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Supporting Information

Tailoring Thin Film Transistor Performance through Plasma Reactant Manipulation in Indium Oxynitride Films

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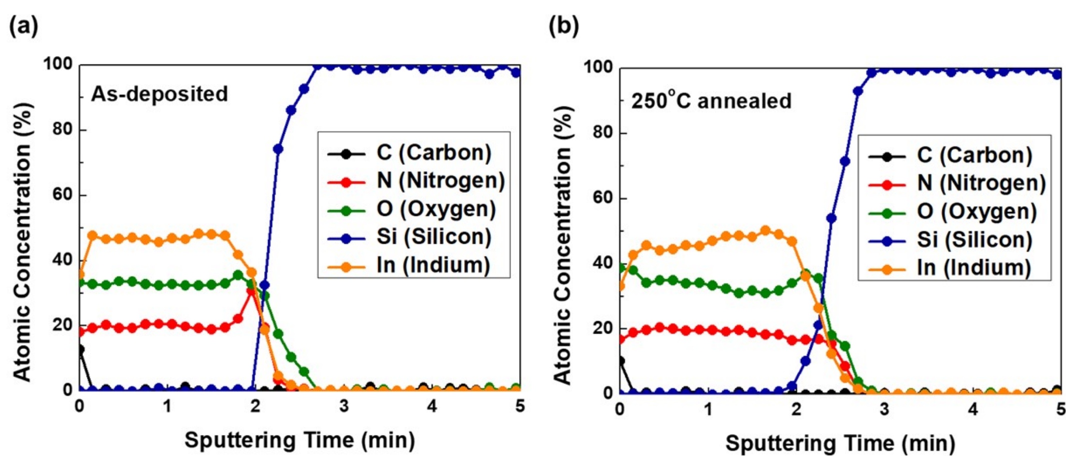

Figure S1. Atomic concentration profiling as a function of depth of InON thin films depending on the temperature of post-annealing process (a) as-deposited and (b) 250 ℃.

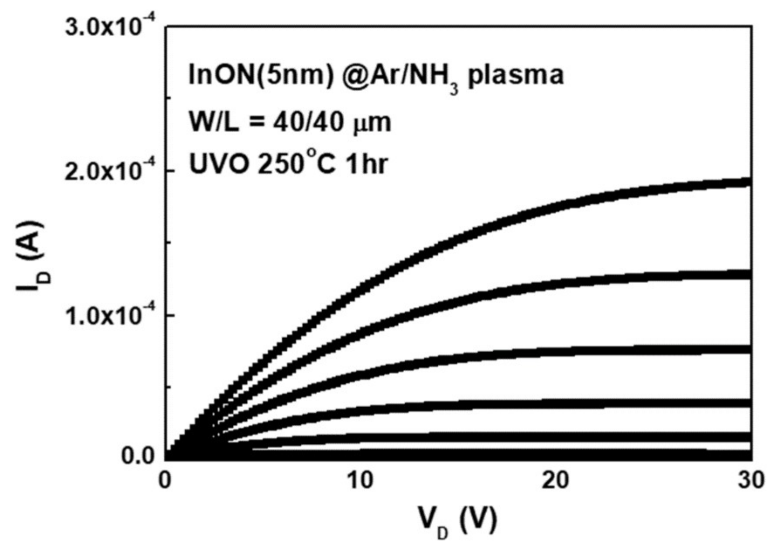

Figure S2. The output curve of InON TFTs with NH_3 plasma condition.

	Indium (%)	**Oxygen (%)**	**Nitrogen (%)**	**Carbon (%)**
N_2 plasma	**48.7**	**32.4**	**18.9**	**N/D**
NH_3 plasma	**54.1**	**21.0**	**24.9**	**N/D**

Table S1. Atomic concentration of InON thin film grown at 250°C with plasma power of 100W respect to different nitrogen source using XPS analysis.

	XRR data density (g/cm^3)	**O (%)**	**N (%)**	**Theoretical density (g/cm^3)**	**Difference (%)**
N_2 plasma	**6.58**	**30.4**	**21.8**	**7.03**	**-6.34**
NH_3 plasma	**6.86**	**19.7**	**26.0**	**6.97**	**-1.57**

Table S2. The film density measured by XRR and calculated theoretically of InON thin film respect to nitrogen reactant source. (Theoretical density : considering actual composition and reference density value of In_2O_3 (7.18 g/cm^3) and InN (6.81 g/cm^3).