

Modification of NIROS for Hemodynamic Imaging of Large Wounds by Edwin A. Robledo | Richard Schutzman | Mia L. Boloix | Anuradha Godavarty

Abstract Id: **211** Submitted: **March 7, 2017** Event: **Conference for Undergraduate Research at FIU 2017** Topic: **Engineering/Engineering Technology**

A near-infrared optical scanner (NIROS) has been developed for non-contact sub-surface imaging of wounds. The current device, NIROS, employs a light source system of different wavelengths to image the same region during diabetic foot imaging studies. However, the illumination region by the system had produced small area of illumination and weak signal intensity, limiting the extraction of oxy- (HbO) and deoxy-hemoglobin (HbR) signals from entire areas of the wound and peri-wound. Herein, the source system of NIROS was modified to assess the changes in blood flow, in terms of changes in HbO and HbR, with maximum illumination between the different regions and increased intensity of illumination. The modified NIROS will allow imaging of larger wounds (> 8cm radius), such as venous leg ulcers and post-amputated diabetic foot ulcers, without adding to the patient time.