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Title:Terahertz polarization-sensitive rectangular pipe waveguides

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Abstract:We propose square and rectangular pipe waveguides for low-loss THz waveguiding and polarization control. Different from common circular-symmetric THz fibers and waveguides, the proposed rectangular pipe waveguides successfully remove the transmission degeneracy of two orthogonal polarizations and possess polarization sensitivity to the guided THz waves. By measuring the attenuation spectra, we find that the polarization sensitivity depends on the structure of the pipe waveguides. With butt coupling method, it is easy to combine circular pipe waveguides and the rectangular ones.

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