

## **NEAR INFRARED DESIGNING**

*Vein detection is one of the latest biomedical techniques researched today. while the concept behind the method is simple ,there are various challenges to be found throughout the design and implementation of e ims at a very imaging processing algorithm device concerning the lighting system and the image processing algorithms at very low price. Although a very few devices based on the infrared technique have been implemented, there still exists a strong need to develop such medical devices. The major problems faced by the doctors today is difficulty in accessing veins for intravenous drug delivery. With improper detection of veins several problems like bruises , rashes , blood coat etc occur. Therefore a noninvasive subcutaneous vein detection system has been developed successfully based on near infrared imaging. The system is interfaced to a laptop and it can also be used for the detection of varicose veins.a customized webcam is used for capturing the veins images and computer vision is used for the processing .The pilot study details are also provided in this report, this also has application in treatment of varicose veins and other superficial vein diseases. The basic principle behind infrared vein detection is, when IR light is transmitted on to the region of interest it passes through tissue and veins absorb that light and the veins appears darker than surrounding tissue .using the strong IR light source consisting of high intensity LED and web camera ,trans illumination image of the subject can be captured. Image processing algorithm is used to separate out the veins from the captured image.*