Abstracts

Transmission and Attenuation of Vector Modes in Uniformly Bent Circular Hollow Waveguides for the Infrared

Electric field distributions and attenuation constants of the eigenmodes in uniformly bent circular hollow waveguides have been evaluated based on a vector wave equation deduced from Maxwell's equations. A diagram representation of the parameter describing mode properties has been newly introduced. It is numerically shown that vector modes gradually approach linearly polarized modes when the bending radius becomes small. A relation between attenuation constants in sharply bent circular and slab hollow waveguides is also discussed where the electric fields concentrate near the outer edge of the core.

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