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The Carrier Recombination Of InAs/GaAs Quantum Dots CHE-YU CHANG, DER-JUN JANG, SHU-CHING LI, Department of Physics,National Sun Yat-sen University, ELMER ESTACIO, National Institute of Physics,University of the Philippines,Diliman —

In this study, the Time-Correlated Single Photo Counting (TCSPC) technique was used to measure the photoluminescence (PL) spectra and time-resolved PL spectra of InAs/GaAs QDs. Results showed that at temperatures below 50K, the lifetime of QDs are below 2ns in the infrared region. However, at temperatures over 50K, lifetimes exceeding 2ns can be observed. As the temperature was increased from 14K to 100K the lifetime also increases. Finally, when we fixed the temperature at 100K, we observed that the lifetime increased as the wavelength was increased.

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