**Unidirectional Wideband 3-D Antenna for Human Head-Imaging Application**

**ABSTRACT:**

Wearable antenna are used for body wearing electronic devices such as watches due to its body wearing idea of these type devices these devices should be made upon low radiating towards the body because of tissue affection on the body here a body wearable microwave antenna is made to analyse the radiation over the body using this sensing of the radiation detected tumour affection on a particular part of the body(head) is analysed and detected in the combination of the microwave analysis

**EXISTING SYSTEMS:**

Tumour analysis on the head using CT and MRI scanning systems.

**PROPOSED ANTENNA SYSTEM FOR SENSING APPLICATION:**

The proposed system would tend to identify the tumour on the head on the body based using microwave analysis and using the image processing techniques.

Antenna frequency band working:

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* ***2.7–2.9 GHz***

**DESIGN SIMULATOR:**

**Antenna design:** CST 2014

**APPLICATIONS:**

* Body area networks
* Patient monitoring in remote distance.

**WORKING METHODOLOGY:**

The properties of the boy are taken and its radiation effects have been analysed created. Antenna is designed in three dimensional styles. The tissue properties are considered and it is made as moulded in the head on the body and the radiation over the body is analysed with and without the considered tumour affected area various radiation on the head had been analysed and the affection is identified wether the brain is affected or not.

**DESIGN PROCESS:**

**Frequency band of antenna defining**

**Source selection**

**Antenna design**

**Final modelling and simulation**

**Human body making**

**Integration**

**SAR calculation**

**Tumour formation**

**DESIGN FLOW:**

**Targeted frequency band of working (2.7GHz-2.9GHz)**

**Design measurements calculation**

**Simulation in EM simulator (HFSS) mesh array design**

**Optimization to reach multi band**

**Simulation to meet multi band operation**

**Performance estimation graphical simulations**

**Examined Performance reached**



**Optimization of frequency/length**



**Optimization**



**Satisfied plot results**



**Response plots analysis**

**CONCLUSION:**

Hence the proposed method for detecting brain tumor using Specific Absorption Rate (SAR) of low frequency, unidirectional, high gain, Dielectric resonator antenna (DRA) with 3-D structure is reported to have a wide bandwidth spectrum.