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Specially Designed Graphene Structure Based Nano Microstrip Patch Antenna

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Abstract

This paper presents a design of graphene structure based Nano microstrip patch antenna and experimentally studied on IE3D, an electromagnetic simulation package by Zeland Software Inc.. This design technology is achieved by cutting the Graphene structure in square patch microstrip antenna and placing a single coaxial feed graphene structure based Nano microstrip patch antenna is designed on a FR4 substrate of thickness 1.524 mm and relative permittivity of 4.4 and mounted above the ground plane at a height of 6 mm. High Bandwidth is achieved with stable pattern characteristics, such as gain and cross polarization, within its bandwidth. Impedance bandwidth, antenna gain and return loss are observed for the proposed antenna. Details of the measured and simulated results are presented and discussed.

Keyword: Graphene, Nano structure, Microstrip antenna, Radiation pattern, Returns loss