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Robust Aharanov-Bohm oscillations at elevated temperatures in type-II ZnTe/ZnSe quantum dots[1] V.R. WHITESIDE, I.R. SELLERS, University at Buffalo, I.L. KUSKOVSKY, Queens College CUNY, A.O. GOVOROV, Ohio University, B.D. MCCOMBE, University at Buffalo — The Zn(Te)Se material system is remarkable in that it is possible to study both Te-bound isoelectronic excitons and type-II ZnTe quantum dots (QDs) in the same sample. This is possible since with increasing tellurium deposition there is a clustering of the Te-atoms resulting in an evolution of Te isoelectronic centers, formed by Te-Se substitution, into ZnTe QD structures. The formation of columns of such QDs in multilayer superlattice structures has recently been shown to be particularly suitable for the observation of the optical Aharanov-Bohm effect. Here we present magneto-photoluminescence from such type-II ZnTe/ZnSe QDs that demonstrate large and persistent oscillations in *both* the exciton energy *and* intensity at high temperature indicating the formation of coherently rotating states. Furthermore, this high temperature Aharanov-Bohm effect is remarkably robust persisting until 180K despite significant quenching of the luminescence due to ionization of the type-II excitons.

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I.R. Sellers
University at Buffalo

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