

# Commercialization of inkjet printing technology as an alternative fabrication route for large area devices

Dong-Ik Joo and Seong-Jin Kim, Corporate R&D Institute, Samsung Electro-Mechanics Co., Ltd., (Korea)

## Abstract

*Inkjet printing technology has been considered as an alternative fabrication route for major commercial applications. While the conventional subtractive process requires many steps of thin film coating and etching process, inkjet printing technology allows direct patterning of materials. The widespread use of this technology is being accelerated because of both economical and technological advantages. As capital investment in equipment has been increased recently, the LCD panel industry has been looking for an alternative way to manufacture LCD panels. This trend is expected to be more prominent as the size of mother glass increases. Inkjet printing technology may be an attractive candidate to reduce the amount of capital investment and consumption of materials used in manufacturing important*

*devices. Another advantage of inkjet printing technology is the ability to use various materials. Unlike the conventional vapor deposition technology, several different types of materials can be used as an ink form. An important technological requirement for ink formulation is particle dispersion technology which has been used in other industries. This functional ink will bring about a better performance which cannot be achieved through vapor deposition technology. The convergence of materials science and printing technology will contribute to both scientific and commercial advancement. We have developed key technologies which can commercialize some of the major printing applications. Some examples for the inkjet printing applications as well as important technological requirements will be discussed in this presentation.*