

Designs of Conjugated Polymers and Hybrid Perovskites for Optoelectronic Applications

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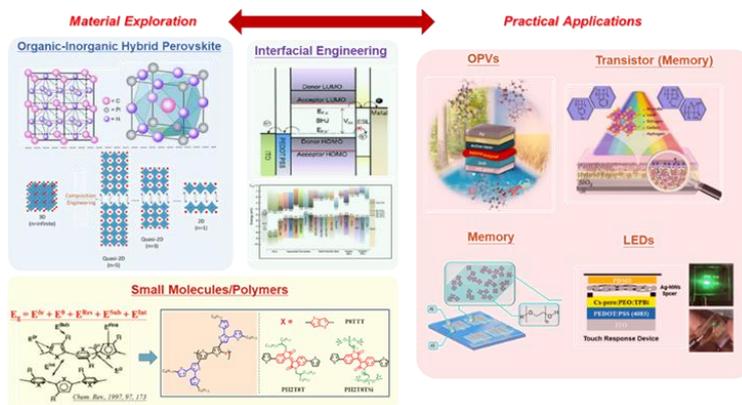
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Abstract

Our research group focuses on the development of solution-processable conjugated polymers and perovskites, and functional interlayers for various kinds of optoelectronic devices, including thin-film transistor (TFT), (photo-)memory, light-emitting diode (LED), and photovoltaic devices. We are particularly interested in exploring the structure-performance relationship of these solution processable semiconductors. Besides the advances in controlled synthesis of these materials, we also explore innovative interfacial and device engineering to optimize the device performance. Herein, we focus on introducing our recent works regarding the device optimization for organic photovoltaics (OPVs) and perovskite transistors. In this presentation, an integrated study of combining material synthesis, interface engineering, and morphology analyses will be introduced and discussed to explore the full promise of the devices, especially focusing on device's long-term stability.

Keywords: Conjugated polymers; organic solar cell, perovskites; thin-film transistors



Reference

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