Development of Ultra-high Hard Organic-inorganic Hybrid Coating Film with High Transparency and Flexibility

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Recently, as display devices become thinner and slimmer, enormous attention has been paid to ultra-hard and hard-coated optical films that will replace plastic protective films. Particularly, research and development of films that provide uniformly high hardness and transmittance as well as flexibility and durability is the most needed area of research for commercialization.

In this study, research and development of an ultra-hard hard-coated film was conducted using a PET substrate, which provides hardness of over 5H, flexibility of over 60°, and transmittance of over 93%. As a result of the study, a hard-coating solution was made by dispersing nanosilica to develop the film with the desired hardness, flexibility, and transmittance.

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