

# **Nickel Induced Lateral Crystallization of Amorphous Silicon Studied by SPESM**

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The crystallization of amorphous silicon has been a subject of research because of its scientific interest and technological importance. Since Low temperature polysilicon (LTPS) technology is the novel technology specific for Display application. Recently, metal induced lateral crystallization (MILC) of amorphous silicon (a-Si) has been studied intensively. It is proven that MILC is a technique for lowering the crystallization temperature of a-Si. The application of MILC can be used in fabricating Silicon Thin Film Transistor (TFT). The studies show that MILC enables reduced-temperature solid-phase crystallization, which leads to the realization of TFTs at a significantly reduced process temperature with improved characteristics. However, the undesirable contamination of metals to the poly-Si thin film is a concern for practical applications. Thus, it is interesting to study the interaction of metal patterned film with a-Si film. In our report, the reaction of Ni metal with a-Si thin film has been studied with SPESM (Scanning Photoelectron SpectroMicroscopy). Lateral variations in the local chemistry of the MILC of a-Si were directly imaged. The information on the lateral distribution of the different chemically-shifted phases as function of the local chemical environment for each phase was also obtained.