Cancer Sensor

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Brain is part of the central nervous system (CNS) and it can be affected by cancer or cancer treatment. Pain from a tumour pressing on the nerves and cancer treatment can cause damage to the nerves. The number one leading cause of death among cancer in women is breast cancer. Besides affecting the nervous system, breast cancer patients also have a high tendency to develop brain metastases. Breast cancer cell has similar properties with chemical and proteins in brain; it slips undetected into the brain and hide before developing into tumours. It lives and flourishes in the brain and cause brain metastases.

This artefact shows an early detection of minuscule breast cancer. A few methods in breast cancer detection are self-breast exams, mammography, genetic screening, ultrasound, and magnetic resonance imaging. A new method undergoing research investigation is using microwave sensor with an array of microstrip antennas to detect breast cancer. Microwave is transmitted to the breast to detect the scattering signals. The detection is based on different properties between the breast tissue and the cancer cell. The dielectric properties, permittivity and conductivity of healthy and malignant breast tissues are measured over the microwave frequency range.





