



Charge-separated excited states in platinum(II) chromophores: Photophysics, formation, stabilization and utilization in solar energy conversion

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Abstract

This review discusses photophysical properties and application of diverse and broadly tuneable Pt(II) based chromophoric systems for solar energy conversion. Firstly, we outline photophysical properties of the prevailing classes of Pt(II) compounds, as classified by the donor ligand(s). A brief review of the multicomponent electron transfer cascade systems follows. The trends in the photophysical properties – the lifetime of the charge-separated state, emission yields, etc. – as a function of the electronic and steric properties of the ligands are analysed. The final part considers emerging exciting applications of Pt(II) compounds in dye-sensitized solar cells and dihydrogen production.

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