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Abstract
Uniform polymer microsphere were prepared by using dispersion polymerization and the CdS, ZnS nanoparticles were deposited on the surface of polymer by using the chemical precipitation method in this study. Those composite particles were used to the light diffusion sheet of backlight modulus in TFT display. The results show that those diffusion sheet have good light diffusion and transmission properties. A small amount of diffuser has 65% light dispersion level with 70% light transmission. The UV light absorption properties of light diffusion sheet were identified by using UV/Vis photometer and the result shows the light diffusion sheet could absorb part of UV light. Furthermore, the polymer microbeads contained the TiO2 nanoparticles were also prepared via the surface modification deposition methods and applied in the light diffusion sheet in this study. The light dispersion efficient of diffusion sheet is increased with the amount of diffuser, while the degree of light transmission is decreased. The best light dispersion efficient and light transmission of the diffusion sheet is 61% and 68~70% light transmission. Among those diffusers, PGAT4 series, which were prepared by using polymerization with tetrabutyltitanate, glycidyl methacrylate and styrene, are the best light diffuser. Those light diffuser also shows a good UV light absorption properties as it is identified by using UV/vis photometer. This kind of UV absorption behavior can be efficiently descended the operation temperature of backlight module.
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