Advanced Materials, Devices and Processing for the Flexible Photovoltaics on Polymer Substrates

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Organic-inorganic hybrid perovskite semiconductors have emerged as promising next-generation photoactive materials for solar cell applications because of their unique properties such as low energy bandgaps (~1.6 eV), high extinction coefficients, long exciton diffusion lengths, and low exciton binding energies. They are solution processable at low temperatures, which means that the associated solar cells can be printed on plastic substrate. Over the past few years, we have developed several facile methods for the fabrication of efficient flexible solar cells on plastic substrates. In this talk, several starategies to address these issues will be introduced.