Body Implanted UWB Antenna

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Abstract:

The current Medical Implant Communications Service (MICS) with frequency range of 402-405 MHz is not suitable to transfer huge data due to bandwidth and regulation limitation. There is a demand for tissue implanted device for wireless medical applications with wider bandwidth as medicine day by day and more and more is associated with electronics and electromagnetics. It is obvious that, the key element for any wireless implanted device is an antenna, and there are several issues to be considered while designing an in-body Ultra Wideband (UWB) antenna, such as: power consumption, size, impedance matching, and the unique Radio Frequency (RF) transmission challenges posed by the human body. This TD is presenting an implantable UWB antenna for the frequency band of 3.1-10.6 GHz for the purpose of use in the human head. A numerical simulation has been used to characterize the proposed implantable UWB antenna.