Abstracts

Bragg Reflection Characteristics of Millimeter Waves in a Periodically Plasma-Induced Semiconductor Waveguide

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Theoretical analysis on the Bragg reflection characteristics of millimeter waves in a periodically plasma-induced semiconductor waveguide is presented. The plasma is assumed to be generated by light illumination. Numerical examples are given which show the dependence of the Bragg reflection characteristics on the length of the plasma-induced section and on the plasma density. Since the period can be changed by altering the illumination pattern, this type of periodic structure may be developed to tunable filters or tunable DBR oscillators for millimeter-wave region.

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