Abstracts

Using a 16 GHz Interferential Reflecto-Ellipso-Polarimeter to Study Magnetic Composite Media

R. Sardos, J.-F. Escarmant, Y. Ramdani, A. Balana and W.J. Ellison. "Using a 16 GHz Interferential Reflecto-Ellipso-Polarimeter to Study Magnetic Composite Media." 1990 Transactions on Microwave Theory and Techniques 38.3 (Mar. 1990 [T-MTT]): 313-318.

A 16 GHz interferential reflecto-ellipso-polarimeter is described. This apparatus is a combination of a lossy turnstile junction and a three-wave interferometer. One can use it to measure very small variations in the rotation and ellipticity of reflected waves. The device has been used to study waves reflected from a magnetic composite material, formed by compression of PVC and ferrite particles, and under the influence of a magnetic field perpendicular to the direction of wave propagation. For ferrite concentrations exceeding 30 percent, several resonances were observed they seem to be related to the average distance between the magnetic particles. This "contact" between the magnetic particles could be called magnetic percolation by analogy with electric percolation.

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