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| **Abstract:** |  |
| This paper presents a design of Micro-strip patch antenna which operate at medical implantable communication systems (MICS) band (402 MHz to 405 MHz) after implanting in body phantom model with low radiation in a flexible compact size. For designing the antenna and the human phantom model, CST Microwave studio is used. The human body phantom model contains three homogeneous layers as skin, fat and muscle. FR4 is used as the substrate with thickness of 0.5 mm of antenna for its flexibility property. The thickness of ground and patch is 0.018 mm where copper is chosen for ground. Due to biocompatibility, the antenna is fabricated into silicon with thickness of 8 mm before implanting inside the human body phantom model. The maximum specific absorption rate of this design with copper patch is measured 0.588 W/Kg in 10g tissue of human phantom model. S11, VSWR, Radiation efficiency, Total efficiency are also calculated which is −21.28 dB, 1.1889, −45.71 dB, −45.74 dB to assure that the design is comfortable as well as efficient for body implantable in biotelemetry system. | |