

Optical Properties of Colloidal Suspension with Changing Particle Concentration

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Quantum dots (QDs) have been widely studied in many fields because of their unique properties such as wide absorbance range, narrow fluorescence wavelength, and size-dependent emission. Quantum yield (QY) is an important parameter to determine optical properties of fluorescent particles. In QD suspension, QY can be affected by Förster resonance energy transfer (FRET) and absorption. Even though there are many studies on fluorescence quenching of QDs in dilute colloidal suspensions and film, few studies are available on the change in QY of QDs in highly concentrated colloidal suspension. To study the change in QY of QD suspension easily, we synthesized silica/quantum dots/silica (SQS) hybrid particles. We studied the change in QY of SQS suspension in different conditions. And then, we also studied the reason of the change of QY in colloidal suspension.