

## 디지털 프린팅을 위한 전도성 배선에 관한 연구

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### **Investigation of Conductive Pattern Line for Direct Digital Printing**

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**Abstract** : Current thin film process using memory device fabrication process use expensive processes such as manufacturing of photo mask, coating of photo resist, exposure, development, and etching. However, direct printing technology has the merits about simple and cost effective processes because inks are directly injective without mask. And also, this technology has the advantage about fabrication of fine pattern line on various substrates such as PCB, FCPB, glass, polymer and so on. In this work, we have fabricated the fine and thick metal pattern line for the electronic circuit board using metal ink contains Ag nano-particles. Metal lines are fabricated by two types of printing methods. One is a conventional printing method which is able to quick fabrication of fine pattern line, but has various difficulties about thick and high resolution DPI(Dot per Inch) pattern lines because of bulge and piling up phenomenon. Another(Second) methods is sequential printing method which has a various merits of fabrication for fine, thick and high resolution pattern lines without bulge. In this work, conductivities of metal pattern line are investigated with respect to printing methods and pattern thickness. As a result, conductivity of thick pattern is about several  $\mu\Omega$ .

**Key Words** : Inkjet Printing, Ag Nano-particle, Sequential printing, Conductivity,