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摘要: This work aims at developing a new excitation method for thermal wave nondestructive test(NDT)-Terahertz excitation. In the paper we introduce a theoretical model of heat conduction for periodical THz excitation. BWO (backward wave oscillator) terahertz source is employed to heat a carbon fiber plate with wave absorbing coating, surface temperature variations and distributions are captured by an infrared camera, and Canny edge algorithm is used to process thermal images to show the defects. Result of flash pulse thermography serves as comparison, and the advantages of THz thermal wave NDT are discussed. The combination of THz technology and infrared thermal wave NDT is realized.
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