Optimization design of LCD light guide plate

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Abstract

This study proposes an optimization approach for designing a dot-pattern LCD light guide plate
(LGP) using Taguchi method, Back-propagation neural networks and genetic algorithms (GA) to obtain excellent
luminance uniformity and illumination. Taguchi orthogonal array was employed to arrange the experimental
work and to calculate the S/N ratio to determine the initial dot pattern distribution of LGP. The
back-propagation neural network was employed to construct the optical predictor. Finally, the optical predictor
was along with GA to search for optimal distribution of the hemispheric microstructure sizes.

Keyword：Taguchi Method; Back Light Module; Back-Propagation Neural Network; Genetic Algorithms;