

Supplementary Information

Quantum Dot Photolithography using Quantum Dot Photoresist composed of Organic-Inorganic Hybrid Coating Layer

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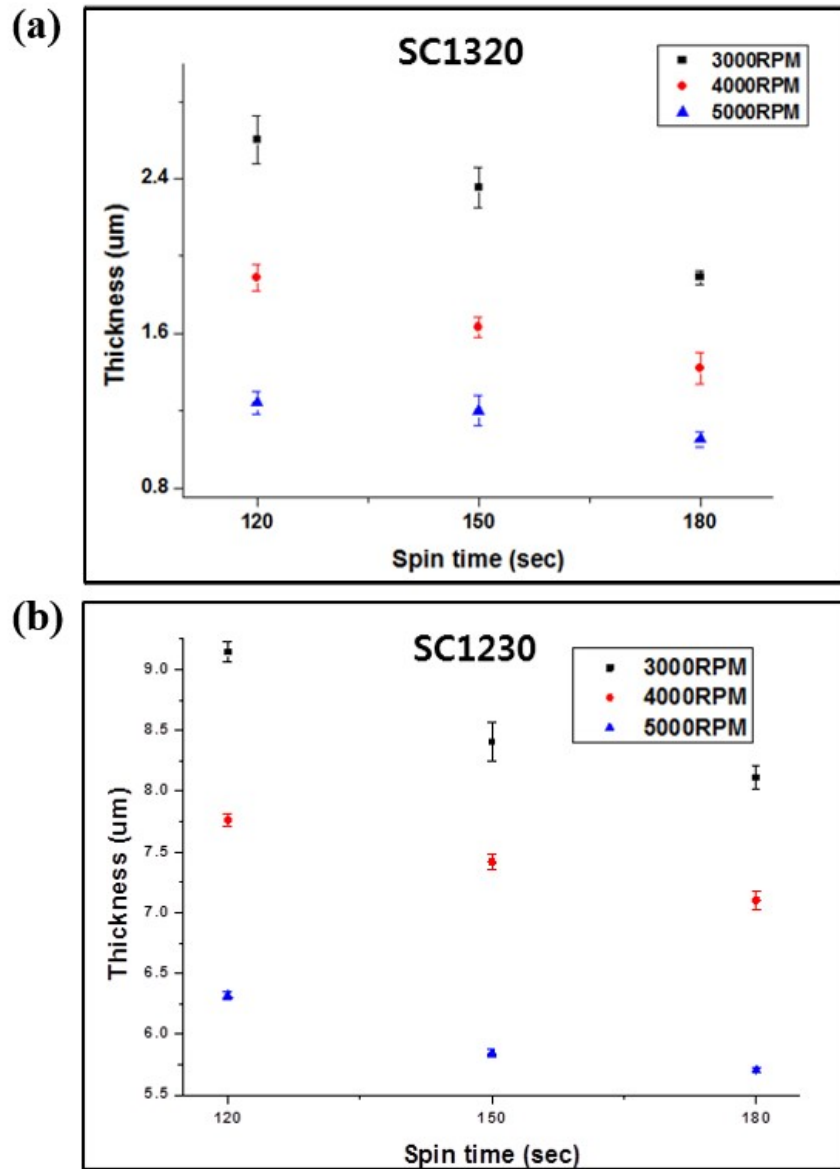


Figure S1. Spin curves of QD-PR fabricated using SC1320 and SC1230

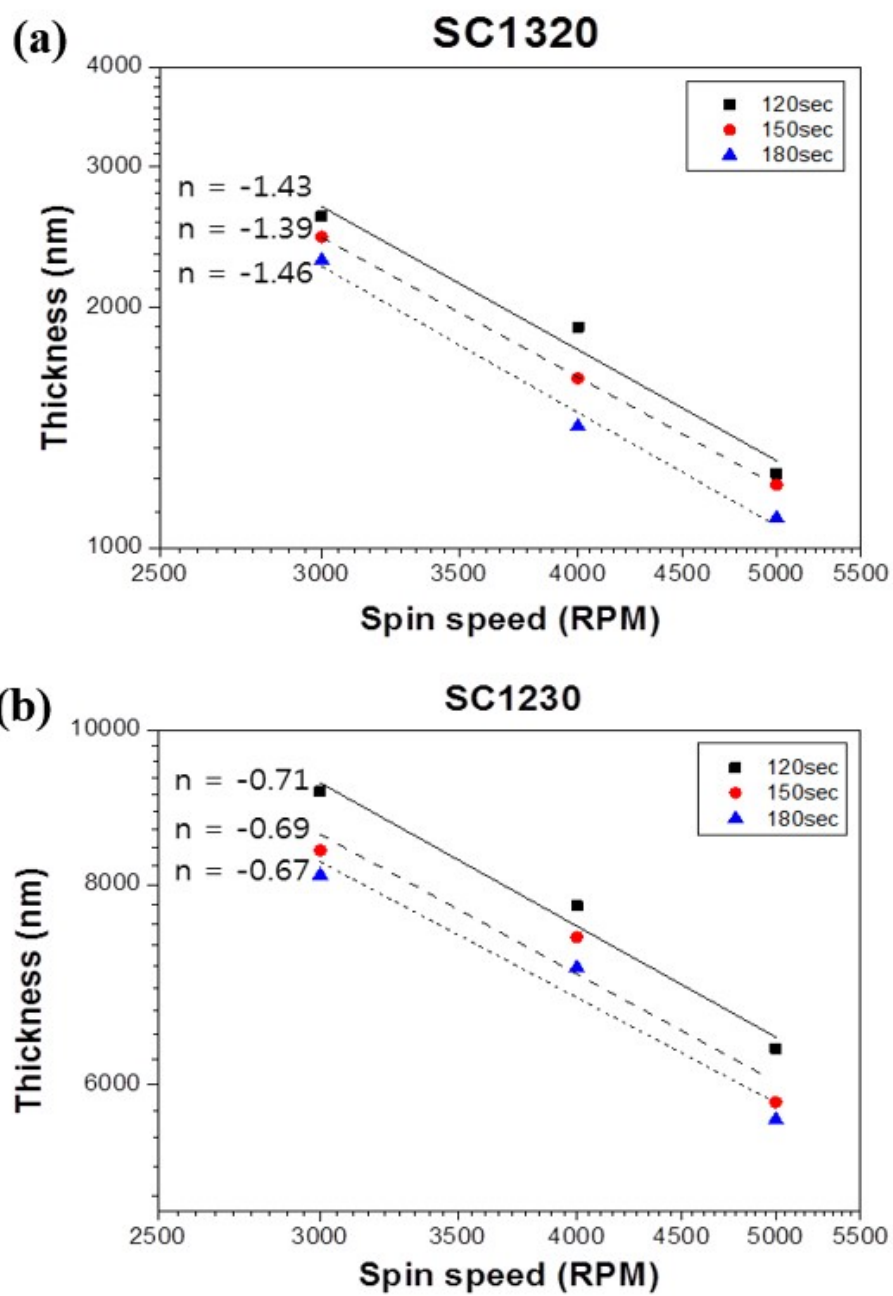


Figure S2. Double logarithmic representation of the spin curves of SC1320 and SC1230

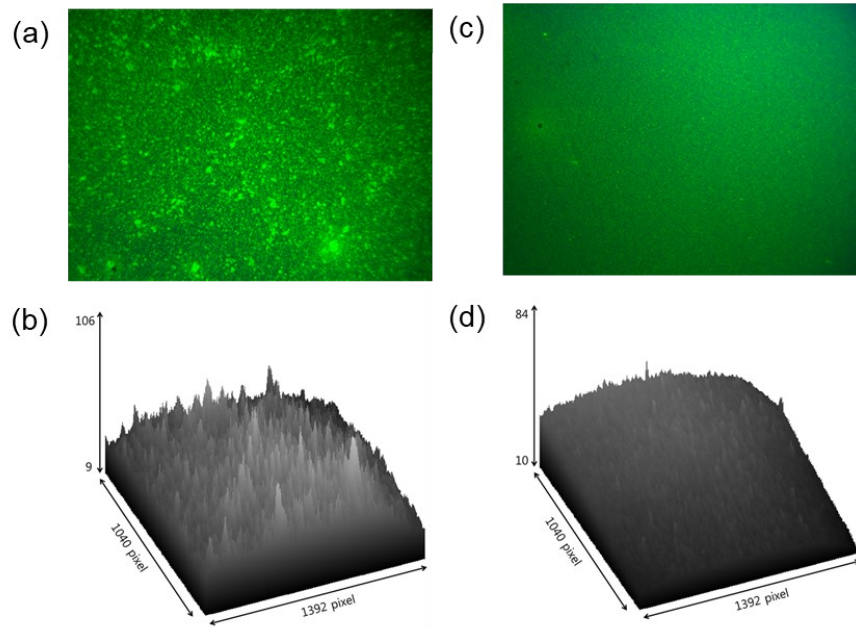


Figure S3. Dispersion of green QD-PR film (a) SC1320 for 5 wt% green QD, and (c) SC1230 for 5 wt% green QD. Surface plot of quantum dot film in gray pixel values for (c) SC1320 and (d) SC1230. The green QDs were mixed in QD ink, and the halogen lamp light source of the light microscope was replaced with a 365-nm M365L3 light source from Thorlab LED to distinguish the defects and quantum dots by fluorescence emission. A gray scale profile was applied to study the intensity scattering as a function of QD film region due to aggregation. SC1320 has a SD of 10.8, while SSC1230 has a SD of 6.8 in the gray pixel values. The larger noise in the graph for SC1320 was caused by the irregular PL caused by the aggregated QDs.

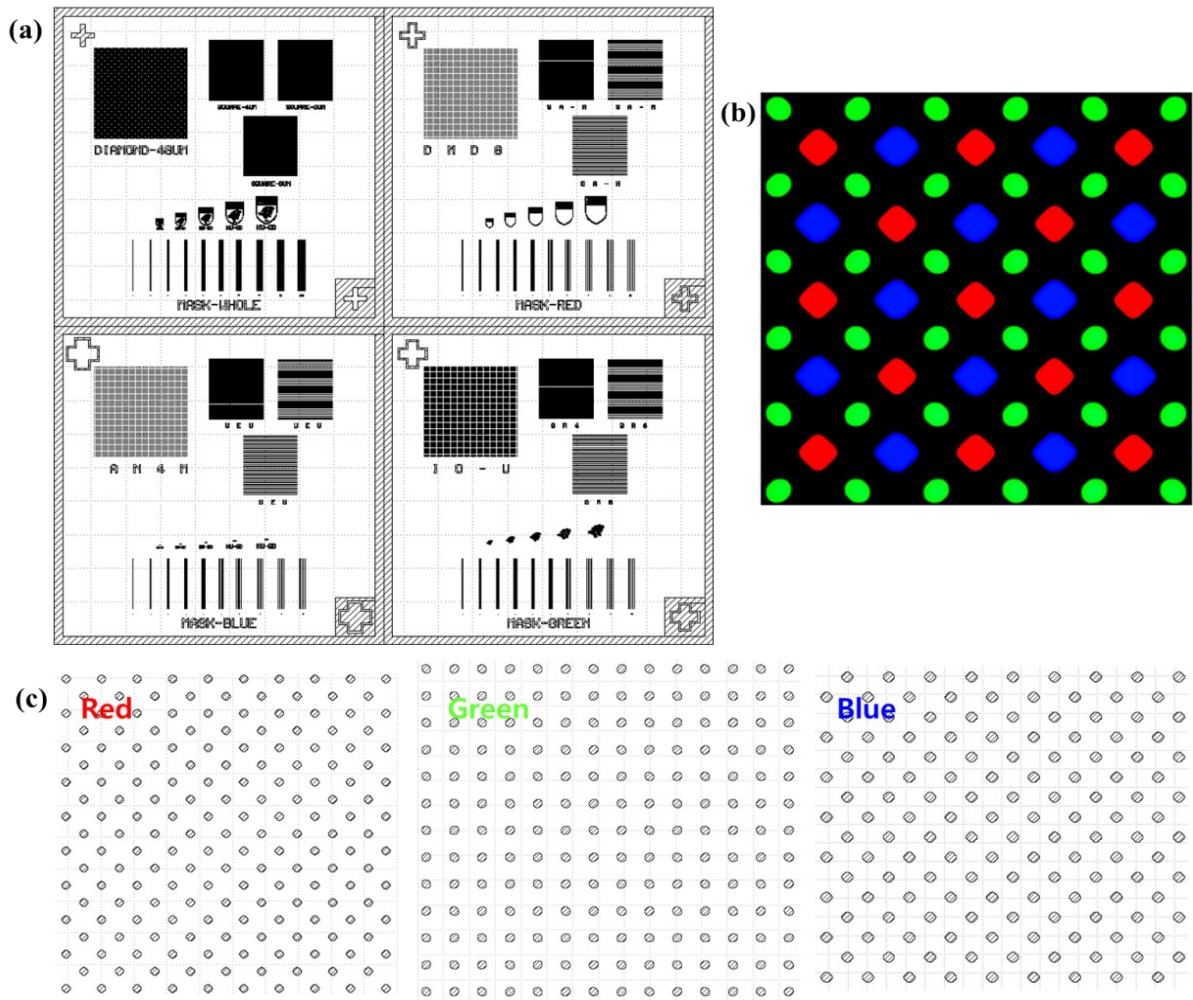


Figure S4. Layout designs for the photomask used in the red and green QD processes

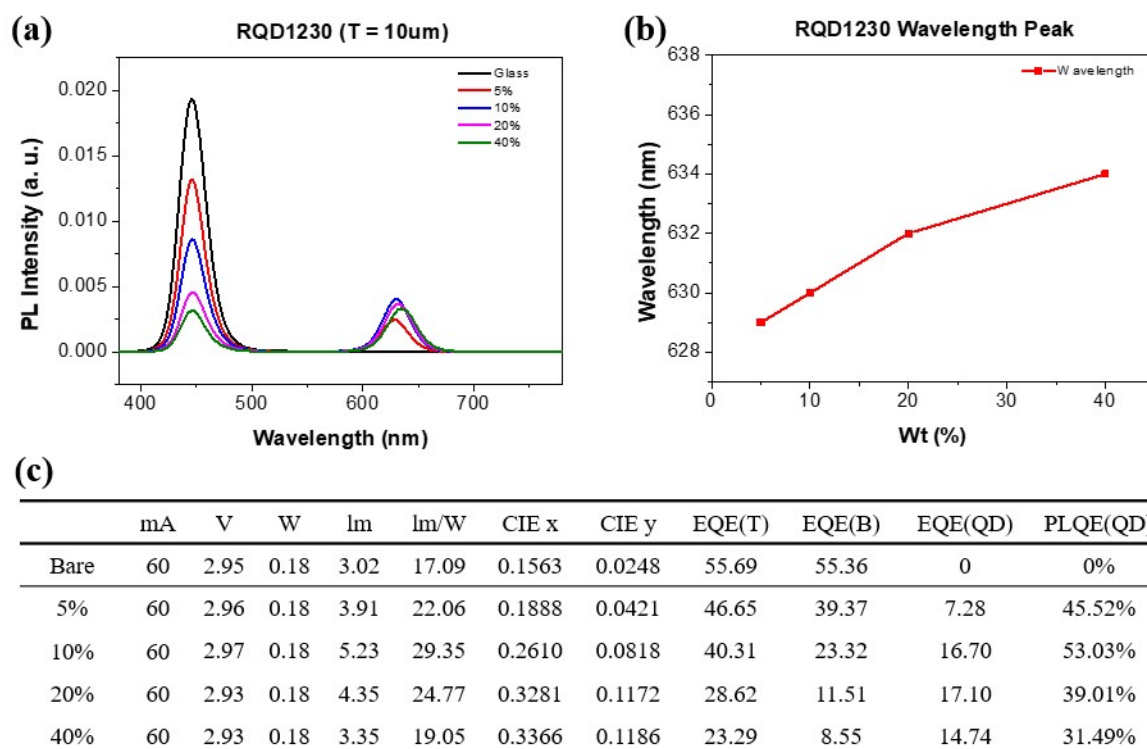


Figure S5. Optical characteristics of a QD film made with a QD-PR containing 5, 10, 20, 40 wt. % red QD (RQD)

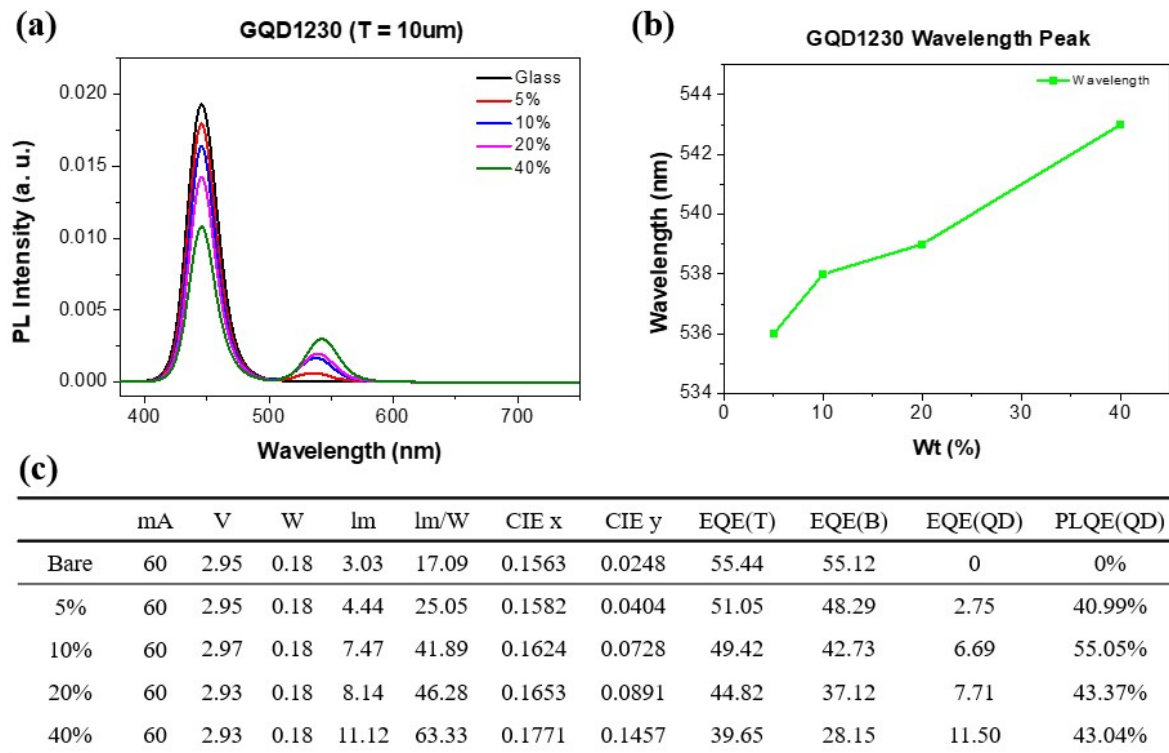


Figure S6. Optical characteristics of a QD film made with a QD-PR containing 5, 10, 20, 40 wt. % green QD (GQD)

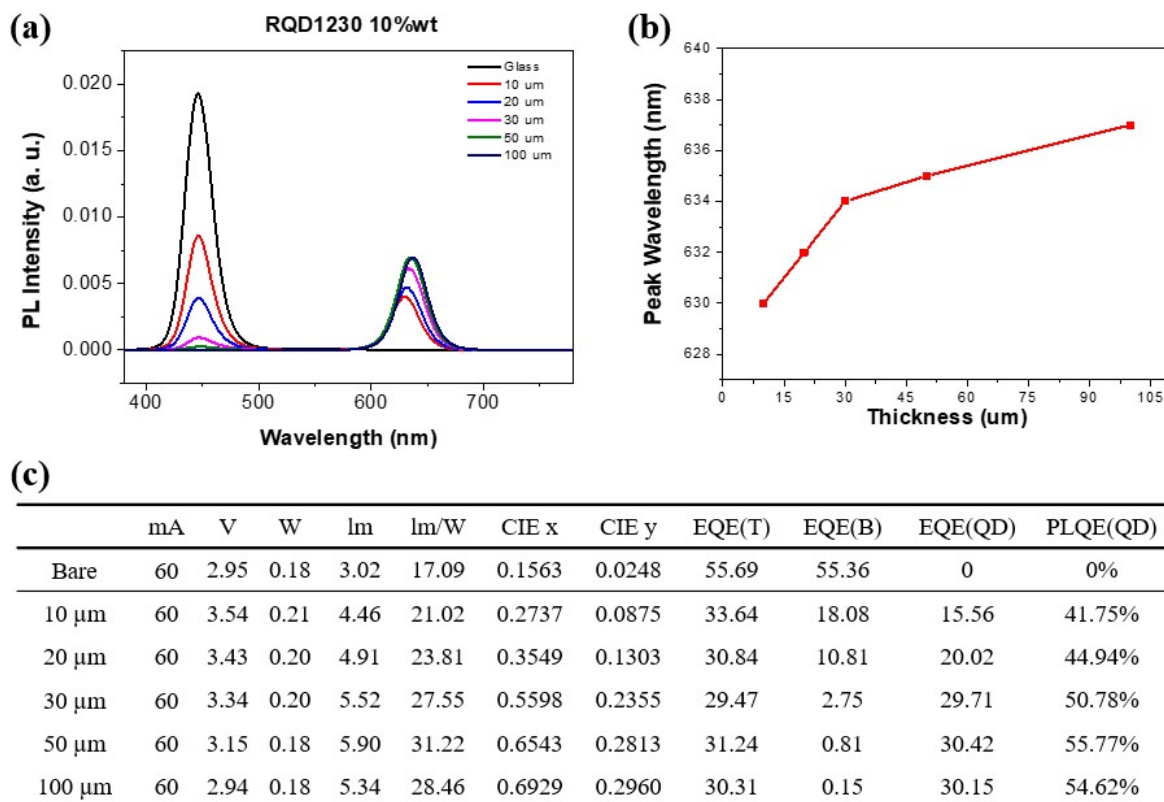


Figure S7. Optical characteristics of films with thicknesses ranging from 10 to 100 μm that were fabricated using QD-PR containing 10% red QDs

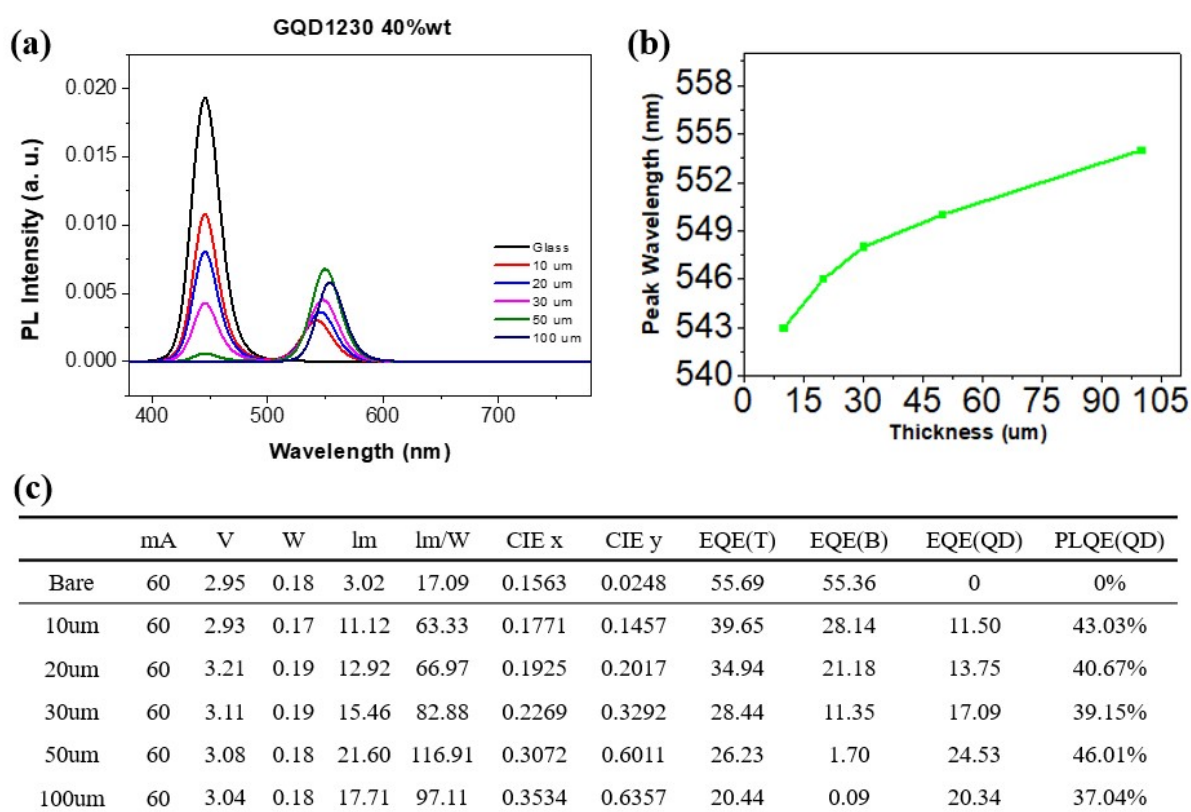


Figure S8. Optical characteristics of films with thicknesses ranging from 10 to 100 μm that were fabricated using QD-PR containing 40% green QDs