

570.

Author

Li M. Pan HF. Tong YQ. Chen C. Shi Y. Wu J. Zeng HP.

Title

All-optical ultrafast polarization switching of terahertz radiation by impulsive molecular alignment

Source

OPTICS LETTERS vol.36 no.18 3633-3635 SEP 15 2011

Abstract

We experimentally demonstrate ultrafast polarization switching of terahertz (THz) radiation generated by dual-color driving pulses composed of orthogonally polarized fundamental and second-harmonic waves, which can be controlled by field-free molecular alignment in air by modulating the relative phase between the two field components as a transient dynamic wave plate. By fine-tuning the time delay to properly match the molecular alignment revivals, a significant polarization modulation of the THz radiation is observed and both linearly and elliptically polarized THz radiations can be obtained.