (DST).

The *News & Events* Team is now extremely pleased to share with the readers some more insight into the award winning device. These details were made available to *News & Events* by Mr C R Ramesh (AP, ECE Dept) and the *News & Events* Team is thankful to him for this magnanimous gesture.

B-Hue: A non-invasive Haemoglobin Testing Device



In the pre-, peri- and post-operative period, measurement of diagnostic parameters like haemoglobin and oxygen saturation is essential. But currently the invasive methods used to measure haemoglobin are at a disadvantage because of the delay between the blood samples being collected and its lab analysis. This project presents a non-invasive optical technique for measuring haemoglobin level implemented using embedded technology that utilizes spectrophotometry. At different wavelengths absorption coefficient of blood differs. This fact is used to measure the optical characteristics of blood. In this

newly developed system, the principle of spectrophotometry is used. Transmitted light through an area of the skin on finger is detected from which Haemoglobin count is calculated. The accuracy measurement is proposed to be done by comparison of values with those obtained by the clinical method.

This product is one that measures the haemoglobin count of any user without taking his/her blood. It involves no pricking of the body. It involves the user inserting his/her finger into the equipment for about 2 minutes before getting the result (Hb count) displayed. Inside the sensor, LED lights are shone through the finger. These lights are of special wavelengths. These are chosen because of the optical characteristics of haemoglobin.

The device is very simple to use; it can be used by a layman. It has two simple operating switches -one ON/OFF switch and a RESET button. It has a user friendly display that gives the Hb reading after measurement for less than 2 minutes.