

### Preparation of conductive thin film by ITO colloid

김기영\*, 이성일  
한국생산기술연구원  
(kykim@kitech.re.kr\*)

ITO has been widely used as the material of transparent conductive film for its high conductivity and transparency. When properties of a substrate are easily changed by thermal treatment, ITO particles with preferential characteristics are manufactured and then dispersed on liquid, and used as colloid type. In this study, ITO nano particles were produced using co-precipitation method with indium-salt and tin-salt. ITO particles were dispersed to organic solvent to use it as coating solution in producing the conductive transparent thin film. The average size of primary particles of ITO was 20nm and the colloidal particle dispersed in solution was 50nm. The colloid on which ITO was dispersed coated on glass substrate by spinning, and to adhere ITO layer on glass substrate, a liquid of silica components was overcoated. As ITO content in colloid increased by 1~8% the surface resistance of coating film was reduced to  $5 \times 10^4$  from  $2 \times 10^5 \Omega/\square$ . And the surface resistance of glass substrate coated ITO colloid was increased as spinning rate increased.