

ABSTRACT

Veins are one of the most important parts when it comes to medical, one of the medical activities related to veins is venipuncture. Venipuncture is a medical procedure that aims to take blood samples or provide alternative liquid drugs. The difficulty of finding veins is a challenge when performing venipuncture, the thickness of the skin and the color of the skin is a challenge for doctors and medical personnel. Errors in performing venipuncture can cause blood infections and damage to the veins.

Due to this background, the design of this system aims to provide visualization of the veins in the human arm and improve the quality of visualization images by utilizing near infrared which will be fired into the skin. Using the camera as a tool to see near infrared light where the camera has been modified by an infrared light filter so that the camera can see infrared light. This method is the safest way that does not damage the skin.

At the end of this final project design, the system can provide visualization of the veins in the human arm. This system can visualize the position of veins that are not visible to the human eye with a scan distance of 0-30cm and can improve the results of visualization of blood vessels with infrared light beams and image processing. The more value on Crata and the visualization will be more visible.

Kata Kunci: *NIR, Cam, Veins*