

## On the Design of Wearable Fractal Antenna

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**Abstract :** This paper is aimed at proposing a rhombus shaped wearable fractal antenna for wireless communication systems. The geometrical descriptors of the antenna have been obtained using bacterial foraging optimization (BFO) for wide band operation. The method of moment based IE3D software has been used to simulate the antenna and observed that miniaturization of 13.08% has been achieved without degrading the resonating properties of the proposed antenna. An analysis with different substrates has also been done in order to evaluate the effectiveness of electrical permittivity on the presented structure. The proposed antenna has low profile, light weight and has successfully demonstrated wideband and multiband characteristics for wearable electronic applications.

**Keywords :** BFO, bandwidth, electrical permittivity, fractals, wearable antenna

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