

Abstract Submitted
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Dependence of the magneto-optical properties on laser excitation in magnetic QDs¹ PEIYAO ZHANG, TENZIN NORDEN, ARMAN NAJAFI, BIPLOB BARMAN, YUTSUNG TSAI, BRUCE MCCOMBE, ATHOS PETROU, State Univ of NY - Buffalo, WUN-JHONG FAN, WU-CHING CHOU, National Chiao Tung University — We compare the red shift of the PL peak energy with magnetic field in: a) ZnTe QDs embedded in an ZnMnSe matrix and b) ZnMnTe QDs embedded in a ZnSe matrix using two photon energies: 1. Excitation at 405 nm (3.06 eV) with photon energy above the ZnSe and ZnMnSe matrix gaps resulting in electron-hole pairs mainly in the matrices. 2. Excitation at 488 nm (2.54 eV) with photon energy below the ZnSe and ZnMnSe matrix gaps but above the bandgaps of the ZnTe and ZnMnTe QDs resulting in electron hole pairs exclusively in the QDs. The red shift of PL peak energy from the ZnTe QDs increases with 488 nm excitation compared to the red shift using 405 nm excitation; the trend is reversed for ZnMnTe QDs. These results are interpreted in terms of the dependence of the confinement potentials with laser photon energy.

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