Printed organic solar cells with in- situ characterization methods





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Fabrication methods Organic solar cells with non-fullerene acceptors (NFAs) spin coating: blade · high performance · large scale incompatible spin coating blade coating VS other methods: Printing · good performance head · large scale accessible slot die coating spray coating 1,100 [2] bulk structure Spin coating → Blade coating OSCs: [4] environment friendly light weight wide absorbance semi-transparence thin film formation kinetics high crystallinity varies with different methods large-scale fabrication Voltage (V) In-situ printing of the OSC thin films Crystallinity formation kinetics (in situ GIWAXS) P03 beamline Log int. (q_{xy} (Å⁻¹) Crystal distance $d = 2\pi/q$ solution thin film CB Aggregation and conformation kinetics (in situ UV-vis) Intensity (a.u.) 1.6 1.8 q (Å⁻¹) •the crystallization of blend films decreases with CB while Wavelength (nm) Wavelength (nm) increases with CF donor blueshift (H aggregates) while acceptor redshift (J aggregates) during drying in both solvents. the shifts of peak position and FWHM suggest the crystal ·acceptor undergoes serious redshift (J aggregates) in growth during solvent evaporation

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Dr. .Xinyu Jiang finished the PhD study from TU Munich and becomes a Postdoc at DESY FS-SMA group since 2023.07. My research interest is on scaling-up of the high performance of organic solar cells.











