World Academy of Science, Engineering and Technology
International Journal of Electronics and Communication Engineering
Vol:17, No:02, 2023

Design of Circular Patch Antenna in Terahertz Band for Medical Applications

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Abstract : The wireless body network (WBAN) is the most interesting network these days and especially with the appearance of contagious illnesses such as covid 19, which require surveillance in the house. In this article, we have designed a circular microstrip antenna. Gold is the material used respectively for the patch and the ground plane and Gallium (εr=12.94) is chosen as the dielectric substrate. The dimensions of the antenna are 82.10*62.84 µm2 operating at a frequency of 3.85 THz. The proposed, designed antenna has a return loss of -46.046 dB and a gain of 3.74 dBi, and it can measure various physiological parameters and sensors that help in the overall monitoring of an individual's health condition.

Keywords : circular patch antenna, Terahertz transmission, WBAN applications, real-time monitoring
Conference Title : ICTNST 2023 : International Conference on Telecommunications, Network Systems and Technologies
Conference Location : Istanbul, Türkiye
Conference Dates : February 16-17, 2023