

Application of LiBOB-based liquid electrolyte in co-sensitized solar cell

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R�sum� en anglais	Co-sensitized solar cells have been fabricated using metal complex N3 dye and Ag2S/CdS quantum dots coupled with LiBOB-based liquid electrolyte. Quantum dots (QDs) were synthesized via the successive ionic layer adsorption and reaction (SILAR) route. The absorbance and band gap energy of Ag2S and CdS QDs were determined. Their refractive indices were observed to be in the range of 1.5175-1.5200. It has been shown that LiBOB-based liquid electrolyte is able to function in the QD/N3 dye co-sensitized solar:cells but some stability issues of the QD were observed in the electrolyte system containing iodide whereby the QD-sensitized TiO2 was easily etched. Overall efficiencies and fill factors of the co-sensitized solar cells varied from 0.98% to 1.66% and 40% to 46% respectively. CdS QD was shown to be effective when coupled with polysulfide electrolyte while Ag2S QD was favorable towards the LiBOB-based liquid electrolyte.
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