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摘要: A number of microwave and terahertz grooved-dielectric Fresnel zone plate (FZP) and ordinary lenses and antennas are studed and compared numerically. Although the microwave (38 GHz) eight-step FZP lens is certainly inferior, the corresponding terahertz (1.5 THz) FZP lens is comparable in focusing action to the ordinary one. By use of a new design approach to the terahertz FZP lens/antenna the typical unwanted focusing shift from the design frequency is removed and even better focusing performance is obtained within a limited frequency band. Thus, at terahertz frequencies the dielectric FZP lens or antenna is a lightweight and an effective option to the ordinary lens or antenna. (C) 2012 Wiley Periodicals, Inc. Microwave Opt Technol Lett 54:13431348, 2012; View this article online at wileyonlinelibrary.com. DOI 10.1002/mop.26812
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