Abstracts

The Status of Microwave Applications of Ferrites and Semiconductors

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The recent developments in the field of ferrite devices are reviewed. Emphasis is placed on the extension of nonreciprocal devices to lower microwave frequencies. and high powers. The design considerations and achievements of broad banding also are covered. Fundamental principles leading to the applications of non-linear properties of ferrites are described briefly. Preliminary experimental accomplishments in the construction of frequency doublers, mixers, and ferromagnetic resonance amplifiers are summarized. The possible role of the new ferromagnetic garnet material is indicated. Although no significant new semiconductor devices have been developed at microwave frequencies, possibilities are considered for doing this with use of cyclotron resonance and spin resonance phenomena and their related properties in semiconductors.

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