

Study of Microwave Heating in a Non-Rectangular Cavity

Cristian GABOR

Abstract

This paper sets to explore the basic principle of microwave dielectric heating. It wants to show what would happen if we use a different type of resonant cavity, rather than the traditional rectangular in use by microwave ovens today. For this, a pyramidal resonant cavity was selected. All the drawings and the simulations were made using Ansoft HFSS version 11.0. The goal of these simulations is to obtain multiple resonant frequencies while still having high gain. This could be particularly useful if, for instance, one wants to heat different substances rather than just water-based substances, which can be heated using microwave ovens found on the market.