

Raman effect of fiber optic gratings

We research here on the mitigation of the stimulated Raman scattering in high-power fiber laser systems by chirped and tilted fiber Bragg gratings (CTFBGs) for longer laser delivery distance.

However, as the output power increase, stimulated Raman scattering (SRS) becomes the main factor limiting the performance improvement of fiber oscillators. In this paper, a chirped and ...

Chirped and tilted fiber Bragg gratings (CTFBGs) are important all-fiber filtering components in high-power fiber lasers for stimulated Raman scattering (SRS) suppression.

A direct laser diode pumped high-power fiber amplifier system was used to test the Raman suppression effect of the fabricated LPFG, and it is placed between the seed and the amplifier stage.

Chirped and tilted fiber Bragg gratings (CTFBGs) have attracted a lot of attention in stimulated Raman scattering (SRS) suppression of high-power fiber lasers. However, the laser power ...

In Section 4, Raman lasers in fiber are introduced, which can be classified into two general categories. In the former, the wavelength is shifted by one Raman-Stokes shift, while, in the latter, called ...

Confronting the challenge, we firstly present an SRS mitigation method based on a dual-structure fiber grating in this paper. The dual-structure fiber grating comprises a CTFBG and a fiber Bragg grating ...

By implementing the fs-CTFBG into the output end of a high-power fiber laser for Raman filtering, a power handling capability of 4 kW is achieved with a Raman filtering ratio of ~13 dB.

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In this study, we experimentally validate a simple cascaded inscription method for achieving wideband LPFGs. A fiber laser oscillator with a low SRS threshold and several ...

Using the special characteristics of femtosecond laser pulse written transmission fiber gratings, it is possible to realize a notch filter that mitigates efficiently this negative effect by coupling the Raman ...

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