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Title:Generation of ultrafast mid-infrared laser by DFG between two actively synchronized picosecond lasers in a MgO:PPLN crystal
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Abstract:We report the difference-frequency generation (DFG) of ultrafast mid-infrared laser radiation around 3 μm between two picosecond laser pulses with the center wavelengths of 800 nm and 1064 nm in a MgO:PPLN crystal at room temperature. The two laser pulses were generated from the actively synchronized picoseconds Ti:sapphire and Nd:YVO<inf>4</inf> oscillators. We measured the DFG wavelengths tunable from 3.19-3.29 μm and the output power is potential to be several mW. This experiment proves a possible roadmap for ultrafast mid- and far-infrared laser radiation generation and even for the THz radiation. © Springer-Verlag 2012.
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