

Inkjet Printing 공정에 의한 투명 산화물 박막 제조

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Inkjet printing at atmospheric environment offers an opportunity for direct patterning of functional materials and provides a potential cost advantage over the amorphous and polycrystalline silicon-based technologies. Due to the difficulties of preparing inkjet printable inorganic precursors, not much research has been done for fabrication of inorganic devices by inkjet printing.

In general, inorganic semiconductors have the advantages of higher mobility and better stability. Many successful results have been reported on inkjet printing of metal nanoparticles for metallization. So far, reported inkjet printed TFTs using inorganic channel layers require a special precursor that is difficult to handle and require stringent processing conditions.

We have recently developed a general and low-cost process for inkjet printing a variety of high-mobility semiconducting metal oxides as TFT channel layers for the first time. This synthetic pathway opens a new avenue to fabricate a variety of patterned metal oxide semiconductors through a simple and low-cost process.