

Ultra Large Area Film Uniformity For Thin Film Transistors By Bar-Coating Methods

곽선우^{1,2}, 한 현¹, 박원태¹, 김인영², 이택민², 노용영^{1,*}

¹한밭대학교; ²한국기계연구원

(yynoh@hanbat.ac.kr*)

We demonstrate high performance bar-coated top-gate/bottom-contact (TG/BC) polymer field-effect transistors (FETs) using ambipolar conjugated polymer, F8BT (poly (9,9-dioctylfluorene-co-benzothiadiazole)). We have obtained high field-effect mobility more than 1.8×10^{-4} cm²/Vs for FETs. These results compare with field-effect mobility of spin-coated transistor. In addition, bar-coated transistors showed uniformity of the large area, 10 cm x 10 cm, in PET, PEN, and glass film. We believed that bar-coating method is one of the most compatible printing methods in the field of OFETs, organic light-emitting diodes (OLEDs), and organic photovoltaic cells (OPVs) which are needed for large area uniformity and high device performance.