

Abstract Submitted
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Optical Properties of Photo-thermo-refractive Glass for Volume Bragg Gratings ZAYNE PARSONS, University of Dayton, Department of Physics, Dayton Ohio, 45469; Air Force Research Laboratory, AFRL/RXAP, Wright-Patterson AFB, Ohio 45433-7707, USA, SAID ELHAMRI, University of Dayton, Department of Physics, Dayton Ohio, 45469; Air Force Research Laboratory, AFRL/RXAN, Wright-Patterson AFB, Ohio 45433-7707, USA, DAVID ZELMON, Air Force Research Laboratory, AFRL/RXAP, 3005 Hobson Way, Wright-Patterson AFB, Ohio 45433-7707, USA, VADIM SMIRNOV, OptiGrate, 562 S. Econ Circle, Oviedo, FL 32765, DAN PERLOV, IPG Photonics, 50 Old Webster Rd., Oxford, MA 01540 — Photo-thermo-refractive (PTR) glass is used to fabricate volume Bragg gratings. The gratings are formed by exposing PTR glass to UV light interference patterns and then annealing the glass. This produces a grating by locally modulating the refractive index. The diffraction efficiency of these gratings is dependent on the refractive index modulation amplitude. We report the refractive indices of unprocessed and processed PTR glass at wavelengths from 0.4 to 4.6 microns and discuss their uses in specifying VBGs for laser beam combining.

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