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标题: Design and characterization of a terahertz microcavity structure
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摘要: The complex refractive indices of the Cr film are obtained by terahertz time-domain spectroscopy. The penetration depth the Cr film is calculated based on the complex refractive indices, and then the effective cavity length and the emitted spectrum of the structure Cr/GaAs/Cr are simulated. The resonant frequencies are located at 0.32, 0.65, 0.98, 1.31 and 1.65 THz, respectively. The peak intensity of the cavity photo-conductive resource at 0.32 THz is 25 times higher than that of non-cavity one and the full width at half maximum is greatly narrowed. The relation between the emitting dipoles and the standing wave field in the cavity is also discussed. The results show that the emission intensity is enhanced when the emitting dipoles are located at the nodes of the standing wave field, but greatly suppressed at antinodes.
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