Excimer Laser-induced Crystallization of Si Films for Manufacturing LTPS TFT-based Displays

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Abstract

Laser-irradiation-induced crystallization of as-deposited amorphous precursor films constitutes an integral step in fabricating LTPS TFTs. Consideration of various factors leads one to conclude that, for display manufacturers, choosing how to crystallize the films can be identified as being tactically and strategically significant. This paper will begin by reviewing the fundamental aspects of laser crystallization, and then present noteworthy advances and progress, which have recently been accomplished in the field. In particular, we will focus on communicating the evolving status associated with the sequential lateral solidification (SLS) method, which can be presently identified as the most strategically enabling crystallization method.