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STUDY ON FABRICATION OF A DEVICE FOR FINDING VEINS AND EARLY DETECTION OF BREAST CANCER USING OPTICAL SPECTROSCOPYREP

Tuesday 6 September 2022 12:00 (15 minutes)

Detection of veins is very important technique in the medical clinic applications. Moreover, early detection of cancer, especially breast cancer is the important with patient. This paper presents a preliminary study on the design and fabrication of blood vessel and breast tumor detection devices (BVTDD). The BVTDD device uses a red to a near-infrared light-emitting diode that allows practitioners or doctors to visualize blood vessels and superficial organizations like breast tumors with the naked eye. It has three operating modes including start, shallow test and deep test with a scanning time of 3-5 minutes. The results showed that the BVTDD could provide clear images of blood vessels and breast tumors with the skin penetration depth up to 15 cm. The breast tumor scan tests with the BVTDD for the patients were also found in good agreement with the respective MRI scans. The BBDD device has the advantages of simplicity, ease to use, providing potential practical applications in the medical field, e.g., for assisting superficial tumor diagnoses with MRI and/or CT scans.

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