Microwave Nearfield Radar Imaging (NRI) Using Digital Breast Tomosynthesis (DBT) for Non-Invasive Breast Cancer Detection

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Technology description

Description
Conventionally, there are many common techniques/mechanisms available for breast cancer detection. However, these techniques are associated with one or more limitations such as homogenous uniform background, use of fixed di-electric constant for each tissue type, low radiological contrast between fibrous and cancerous tissue, and elevated acquisition time for imaging signals. This invention relates to a novel and hybrid microwave near-field radar imaging (NRI) system incorporating a digital-breast tomosynthesis (DBT) mechanism for non-invasive detection of breast cancer.

Advantages

The system:
•Provides an accurate background information
•Allows for a single-experiment data collection for both NRI/DBT data
•Effectively allows for an accurate characterization of complex di-electric constant for each pixel
•Uses a phase-based imaging algorithm, effectively collects data in a two dimensional array
•Enables an enhancement of the probability of breast cancer detection as compared to conventional procedures
•Would be commercially useful as an efficient tool for breast cancer screening/detection

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