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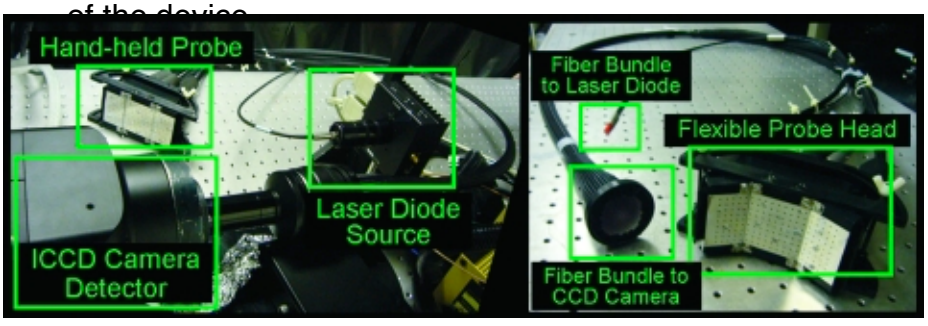
Two-Dimensional Fast Surface Imaging

Currently handheld devices for diagnostic purposes pertaining to breast cancer are being developed. These can be used to decrease the amount of time for results to be given to patients. One device that is being tested in this area is a version that has a flexible faced probe. The success of this could lead to far more accurate test results.

The majority of handheld imaging devices contain flat faced probes. While these are fairly accurate at detecting cancer and tumors they are not as accurate as they could be. This is because the probe face is flat and it does not contour to the shape of the breast or other body part being examined. This can distort the size and location of the tumor being detected.

In order to solve this problem engineers have developed a probe that can be adjusted so that it more closely fits the shape of the body part being tested to eliminate the inaccuracies previously mentioned. Below is a picture of the device.



In order to test the functionality of the device those involved in the study placed a fluorescent target inside a breast and then took images to test whether it was being detected. The first time this was done it was done with a flat faced probe. After doing this the adjustable face probe was used in the same way.

The results of these tests show that the almost real time results of these devices are accurate. They were able to find the location of the fluorescent masses and differentiate between them and the regular tissue.

After this another test was conducted in which multiple fluorescent targets were included. These also gave positive results, detecting all of the targets.

These results show that with future development in this area patients can undergo on site breast imaging and as a result find out preliminary results as the doctor conducting the tests sees them.

Erickson, Sarah, Jiajia Ge, and Andrea Sanchez. Two Dimensional Fast Surface Imaging Using a Handheld Optical Device. Neoplasia Press Inc., 2009.