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Title: Single Mode Condition and Power Fraction of Air-Cladding Total Refractive Guided Porous Polymer Terahertz Fibers

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Abstract: We investigate the single-mode condition and power fraction of an air cladding total internal reflection (TIR) guided porous polymer THz fiber. It is shown that the single mode condition and a high fraction of power in air holes cannot be simultaneously met in porous fibers. Employing the V parameter and the Lorentz-Lorenz formula, we analyze this problem theoretically.