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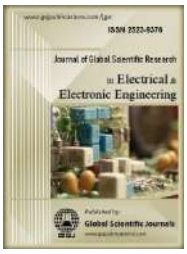

Design Helix Antenna by using HFSS

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ABSTRACT

the aim of this paper is to providing actually a current of implicit wireless displacement sensor. The sensor consist of outside helix antenna and an inside aluminum oxide strip (AOS) material. Agreement with the perturbation theory, which there is an imprecise linear relation ship between the transfer of AOS material in the hollow of the helix antenna & resonant frequency of the last. Owing to the configuration of the sensor. In this paper, at first designed the configuration by using MATLAB software program just only the helix antenna, then adding the AOS material strip to the helix antenna. Second step is to study the numerical analysis and mythology measurable factor forming, the both last are conveyed through high frequency structure simulator (HFSS) of the helix antenna without the material AOS, at last step we adding the AOS to the helix antenna. Then design areal helix antenna by using copper material. The evaluation result achieved that the sensor of the determined range has good linearity and sensitivity.

1. Introduction

There are many moving sensors have been extensively employed in structural monitoring (SM), precision optical measurement (POM) and industrial control(IC)[1] and many other application ...etc... , and have been an important studied by private scholar and imported scholar[2].

In this time, the extensively used moving sensor in the field of structural distortion guardian, however, the widely used moving sensor, for example the pulling line of moving sensor adding the pulling bar moving sensor[3]. These standard method have common of advantages at first its resolution high, and good stability ,at last low calculation loss, and evaluation accuracy that gratify the evaluation requirements of the structural monitoring industry[4]. In order to over come the short coming of usual moving sensor in design monitoring, many new moving sensors have been structured and studied from non-junction measurement. Where, the photogrammetry and the laser displacement sensors are the most moving sensors which representative at ones [5].

By side the rate of new sensor is often have high-priced, adding number of trouble in acceleration and stability, or in empirical use[6]. Where, in the next side the last do not implement the inactive Wireless communication evaluation, exactly normal sensor.

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