Abstracts

Ferrites with Planar Anisotropy at Microwave Frequencies

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Materials with an easy plane of magnetization (planar anisotropy) have recently been discovered. The large anisotropy field that tends to keep the magnetization in the easy plane reduces the field required to cause ferromagnetic resonance, which makes the material promising for microwave applications. Equations are derived for the susceptibility, taking into account losses and a finite medium. Propagation in a longitudinal and transverse static field is considered. The location of a slab in a rectangular waveguide for minimum loss in the forward direction, and the use of the material as a phase shifter, are discussed. Experimental microwave data on some materials are given, and also data on an isolator and phase shifter incorporating these materials.

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