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Abstract:A 3D continuous-wave (CW) terahertz computed tomography (CT) system employing a gas laser operating at 2.52 THz is presented. To shorten acquisition time on the premise of guaranteeing the image quality, the modified simultaneous algebraic reconstruction technique (MSART) coupled with image processing operations like the Gaussian low-pass filter (GLPF), open operation and close operation has been adopted in the paper. With the 2D results the 3D images of the samples have been also obtained. The reconstruction results illustrate the promising application prospects of this CW THz CT system. © Springer Science+Business Media, LLC 2012.
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