

Abstract Submitted
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Observation of a coherent exciton-LO phonon resonance in a ZnSe single quantum well SUVRANTA K. TRIPATHY, HANS-PETER WAGNER, PRADEEP BAJRACHARYA, Department of Physics, University of Cincinnati, Cincinnati, Oh, 45221, A. UETA, D. HOMMEL, Institut für Festkörperphysik, Universität Bremen, D-28334 Bremen, Germany — A new coherent signal has been observed while performing two-beam degenerate four-wave mixing (FWM) experiments on a 3nm ZnMgSSe/ZnSe single quantum well (SQW) using 30fs laser pulses. In this SQW structure the exciton binding energy exceeds the LO-phonon energy (31.6 meV). The observed spectral feature is blue shifted with respect to the heavy-hole bound exciton transition by ~ 32 meV and indicates the formation of a coherent exciton-LO phonon resonance with a dephasing time of ~ 500 fs. This tentative assignment is further supported by photoluminescence excitation (PLE) and by reflection measurements. This work is supported by the National Science Foundation (DMR-0305076).

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