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Size Dependence of Upconversion Photoluminescence in MPA Capped CdTe Quantum Dots: Existence of Upconversion Bright Point

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Abstract

The photoluminescence (PL) from semiconductors quantum dots can show a "PL bright point", that is the PL from as prepared quantum dots is maximum at a particular size. In this work we do show that, for CdTe quantum dots upconversion photoluminescence (UCPL) originating from nonlinear absorption shows a similar "UCPL bright point". The PL and UCPL bright points occur at nearly the same size. The existence of a UCPL bright point has important implications for upconversion microscopy applications.

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