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标题: Highly birefringent terahertz hollow fiber: design, fabrication, and experimental characterization
作者: Tang, XL (Tang, Xiao-Li); Sun, BS (Sun, Bang-Shan); Shi, YW (Shi, Yi-Wei)
编者: Gannot I
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摘要: Transmission characteristics at terahertz (THz) frequencies are numerically analyzed for elliptical dielectric-coated metallic hollow fibers. Effective refractive indices of the two polarizations of the HE11 mode, the modal power fraction in the air core and the birefringence of the fiber are presented. The impact of the metallic layer on the field confinement is investigated by comparing the modal profiles of the dielectric-coated metallic hollow fiber (DMHF) to that of the polymer tube (PT). Effects of dielectric absorption on the transmission properties are demonstrated. Total transmission loss of about 2 dB/m and birefringence in the order of 10(-2) are predicted. Owing to the high reflectivity of the inner coatings, more than 99% of the fundamental mode power is confined in the air core.
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地址: [Tang, Xiao-Li; Sun, Bang-Shan; Shi, Yi-Wei] Fudan Univ, Sch Informat Sci & Engn, Shanghai 200433, Peoples R China
通讯作者地址: Shi, YW (通讯作者),Fudan Univ, Sch Informat Sci & Engn, Shanghai 200433, Peoples R China
电子邮件地址: ywshi@fudan.edu.cn
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