Abstracts

Waveguide Perturbation Techniques in Microwave Semiconductor Diagnostics (Jan. 1963 [T-MTT])

K.S. Champlin and D.B. Armstrong. "Waveguide Perturbation Techniques in Microwave Semiconductor Diagnostics (Jan. 1963 [T-MTT])." 1963 Transactions on Microwave Theory and Techniques 11.1 (Jan. 1963 [T-MTT]): 73-77.

Scattering processes in semiconductors are often studied by observing scattering averages with measurements of various dc transport phenomena. With microwaves, the observation frequency can be of the order of the scattering frequency so that the corresponding microwave transport property may be complex. Thus, in studying detailed scattering mechanisms, a microwave transport experiment contains potentially more information than the analogous dc experiment. This paper discusses perturbation techniques which are useful in determining the microwave conductivity and low-field Hall effect of a bulk semiconductor contained in a waveguide from measurement of the properties of the transmitted wave.

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