

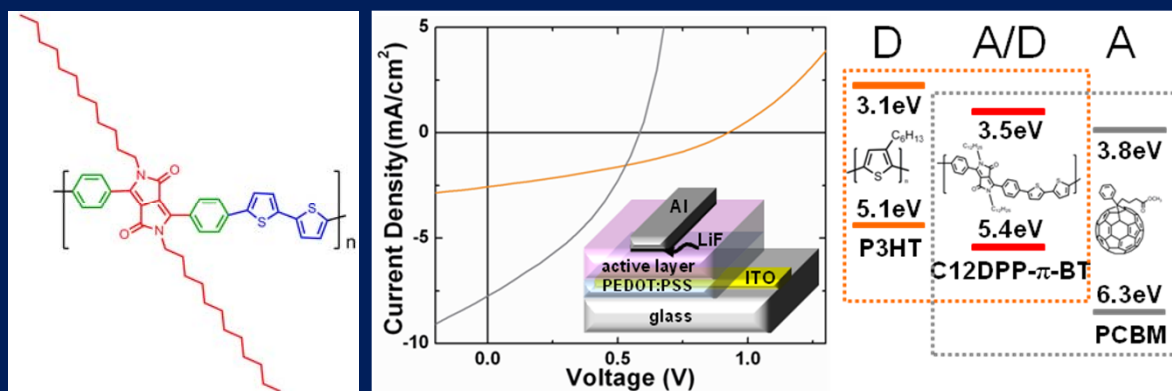
# Organic and Inorganic Architectures for Solution-Processable Solar Photovoltaics

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*We are tailoring organic-inorganic and organic-organic donor-acceptor heterojunctions and their interfaces to develop new materials for solar photovoltaics. We have designed and constructed new optical and electrical measurement techniques to probe and correlate the properties of the materials with their performance in devices.*

## Diketopyrrolopyrrole-based $\pi$ -bridged Donor-Acceptor Polymer for Photovoltaic Applications

The push-pull donor-acceptor copolymer has energy levels intermediate to common electron donor and acceptor photovoltaic materials P3HT and PCBM and serves as an electron donor or an acceptor when paired with PCBM or P3HT, respectively, forming junctions with large built-in potentials.



## Thiocyanate Capped Semiconductor Nanocrystal – Organic Solar Photovoltaics

Thiocyanate ligands disperse CdSe nanocrystals in polar solvents and provide short nanocrystal-polymer and nanocrystal-nanocrystal distances for charge transfer and transport explored in for different size nanocrystals in bilayer solar cells with P3HT.

