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标题: Simple and cost-effective thickness measurement terahertz system based on a compact 1.55 mu m lambda/4 phase-shifted dual-mode laser
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摘要: A simple thickness measurement method based on the coherent homodyne CW THz system was demonstrated; it does not require precise control of the frequencies of the beat source, and only accurate scanning of the optical delay line is needed. Three beat frequencies are sufficient for measuring the thickness of a sample without considering the modulo 2 pi ambiguity. A novel compact 1.55 mu m lambda/4 phase-shifted dual-mode laser (DML) was developed as an optical beat source for the CW THz system. The thickness of a sample was accurately estimated from the measurements using the proposed method. Our results clearly show the possibility of a compact, simple, and cost-effective CW THz system for practical applications. (C) 2012 Optical Society of America
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