Abstracts

FDTD Analysis of a Non-Invasive Sensor for the Detection of Breast Tumours

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The detection of breast cancer at an early stage is of vital importance if the high mortality rate from this disease is to be reduced. At present the most widely used imaging technique for the detection of breast tumours is mammography, however, a major disadvantage of this method is that it uses ionising radiation. There is therefore a need for complementary techniques which use non-ionising radiation, for example microwaves. In this paper we present results for a non-invasive imaging system which is currently being used to explore the feasibility of microwave imaging as a method of detecting breast tumours. It is the purpose of this paper to present a clear description of the theoretical model of the microwave sensor and to demonstrate the techniques used to match experimental measurements and calculated data.

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