Wireless Handheld Optical Probe for Breast Cancer Imaging

Technology #cu12093

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Breast Cancer Screening Probe for Reduced Risks and Portability Breast cancer affects approximately 1 in 8 women in the United States and the incidence of breast cancer throughout the world is increasing. With more than 200,000 new cases every year, it accounts for 28% of all new cancers diagnosed in women. Because of growing awareness, more women today are undergoing breast cancer screening, such as x-ray mammography. However, there have been noted cases of poorly maintained mammography machines emitting excessive x-ray radiation that can lead to cancer and radiation sickness. Furthermore, more portable imaging methods are required for various surgical procedures, such as neoadjuvant chemotherapy (NACT). Due to safety issues and shortcomings of current x-ray imaging methods, other promising imaging modalities, such as diffuse optical tomography (DOT), have recently emerged to image breast tissue for the purpose of breast cancer screening.

Hand-Held Optical Probe for Efficient, Safe Breast Cancer Screening The technology is a handheld, optical probe that can be used frequently to monitor patient progress and determine the response of tumors to treatment. This probe uses near-infrared imaging to measure the content of hemoglobin, water, and lipid to determine the presence and size of tumors. Because it is non-ionizing, the probe can safely be used more often than other tools such as x-ray mammography, and its size makes it portable and suitable for screening purposes.

Applications: • Front line and maintenance screening for breast cancer • Screening in regions with poor healthcare access • Alternative applications include neurological and cardiovascular screening

Advantages: • Contains no optical fibers, hence limits the size and weight of the device. • Wireless design and Bluetooth technology allows for greater range of movement • Portable design allows for screening to be conducted in regions with poor healthcare access • Safety design prevents near infrared laser from causing eye damage

Patent Status: Patent Pending

Licensing Status: Available for Licensing or Sponsored Research Support ”

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