

Synthesis and properties of mercury selenide colloidal quantum dots, prepared with the new selenium precursor based on Decene-1

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New selenium precursor was prepared by dissolution of elemental selenium in decene-1 at elevated pressure. The best conditions were determined for the preparation of reagent with the highest reactivity in the synthesis of nanoparticles. The developed precursor was studied by NMR spectroscopy. Synthesis of mercury selenide quantum dots was developed and studied with this reagent. The prepared HgSe quantum dots possess strong absorption in mid-IR spectral range. The developed material was successfully tested in the preparation of photoresistor.

Keywords: mercury selenide, hot injection synthesis, selenium precursor, colloidal quantum dots, nanocrystals.

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