

Improvement of solution processed Indium-Zinc Oxide thin film transistors by additive Antimony

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Amorphous metal-oxide thin-film transistors (TFTs) have attracted considerable interests and these are worthy of close attention for flexible display due to reasonable electrical property at low temperature process. Although the conventional deposition in vacuum atmosphere such as PVD (Physical vapor deposition) is the most favorable process to make the active layer, vacuum based processes have several issues such as expensive equipment and complex processes.

For these reasons, the solution based processes to form the active layer are examined actively in recent years. However, the devices which are fabricated by solution process are more vulnerable than vacuum process based devices under positive or negative biased conditions.

In this paper, we investigate the material for improvement of performance and stability for solution based indium zinc oxide active layer. We used an appropriate material which is called antimony (Sb) and observed the effect of antimony for performance and stability of indium zinc oxide thin film transistor.

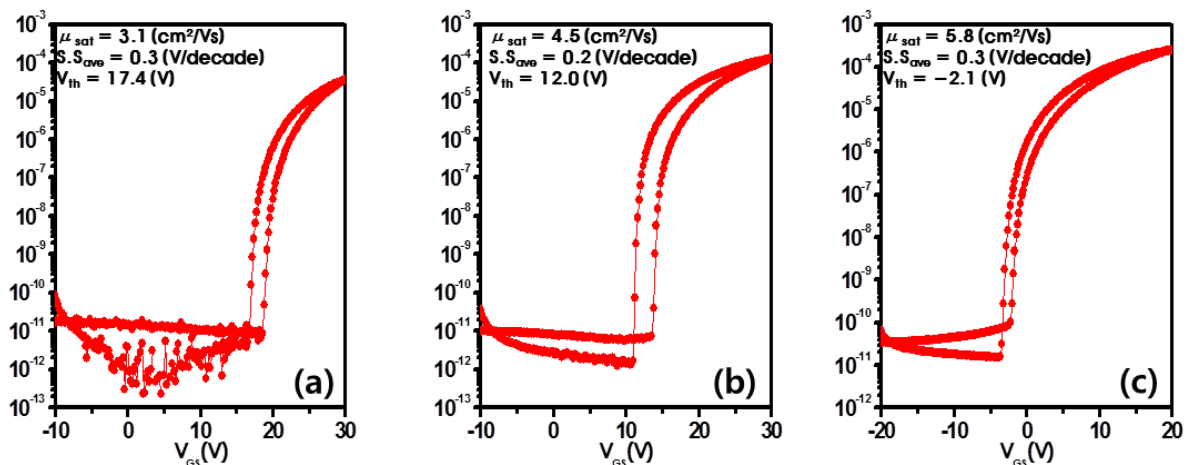


Fig. 1. Representative transfer characteristics of the (a) InZnO. (b) 0.1wt% Sb-InZnO (c) 0.15wt% Sb-InZnO

References

1. H. J. Kim and J. K. Jeong, PSS-Rapid Research Letters **8**, 924 (2014)