Design of Conjugated Polymers for Ternary Blend Solar Cells

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**Polymer Based Solar Cells (Photovoltaics)**

**Devices**

**Thiophene Monomers**

- Coupling of with the fullerene [6,6]-phenyl-C_{61} butyric carboxylic acid PCBM

**Data**

**UVVis Absorption**

**UVVIS Absorption**

**Model Dyes in Binary Blends Devices**

- Synthesis of 3-hexylthiophene and 3-(oligoethylene oxide)-thiophene:
  - Basis for a new family of homopolymers, random copolymers, and semi-random copolymers with a range of electronic structures and surface energies
  - Necessary control over phase separation to achieve desired morphologies by specific generation of donor polymers categorized as strongly hydrophilic, hydrophobic, and strongly hydrophobic.

**Dioketopyrrolopyrrole-based dye**

**Outlook**

- Define effect of the added dye compound
- Provide adequate explanation of how the addition strategy influences device properties

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**References**