

NON-FULLERENE BASED ACCEPTORS FOR ORGANIC PHOTOVOLTAICS

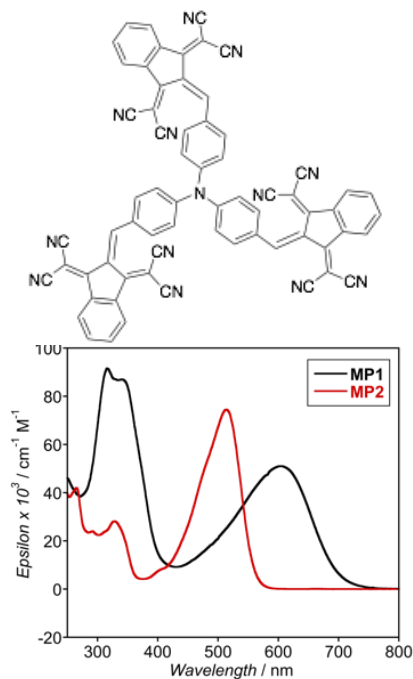
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Organic photovoltaics (OPV) has attracted much attention due to its potential low production cost and light-weight, flexible design.¹ Soluble fullerene derivatives such as PCBM have been widely used to form the electron-accepting semiconductor in the device due to the high efficiencies that have been achieved.² Drawbacks to PCBM however, include lack of absorption above 500 nm and a relatively high cost. To address these limitations, several research groups have developed new electron-accepting molecules based on perylene,³ vinazene⁴ and pentacene⁵ dyes, however none of these has reached the efficiency of PCBM-based devices. This presentation will describe our recent work on the synthesis, characterization and testing of new electron-acceptors for OPV, based on three-leg, donor-acceptor dyes and on metal complexes. These possess a broad, intense absorption and appropriate electrochemical properties to act as acceptors in OPV.



References

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