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标题: Proposal and analysis of artificial dielectric lens with metallic corrugated structures for terahertz wave band
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摘要: Optical devices for the terahertz wave band are being developed now and require better designs. This paper proposes an artificial dielectric lens with metallic corrugated structures for the terahertz wave band. A periodic analysis model extracted from the full model by assuming periodicity confirms the phase delay, which produces the focusing effect. Full model analysis also confirms the focusing effect. The full model analysis also confirms that the focusing length is longer as the spacing of corrugated baffles is wider. The focusing length is longer the metallic groove width is wider. The focusing length is longer as the groove depth is shallower. The lens shape without grooves does not produce the focusing effect. The results of the full model analysis are qualitatively consistent with those of the periodic model ones. This implies that the design for an exact size lens is possible by using the periodic model.
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