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标题: Twisted vector field from an inhomogeneous and anisotropic metamaterial
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摘要: We propose a metamaterial design for realizing inhomogeneous and anisotropic effective media based on the localized waveguide resonance mechanism. Such a design can be easily achieved in experiment and enables us to simultaneously manipulate the wavefront and the state of polarization of the transmitted electromagnetic field by the polarization-sensitive extraordinary optical transmission. Numerical simulations, including the generation of the hybridized vector fields (especially twisted vector fields that are azimuthally polarized carrying a helical phase), prove the feasibility of our proposal. It could be expected as a good candidate of the specially designed subwavelength element for creating the exotic vector fields beyond the functionality of the existing vector fields in a wide spectral regime, especially the terahertz and radio regimes. (C) 2012 Optical Society of America
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