Abstracts

Millimeter Wave Ferromagnetic Resonance in Cubic and Hexagonal Ferrites

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Natural ferromagnetic resonance (in the absence of an externally applied DC magnetic field) has been observed for the first time at frequencies as high as 240 GHz in a powdered magnetoplumbite suspended in a thin layer of paint. "Induced" ferromagnetic resonance has been observed at many millimeter wave frequencies in the presence of an externally applied magnetic field according to the rule: f = gamma H. The specimen was placed at the center of a "Bitter" solenoid high intensity magnet in a dispersive Fourier transform spectrometric configuration to provide reliable broadband continuous data, for the first time, for magnetic permeability and dielectric permittivity in the entire millimeter wave frequency range.

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