

## Chapter 9

### Future Work

Although multi-channel poly-TFT with nano-wires devices have excellent performance. The entire mobility in this thesis by solid phase crystallization ( $\sim 30 \text{ cm}^2/\text{Vs}$ ) and pattern-dependent metal-induced lateral crystallization ( $\sim 40$  to  $100 \text{ cm}^2/\text{Vs}$ ) are still too low, relative to commercial excimer laser crystallization.

We suggest the valuable future work, which is combining this novel nano-wires poly-TFT with new crystallization methods, such as Super Lateral Growth (SLG), Sequential Lateral Solidification (SLS), CW-Laser Lateral Crystallization, and Selectively Enlarging Laser Crystallization (SELAX). The device should be expected as well as Si single crystalline behavior.

On the other hand, although ten nano-wires poly-TFTs (M10) shows the best performance than others TFTs. The optima device channel width and channel number should be furthermore investigation carefully.