

SLS Crystallization Process Development for SOG device

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The Sequential Lateral Solidification (SLS) Technique has been applied for 2.0" qVGA SOG device. SLS was adapted because of its high throughput and wide process window. The world first SLS equipment of mass production scheme was used for the SLS process. Its throughput is 30 sheets/hour and process window of laser energy density is about 200mJ/cm². Active and gate oxide thickness was found as critical factors for TFT performance, mobility and V_{th}. Mobility of 200cm²/Vsec and 100cm²/Vsec was achieved by 2 shot SLS process for N-TFT and P-TFT, respectively. As for V_{th}, 1.5V and -1.5V was achieved. Therefore, we could fabricate 2.0" 6-bit SOG device of qVGA resolution by SLS crystallization process.

To be presented in the Active-Matrix LCDs (LTPS).

• Poster presentation