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标题: High-speed terahertz reflection three-dimensional imaging for nondestructive evaluation
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摘要: We demonstrate high-speed terahertz (THz) reflection three-dimensional (3D) imaging based on electronically controlled optical sampling (ECOPS). ECOPS enables scanning of an axial range of 9 mm in free space at 1 kHz. It takes 80 s to scan a transverse range of 100 mm x 100 mm along a zigzag trajectory that consists of 200 lines using translation stages. To show applicability of the imaging system to nondestructive evaluation, a THz reflection 3D image of an artificially made sample is obtained, which is made of glass fiber reinforced polymer composite material and has defects such as delamination and inclusion, and is compared with an ultrasonic reflection 3D image of the sample. (C) 2012 Optical Society of America
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