**CHAPTER 2**

**Literature Review**

**2.1 A Low-Proﬁle Magneto-Electric Dipole Antenna**

Abstract:

A new low-proﬁle magneto-electric dipole antenna composed of a horizontal planar dipole and a vertically oriented folded shorted patch antenna is presented. The antenna is simply excited by a coaxial feed without the need of an additional balun. A rectangular cavity-shaped reﬂector is introduced for enhancing the stability in radiation pattern over the operating frequencies. A parametric study is performed for providing practical design guidelines. A prototype with a thickness of was designed, fabricated and measured. Results show that an impedance bandwidth of 54.8% for SWR 1.5 from 1.88 to 3.3 GHz was achieved. Stable radiation pattern with low cross polarization, low back radiation and an antenna gain of 8.6 0.8 dB was found over the operating frequencies. In addition, the antenna is d.c. grounded, which satisﬁes the requirement of many outdoor antennas.

Solution:

This shows the transactional view of the brain but this is used for its better performance in skull they play a vital role in bone segmentation more over they are very complex to determine and only experts can only understand the output. For very low frequency the wavelength is also low.

**2.1 Microwave System for Head Imaging :**

Absrtact:

A wideband microwave system for head imaging is presented. The system includes an array of 16 corrugated tapered slot antennas that are installed on an adjustable platform. A switching device is used to enable the antennas to sequentially send a wideband 1–4 GHz microwave signal and capture the backscattered signals. Those signals are recorded using suitably designed virtual instrument software architecture. To test the capability of the system to detect brain injuries, a low-cost mixture of materials that emulate the frequency-dispersive electrical properties of the major brain tissues across the frequency band 1–4 GHz are used to construct a realistic-shape head phantom. A target that emulates a realistic hemorrhage stroke is fabricated and inserted in two different locations inside the fabricated head phantom. A preprocessing algorithm that utilizes the symmetry of the two halves of human head is used to extract the target response from the background reﬂections. A post-processing confocal algorithm is used to get an image of the phantom and to accurately detect the presence and location of the stroke

Solution:

This project gives the detailed view about the brain but iit doesn’t scans the tumor cells , instead it scans the haemorrages, blood vessels, sweeling mainly blood clot. Thus this lacks the identification of Brain tumor. Uses very low radiation which is good for health.