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Nonlinear Optical Characterizations of Phosphonite-substituted Bithiophenes YUANLI ZHANG, JIANWEI WANG, CHRISTOPHER LAWSON, Department of Physics, University of Alabama at Birmingham, Birmingham, AL 35294, JASON FREEMAN, GARY GRAY, Department of Chemistry, University of Alabama at Birmingham, Birmingham, AL 35294 — An optical power limiter (OPL) is a device used to protect human eyes and optical sensors from damage from high intensity light sources. Researchers have studied OPL's in the various spectral regions, but there are little or no published reports of OPL in the blue spectral region. Phosphonite-substituted bithiophenes, which show little linear absorption at blue spectral region, have potential applications as OPL's due to their strong nonlinear optical (NLO) absorption in the blue spectral region. We study of a number of new phosphonite-substituted bithiophenes complexes for blue OPL applications. The NLO properties are characterized by direct transmission and Z-scan measurements.

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