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Polymer-polymer interfaces in thin film transistors MICHAEL CHABINYC, JUSTIN COCHRAN, University of California, Santa Barbara, MICHAEL TONEY, Stanford Synchrotron Radiation Lightsource — Despite the importance of interfaces between semiconducting and dielectric polymers in thin film transistors, very little is known about the interplay between morphology and charge transport. Using a dry thin film transfer method we have fabricated polymer bilayers of semiconducting an insulating polymers that are inaccessible using spin coating. The transfer method allows the formation of polymer-polymer interfaces without the complication of solvent interactions during film formation and enables study of morphology and transport independently. For example, we have found that transferred layers of poly(2,5-bis(3-hexadecylthiophen-2-yl)thieno[3,2-b]thiophene) PBTTT, have higher field effect mobility on some crosslinked dielectrics than directly spin-cast films. The microstructure of these bilayers has been examined using x-ray scattering and shows similar bulk ordering despite the difference in hole mobility.

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