Abstract

In this paper we have introduced Dy Sm Ferrite coated on RT DUROID5880 as substrate for an effective constituent to have a patch antenna. Here Dy Sm Ferrite was coated over RT DUROID 5880 with dielectric constant of 1.6 and loss tangent of 0.025. This combination forms a new substrate for implantable micro strip patch antenna design. The antenna is optimized for dual-band operation by combining an in-house finite-element boundary integral electromagnetic simulation code and particle swarm optimization algorithm. The simulation was performed using IE3D simulator for a frequency range of 2.45 GHz and 5.8 GHz dual ISM Band for medical monitoring applications. The Return loss Was in 2.45Ghz -11.99dB, and 5.8 GHz -20.37 dB, VSWR values are 1.7266, 2.45Ghz and 1.2415 for 5.8 GHz, the Directivity came to be 8.44dBi, these simulated results were encouraging.

**Index Terms**

Computer Science
Keywords
Ie3d Simulator  Rt Duroid  Nano Ferrite Materials  Micro Strip Patch Antenna  Implantable Antenna