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Title:High-power picosecond terahertz-wave generation in photonic crystal fiber via four-wave mixing
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Abstract:We demonstrate picosecond terahertz (THz)-wave generation via four-wave mixing in an octagonal photonic crystal fiber (O-PCF). Perfect phase-matching is obtained at the pump wavelength of 1:55 μm and a generation scheme is proposed. Using this method, THz waves can be generated in the frequency range of 7:07-7:74 THz. Moreover, peak power of 2:55W, average power of 1:53mW, and peak conversion efficiency of more than .66:65 dB at 7:42THz in a 6:25cm long fiber are realized with a pump peak power of 2kW.
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