293. Title:Single-cycle terahertz pulses with amplitudes exceeding 1 MV/cm generated by optical rectification in LiNbO3

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Abstract:Using the tilted-pump-pulse-front scheme, we generate single-cycle terahertz (THz) pulses by optical rectification of femtosecond laser pulses in LiNbO3. In our THz generation setup, the condition that the image of the grating coincides with the tilted-optical-pulse front is fulfilled to obtain optimal THz beam characteristics and pump-to-THz conversion efficiency. By using an uncooled microbolometer-array THz camera, it is found that the THz beam leaving the output face of the LN crystal can be regarded as a collimated rather than point source. The designed focusing geometry enables tight focus of the collimated THz beam with a spot size close to the diffraction limit, and the maximum THz electric field of 1.2 MV/cm is obtained.