

We realized ultra-narrow excitonic emission from single GaAs/AlGaAs quantum dots (QDs) grown by a refined droplet epitaxy technique. We found that uncapped quantum dots can be annealed at 400 °C without major changes in their morphology, thus enabling an AlGaAs capping layer to be grown at that temperature. Consequently, we demonstrate a fourfold reduction of the linewidth of the emission together with an increased recombination lifetime, compared to the conventional droplet epitaxial QDs. The averaged linewidth of neutral excitons measured by micro-photoluminescence on single quantum dots was around 35 μeV .