

CuS embedded structured PbS QDs with cation exchange for solar cells

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Recently, many researcher are interested in natural energy source like a sun, wind, and geothermal energy, means renewable & alternative petroleum energy. Among them, photovoltaic cell from sun is the most attended than others because it has great capacity and accessibility. In this report, we introduce a new structured CuS embedded PbS QDs and their sensitized photovoltaic device application. CuS affords more wide wavelength absorption characteristics due to the SPR effect compared with PbS QDs. We fabricated all solid type DSSC using CuS embedded PbS QDs and obtained EQE of 8.07% through dramatic increase of J_{sc} . We are expecting that this approach can be a new paradigm for energy harvesting.