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标题: Large-area microstructured photomixer as scannable detector of continuous-wave terahertz radiation
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摘要: Detection of continuous-wave (CW) terahertz (THz) radiation is demonstrated using a large-area microstructured photomixer. The photomixer, which has interdigitated electrodes, is utilized in an incoherent detection scheme without any focusing optics for the incoming THz radiation. The large-area microstructured photomixer is driven at a high laser power of 900 mW, which results in an increased responsivity of 120 mA/W, in comparison with conventional small-area photomixer detectors. By mapping out the receiving pattern of the photomixer detector, we show that the large-area photomixer is capable of scanning the incident THz beam by changing the incidence angles of the CW laser beams used in the photomixing detection process. We demonstrate a scan range of +/- 50 degrees. Moreover, the optimum spot size of the laser beams illuminating the photomixer detector for maximizing the responsivity of the detector is specified.

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