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标题: Terahertz band gaps induced by metal grooves inside parallel-plate waveguides
作者: Lee, ES (Lee, Eui Su); So, JK (So, Jin-Kyu); Park, GS (Park, Gun-Sik); Kim, D (Kim, DaiSik); Kee, CS (Kee, Chul-Sik); Jeon, TI (Jeon, Tae-In)
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摘要: We report experimental and finite-difference time-domain simulation studies on terahertz (THz) characteristics of band gaps by using metal grooves which are located inside the flare parallel-plate waveguide. The vertically localized standing-wave cavity mode (SWCM) between the upper waveguide surface and groove bottom, and the horizontally localized SWCM between two groove side walls (groove cavity) are observed. The E field intensity of the horizontally localized SWCM in grooves is very strongly enchanced which is three order higher than that of the input THz. The 4 band gaps except the Bragg band gap are caused by the pi radian delay (out of phase) between the reflected THz field by grooves and the propagated THz field through the air gap. The measurement and simulation results agree well. (C) 2012 Optical Society of America
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地址: [Lee, Eui Su; Jeon, Tae-In] Korea Maritime Univ, Div Elect & Elect Engn, Pusan 606791, South Korea
[So, Jin-Kyu; Park, Gun-Sik; Kim, DaiSik] Seoul Natl Univ, Dept Phys & Astron, Seoul 151747, South Korea
[Kee, Chul-Sik] GIST, Adv Photon Res Inst, Nanophoton Lab, Kwangju 500712, South Korea
[Kim, DaiSik; Kee, Chul-Sik; Jeon, Tae-In] Ctr Subwavelength Opt, Seoul, South Korea
通讯作者地址: Lee, ES (通讯作者),Korea Maritime Univ, Div Elect & Elect Engn, Pusan 606791, South Korea
电子邮件地址: jeon@hhu.ac.kr
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