

Pd와 Ni의 혼합물을 촉매로 이용한 금속 유도 측면 결정화에 관한 연구
A Study on Pd/Ni Mixed Metal Induced Lateral Crystallization

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It has been known that Pd-MILC shows much faster and lower temperature crystallization than Ni-MILC but it can not be put into practice due to the quality issue of thus fabricated poly crystals. In this study, addition of Pd into Ni-MILC has been attempted in order to take advantages of the Pd-MILC without sacrificing of the Ni-MILC TFTs.

It turns out that when 5% of Pd has been added to Ni for MILC, MILC growth rate increases two – three times faster than pure Ni-MILC. The MILC growth rate shows monotonic increase with increase the amount of Pd in Ni up to 50%. Even when small amount of Pd was added to Ni like 5%, crystallization phenomenon already follows the way of Pd-MILC. The Poly-TFT thus fabricated shows lower leakage current than pure Ni-MILC TFT without losing any amount of on-current. This fact is very important in low temperature poly-TFTs because MILC-TFTs, especially suffer from the relatively high leakage current.

The results, we believe, definitely open the possibility of formation of poly TFTs on the plastic substrate in a near future and the details of the electrical properties of TFTs as well as crystallization phenomenon of mixed metal induced lateral crystallization will be presented.