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Authors:Wang, Changlei (1); Gu, Jianqiang (1); Xing, Qirong (1); Liu, Feng (1); Li, Yanfeng (1); Chai, Lu (1); Wang, Qingyue (1)
Author affiliation:(1) Ultrafast Laser Laboratory, College of Precision Instrument and Optoelectronics Engineering, Tianjin University, Tianjin 300072, China; (2) Key Laboratory of Opto-Electronics Information Technology (Tianjin University), Ministry of Education, Tianjin 300072, China
Corresponding author:Li, Y.(yanfengli@tju.edu.cn)
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Abstract: We investigate the optical response of silicon-based VxOy film for terahertz (THz) transmission. We find that absorption of the THz wave by the film can be controlled by laser excitation. Using THz time-domain spectroscopy (THz-TDS), we observe that the amplitude of the THz pulse is modulated by the external optical beam. The linearity of the optical modulation is also analyzed. Weak modulation nonlinearity is found to be within tolerable range. Number of references:21