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Title:DAST/SiO₂/SiO₂ multilayer structure for efficient generation of 6 THz quasi-single-cycle electromagnetic pulses

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Abstract:We propose a DAST/ SiO₂/SiO₂ multilayer structure for efficient generation of near-single-cycle THz transients with average frequency around 6 THz via collinear optical rectification of 800 nm femtosecond laser pulses. The use of such a composite material allows compensation for the phase mismatch that accompanies THz generation in bulk DAST crystals. The presented calculations indicate a strong increase in the THz generation efficiency in the DAST/ SiO₂/SiO₂ structure in comparison to the case of bulk DAST crystal. © 2012 Optical Society of America.

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