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Title:A structure for enhanced terahertz emission from a photoexcited semiconductor surface
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Abstract:A structure that can provide enhancement of terahertz emission from a semiconductor surface excited with femtosecond laser pulses is proposed. The structure consists of a semiconductor layer on a Si substrate with metal coating on the upper surface of the layer and a Si lens attached to the bottom of the substrate. The semiconductor is excited through a hole in the coating and emits terahertz radiation through the substrate lens. We demonstrate theoretically that the proposed structure can increase the terahertz yield by orders of magnitude as compared to the previously used schemes of terahertz emission from a semiconductor surface.
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