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Anisotropic Metasurface with Near-Unity Circular Polarization Conversion[1] XIAOXIAO WU, Hong Kong Univ of Sci Tech — We demonstrate a bi-layer ultrathin anisotropic metasurface which could near-completely convert the circular-polarized electromagnetic (EM) wave to its cross polarization. The bi-layer metasurface is composed of periodic 180-twisted double-cut split ring resonators on both sides of an F4B substrate. At resonance, cross-polarized transmission larger than 94% is observed both in simulations and experiments. The resonant frequency of the metasurface could be effectively tuned by adjusting the geometric parameters of the metasurface, while relatively high conversion efficiency is preserved. The high efficiency and ease of fabrication suggest the ultrathin metasurface could have potential applications in telecommunications.

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