

Titanium oxide nanoparticle hybridized liquid crystal display in vertical alignment

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Abstract : In recent years, the merging of nanomaterials and nano-technology into electro-optic (EO) device technology such as liquid crystal displays (LCDs) has attracted much attention because of their unique electro- and magneto-optic properties and novel display applications¹. One example of hybrid LC-inorganic systems is semiconductor nanorods added to LC for their strong reorientation effect² and tunable refractive index³. Doping of nanoparticles in LC or polymers can lead to changes in performance characteristics such as electro-optical, dielectric, memory effect, phase behavior, etc. Due to the tunability of LCDs with mixed inorganic materials, low voltage operation of a LC system can also be achieved using the significant electro-optical effect achieved through suspension of ferroelectric nanoparticles in NLC.

Key Words : nanomaterials, liquid crystal displays, low voltage operation

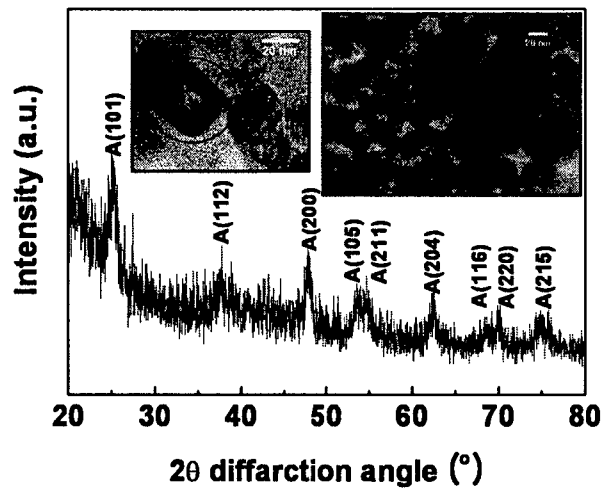


Figure 1. XRD pattern of synthesized TiO₂ nanoparticles. The insets show the HRTEM micrograph of synthesized TiO₂ nanoparticles.

참고 문헌

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