عنوان مقاله:

Ferrite Material Characterization Using S-Parameters Data

محل انتشار:

مجله نوآوری های مهندسی برق و کامپیوتر, دوره 5, شماره 1 (سال: 1396)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

Since many applications rely on the knowledge of the electromagnetic material properties of ferrites, such as ferrite phase shifters, this paper presents an algorithm for characterizing ferrite materials in a single frequency using a rectangular waveguide system. In this method, the extraction of ferrite parameters is implemented through minimizing the difference between the measured data and the results from modal analysis of the system. The main advantage of this method compared to the other ones is that the proposed method only needs the amplitude of the reflection and transmission coefficients to estimate the parameters of ferrite materials. This makes the implementation easy and eliminates the problems associated with phase calibrations and measurements. This validation is achieved by simulation and experimental tests. The proposed algorithm is validated by characterizing YIG and SL-470 ferrites.

کلمات کلیدی:

,,Material characterization,Ferrite,Reflection and transmission,S-parameters