Photolithographic patterning and passivation of P3HT organic thin film transistors
with photo-sensitive polyvinylalcohol(PVA) layers

Dong-Hyun Nam, Kyo-Yong Han
Yeungnam Univ.

Abstract: By employing a photo-sensitive PVA as a photoresist, we first demonstrated simultaneous patterning and passivation of P3HT active layer. The passivation layers were obtained by annealing the organic layers after developing PVA and over-etching the P3HT layer. The fabricated OTFTs were electrically characterized. The OTFTs after the passivation exhibited the field-effect of $\sim 5.9 \times 10^{-4}$ cm$^2$/V•s, on/off current ratio of $\sim 10^3$. The value of OTFTs a little degradation with time in air but it appeared different unpassivated OTFT.

Key Words: P3HT, Passivation, Patterning, PVA