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| **Abstract:** |  |
| This research work assumes the role of designing a Micro-strip patch antenna that exists within the band range of 402 MHz to 405 MHz, which was considered as medical implantable communication systems (MICS) band and can be possibly implanted at human body phantom model because of its flexibility and lower radiation characteristics. CST microwave studio was used for designing the patch antenna and the human body phantom model with the existence of homogeneous layers (fat, skin and muscle) and the final version was fabricated. Being highly flexible, FR4 was chosen as a substrate to maintain 0.5 mm thickness throughout. For the ground and patch, copper material was selected having thickness of 0.018 mm. For the ease of fabrication and biocompatibility, silicon was selected with the thickness of being 8 mm. Maximum specific absorption rate of the proposed antenna was obtained 0.588 W/Kg for 10 g tissue. Various Parameters such as VSWR, S11, Radiation efficiency, Total efficiency were found 1.1889, -21.28 dB, -45.71 dB, -45.74 dB respectively inside body phantom that ensure the antenna design was efficiently and effectively suitable for biotelemetry system which is body implantable. After fabrication the value of S11 is found -12.43 dB in open space with 453 MHz frequency. | |