Abstracts

Application of Microwave Techniques in the Analysis of Quantum Waveguide Structures and Devices

A. Weisshaar, J. Lary, S.M. Goodnick and V.K. Tripathi. "Application of Microwave Techniques in the Analysis of Quantum Waveguide Structures and Devices." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 481-484.

An extension of the generalized scattering matrix (GSM) technique is formulated to compute the GSM of nonuniform quantum waveguide structures with two-dimensional quantum confinement of electronic states. Low temperature I-V characteristics for a double constriction are presented, exhibiting a region of negative differential resistance (NDR). A simple design procedure for increasing the temperature range with achievable NDR is introduced.

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