Introduction

Solar cells require highly absorptive panchromatic materials to capitalize on light no
directly at the wavelength of operation. A high performance solar cell
is dependent on the choice of the active material, and the corresponding panchromatic
absorption is also important.

The high chemical and thermal stability of iridium(III) complexes are attractive features
for high performance solar cells that have been developed, primarily due to the poor absorption
characteristics of most iridium(III) complexes.

We have incorporated ligands with strong charge-transfer character designed to overcome
the low absorption limits of most iridium(III) complexes.

Literature Dyes and Comparative Absorption

UV-absorptive small molecule organics.


d. Highly absorptive small molecule organics.

c. Highly absorptive small molecule organics.

Exploration of Aryl-BIAN ligands

UV-absorptive small molecule organics.

a. Highly absorptive small molecule organics.

Absorption and Electrochemical Properties of Complexes 1-6

Optoelectronic Characterization

Conclusions

We have developed two families of panchromatic iridium dyes.

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for high performance solar cells that have been developed, primarily due to the poor absorption
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Acknowledgements and Funding

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