

Formation of PbS quantum dots by spin-assisted SILAR

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PbS quantum dots (QDs) have prominent properties such as high optical absorption, facile bandgap tunability by size control, multiple exciton generation, and easy charge separation by large dipole moment. Despite great potential of PbS QDs in sensitized solar cells, the PbS QDs have problems in efficient charge injection and transportation due to the insulating organic ligands. Therefore, the formation of uniform PbS QDs without insulating ligands is still challenging. Here, we synthesized PbS QDs by spin-assisted SILAR (successive ionic layer adsorption and reaction) and subsequent anionic exchanging reaction of lead halide nanodots.