

Ultrathin, Transparent, Thermally-insulated, and Energy-efficient Flexible Window Using Coatable Chiral-nematic Liquid Crystal Polymer

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Fabrication process

A polyethylene terephthalate (PET) film was cleaned and spin-coated with a planar polyimide alignment layer (SE6514, Nissan) and subsequently baked at 180 °C for 30 min. To confirm the planar alignment of the deposited layer, a rubbing process was applied. To coat the polymer CLC mixture, a doctor blade coating process was applied to the film at an appropriate speed. Subsequently, the film was exposed to UV light (Newport Co., Ltd.) emitted from a mercury arc lamp (Osram HBO 103 W/2) with an intensity of 0.1 mW/cm² for 30 min. Finally, the samples were post-cured for 10 min under high UV flood exposure at an intensity of 20 mW/cm².

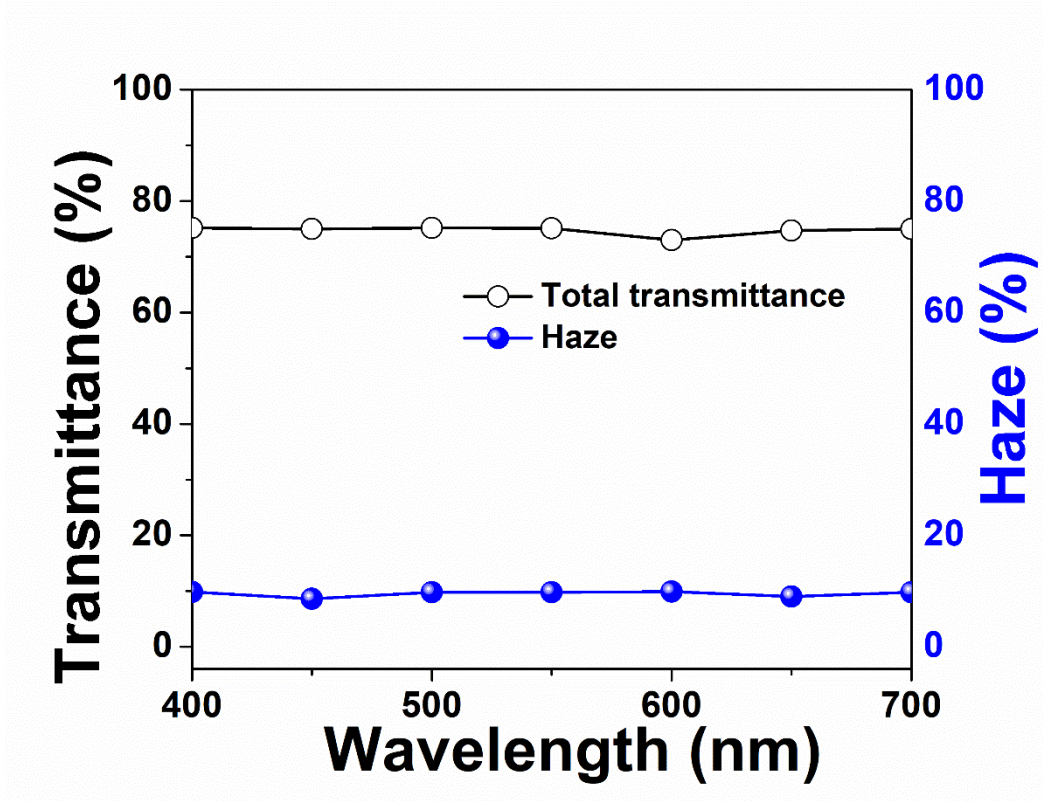


Figure S1 Total transmittance and haze values of the polymer CLC film using polyimide alignment layer.