

Novel organic chromophore for solution -processed organic solar cells

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Organic conjugated chromophores with thiazolo[5,4-d]thiazole-core acceptor have shown a lot of attraction due to their strong electron -accepting tendency as photoactive materials. Thiazolo[5,4-d]thiazole have a fused heterocyclic ring structure which induces a planar geometry necessary for the application in photovoltaic devices. In this study, we synthesize a organic chromophore featuring thiazolo[5,4-d]thiazole-core along with bithiophene donor materials and applied in solution -processed small molecule organic solar cells. The chromophore shows a good solubility and co -planarity which might be due to the presence of alkyl side chains. The performance of the devices is affected by the active layer film morphology of the blend films. The fabricated solution processed solar cell devices displays an overall efficiency of ~ 1.57%.