A Study of Mask Re-allocation Problems in TFT Array Process

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ABSTRACT

The production process of TFT-LCD (Thin Film Transistor Liquid Crystal Display) can be divided into three major sections: the TFT Array process , the Cell process, and the Module process. Due to the long production process, the array process becomes a bit of a bottleneck for the three sections. Each type of mask has certain collocation restrictions on the machine; thus, the question of how to sufficiently utilize existing machine equipment so as to both enhance productivity and reduce costs is a priority if the TFT Array process is to be improved. Since relevant literature in the past has rarely considered the sequential relationship between the machine and the mask allocation, this study takes this relationship into consideration so that the arrangement relationship between the mask and the machines of the TFT-array can be understood. The method of mathematical planning is used in order to derive the solution. Through the method of experimental design, each performance is explored and multiple comparisons are used to find the reallocation interval time for a better performance index. Except for the remaining capacity of the machines, the reallocation interval time and other performance index show a significant relationship.

Keywords : TFT-LCD, TFT-array ,mask allocation.

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