

Interfacial Engineering for High Performance Polymer and Perovskite Solar Cells

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Efforts in the design, processing, and engineering of π -conjugated molecule and polymers have enabled significantly enhanced performance and stability of organic and hybrid electronic devices, through which the light-harvest, exciton dissociation, charge transport, and charge collection at the metal/absorber/metal oxide interfaces can be controlled and tuned.[1]

In this talk, the integrative molecular engineering approach conducted in group of combining interface, [2-3] active material,[4-5] and molecular additive design to improve the performance and stability of polymer and hybrid perovskite photovoltaic cells will be discussed. Specific emphasis will be placed on the engineering of organic/metal oxide and perovskite/electrode interface via introduction of self-assemble monolayer and/or dopant-free charge transport layer, to unlock the interfacial constrains of high-performance polymer and perovskite hybrid solar cells.

References

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