

## Improvement of stability of flexible transparent conductive films using overcoat layer based on hybrid composites

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Flexible transparent conductive materials are attracting much attention as next generation electronic materials. In particular, conducting polymers are studied as the most potent materials through inherent transparency and flexibility. However, there are difficulties in practical application because of low chemical stability and physical stability. Therefore, in this study, we propose a method of overcoat a layer prepared by hybrid composites on a flat conductive film coated on a substrate to improve the stability of flexible transparent conductive films. This layer improves chemical stability and scratch resistance by forming a network structure through the combination of silica sol and organic polymer. However, since this layer has an insulating property, it is impossible to move the current through the upper contact after application. Therefore, a small amount of conductive polymer PEDOT:PSS was added to provide conductivity. As a result, a flexible, transparent, conductive overcoat layer having high physical and chemical stability was manufactured.