Abstracts

Asymptotic Analysis of Mode Transition in General Class of Circular Hollow Waveguides at the Infrared Frequency (Short Papers)

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Correspondence between hybrid modes in small and large core circular hollow waveguides is discussed by using an asymptotic theory for the infrared. This mode changes or mode transitions in several hollow waveguides are discussed which depend on the cladding material and the mode order. For the dielectric-coated metallic waveguides, mode changes also depend on the thickness of the coated dielectric. For the singly cladded hollow waveguides, the region is shown in the plane of complex refractive index (n - jk) of cladding material where the HE/sub 11/ mode in large core waveguides approaches the TE or TM mode.

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