

Organic Solar Cells: From a Lab Curiosity to a Serious Photovoltaic Technology (Presentation Video)

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ABSTRACT

Carbon-based organic semiconductors have many potential advantages like easy large-area preparation on flexible substrates, large variety of materials, and low cost. Organic solar cells have recently achieved significant progress and have crossed the 10% efficiency mark. In this talk, I will present an overview over the key features of solid-state organic solar cells and recent developments in the field. One central research area is the design of the bulk heterojunction active layer, requiring a nanoscale phase separation and optimized morphology to achieve efficient operation. I will also discuss highly efficient tandem structures with optimized electrical and optical properties, having the potential for approx. 20%.

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