

An antenna for detecting breast cancer

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Breast cancer is a common illness around the world. It is the most common invasive of cancers in women and affects around one in eight and represents about a quarter of all invasive cancers.

A research team in India well aware of the issues, costs and discomfort

surrounding screening and assessment of breast tumors with conventional mammography have developed a novel system for monitoring changes in such a tumor that uses a compact microstrip antenna. Such devices are relatively easy to fabricate and have a wide range of more conventional applications in the world of telecommunications as satellite television receivers and such.

The team describes details in the *International Journal of Biomedical Engineering and Technology* and explains how the devices comprise a radiating patch with a rectangular slot, three stubs, a feed-line and a partial ground plane. The devices operate at a frequency of between 2.4 and 4.76 gigahertz (microwave, or UH, ultrahigh frequencies) and measure the resonance of the tumor, as opposed to healthy breast, tissue, which have different dielectric properties.

The team reports how [resonant frequency](#) in the antenna falls as the tumor grows and rises if it shrinks due to treatment. This offers a relatively simple, non-surgical, and less risky way for the oncologist to monitor a tumor of the [breast](#) that is also more comfortable for the patient than standard measurement techniques.

More information: Vanaja Selvaraj et al. Characterisation of breast tissue using compact microstrip antenna, *International Journal of Biomedical Engineering and Technology* (2019). [DOI: 10.1504/IJBET.2019.10022729](#)

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