

## PET 기판 위에 SiO<sub>2</sub> 버퍼층 도입에 따른 ITO 박막의 접착 및 전기적·광학적 특성 연구

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### A Study on Adhesion and Electro-optical Properties of ITO Films deposited on Flexible PET Substrates with SiO<sub>2</sub> Buffer Layer

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**Abstract :** Using an evaporation method, SiO<sub>2</sub> was deposited as a buffer layer between a flexible PET substrate and a ITO film deposited by DC magnetron sputtering and electro-optical properties were investigated with thickness variance of SiO<sub>2</sub> layers. After coating a SiO<sub>2</sub> layer and a ITO film, the ITO/SiO<sub>2</sub>/PET was heated up to 200 °C and the resistivity and the transmittance were measured by hall effect measurement system and UV/VIS/NIR spectroscopy. As a result of depositing a SiO<sub>2</sub> buffer layer, the resistivity increased and the transmittance and adhesion property were enhanced than ITO films with no buffer layers and the resistivity was lowered as SiO<sub>2</sub> thickness increased from 50 Å to 100 Å. It was found that the transmittance was independent of annealing temperature variance in 150 °C ~ 200 °C and the resistivity decreased as the temperature increased and especially decreasing rate of the resistivity was higher as the buffer layer thickness was thinner. So under optimized depositing of SiO<sub>2</sub> buffer layers and post-annealing of ITO/SiO<sub>2</sub>/PET, ITO films with enhanced adhesion, electro-optical properties can be obtained.

**Key Words :** ITO(Indium-Tin Oxide), PET, SiO<sub>2</sub> Buffer, Adhesion, Annealing