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| **Abstract:** |  |
| Biomedical application is an advancing sector of research work which permits the development of a transmission link from a living body to an extrinsic device. A microstrip patch antenna is proposed in this paper for biomedical applications. The antenna is designed to operate in the Industrial, Scientific and Medical (ISM) band (2.4 – 2.4835 GHz). The thickness of the antenna is only 2.3 mm which implies that the antenna is reliable to operate under bent conditions. The dimension of the proposed antenna is 28.5 mm x 28.5 mm x 2.3 mm. In this antenna, Copper is used as the patch material and FR-4 is used as the substrate material. Three-layer human tissue model is used to analysis the performance of the antenna. Computer Simulation Technology (CST) software is used to designed the antenna and analysis the performance parameter of the antenna such as the return loss (S11 parameter), radiation pattern, operating frequency, directivity, gain, total efficiency under normal and bent conditions on the human tissue model. Performance analysis is also observed for different substrate material, different patch material, and different types of human tissues and comparison analysis of S11 parameter for the planar and bent condition. Among all of the substrate materials, FR4 provides the good antenna performance. Finally, Specific Absorption Rate (SAR) and thermal loss are evaluated to comply with the antenna safety issues. | |