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标题: Evanescently Fed Electromagnetic Band-Gap Horn Antennas and Arrays
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摘要: The design of a horn antenna based on electromagnetic band-gap structures (EBGs) and fed by evanescent fields in the containing periodic structure is presented. Such all-dielectric antennas can form compact arrays and provide a promising solution for millimeter, submillimeter, and terahertz (THz) devices. An evanescently fed EBG horn antenna design based on a woodpile structure and operating at frequencies around 110 GHz is presented, together with experimental and simulation results for an analogous scaled-up prototype antenna operating in the Ku-band. It exhibits a 9% bandwidth and an average level of maximum gain approximately equal to 14.6 dBi.
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