Performance Simulation Of Pyramidal And Wedge Microwave Absorbers

Abstract

Anechoic chambers signal absorption capability is directly correlated to its performance. One of the main components in enabling signal absorption is the design and material used in designing the absorbers. Two of the main types are pyramidal and wedge-shaped ones. In this work, truncated pyramidal and truncated wedge absorbers for anechoic chamber application have been designed to operate effectively in the microwave frequencies from 1 - 10 GHz. The absorbers were simulated using a fusion of carbon-based material with different features and coating thickness to improve their performance and significant material cost savings. Material consideration for the basic pyramidal and wedge structure has also been taken into account. The designs are simulated using CST Microwave Studio. Simulated results showed that the coating of half the absorber height produced the best performance in terms of signal absorption.