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Polarization states of charged excitons in coupled InAs/GaAs quantum dot molecules RAMANA THOTA, SWATI RAMANATHAN, KUSHAL WIJESUNDARA, ERIC STINAFF, Department of Physics and Astronomy, and Nanoscale and Quantum Phenomena Institute, Ohio University, Athens, Ohio 45701-2979, USA, ALLAN BRACKER, DAN GAMMON, Naval Research Laboratory, Washington, DC 20375, USA — The polarization state of charged excitons in coupled InAs/GaAs dots can reveal useful information about the spin state of its charge carriers. In this study, we examine the complete polarization state through Stokes parameter measurements to relate the polarization parameters of the luminescence to the spin configurations of the various charged excitons they originate from. We demonstrate that this method is a useful tool to identify and possibly create spin states for quantum computation applications.

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