

Abstract Submitted
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Faraday Rotation Spectrum of Bismuth-Doped Rare-Earth Iron Garnets for Magneto-Optic Sensor Applications MANNIX SHINN, Temple University, DONG HO WU, ANTHONY GARZARELLA, U. S. Naval Research Laboratory, RONGJIA TAO, Temple University — Iron garnet Faraday rotators are a promising sensor material for measuring magnetic fields. The rotator's field sensitivity increases inversely with wavelength and beam path, but so does the insertion loss. We wish to optimize sensor sensitivity by studying the transmission coefficient and Verdet constant over a spectrum from 0.4 to 2 μm in samples of bismuth-doped rare-earth iron garnet. Data for two different gallium doped samples will be presented, including data of other magnetic field dependent effects that were observed.

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