

Applications of Liquid Crystals for Organic Field-Effect Transistors

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Recently organic electronics has taken a strong position because of its unbeatable merits in terms of unlimited design of organic materials and low-cost fabrication due to low temperature processes. One of the successful examples is organic light-emitting device (OLED), which is now being a high-quality display for smart phones and TVs. In addition to the OLED case, organic field-effect transistors (OFETs) have been extensively studied and recently their performance (mobility) overwhelmed inorganic FETs with amorphous silicon materials which have been widely used as an active matrix backplane for liquid crystal displays (LCD). Recently we have successfully shown that LC materials can be well combined with OFETs for new applications. In this presentation, further smart applications of LCs for OFETs will be discussed by showing experimental results.