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Manipulating singlet-triplet equilibrium in organic biradical materials O. GUNAYDIN-SEN, J. FOSSO-TANDE, P. CHEN, J.L. WHITE, J.L. MUSFELDT, University of Tennessee, R.J. HARRISON, University of Tennessee and Oak Ridge National Laboratory, T.L. ALLEN, P.M. LAHTI, University of Massachusetts, J. CHERIAN, T. TOKUMOTO, S. MCGILL, National High Magnetic Field Laboratory — We investigated the tunability of the singlet-triplet equilibrium population in 1,4-phenylenedinitrene via magneto-optical spectroscopy. Both temperature- and magnetic field-induced spectral changes in this organic biradical are sensitive to magnetic energy scales, specifically the spin gap, demonstrating the important interplay between charge, and magnetism in this system. These measurements also establish the value of local-probe photophysical techniques for extraction of magnetic properties data in systems where a traditional Curie law analysis has intrinsic limitations. *This work is supported by the National Science Foundation.

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