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Morphology of conjugated polymer/insulating polymer blends from inkjet printing and its correlation to the function of field-effect transistors HUIPENG CHEN, GUOCHEN ZHENG, LIQIN HU, HUIHUANG YANG, TAILIANG GUO, Fuzhou University — Printed electronics is a rapidly developing field of research which covers any electronic devices or circuits that can be processed using direct printing techniques. Among those printing techniques, inkjet printing is a technique of increasing interest for organic field-effect transistors (FETs) due to its fully data driven and direct patterning. In this work, the morphology of conjugated polymer/insulating polymer blends from inkjet printing and their FET properties has been investigated. The crystallinity and packing of conjugated polymer has been examined by synchrotron x-ray diffraction. The detailed information about the interface and domains of polymer blends were investigated by small angle neutron scattering. It is found that the domains and polymer interface were crucial to the FET properties. Finally, the relationship between morphology and function has been established for polymer blends FET from inkjet printing.

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