Supporting Information for:

High Mobility Polycrystalline Indium Oxide Thin-Film Transistors by means of Plasma-Enhanced Atomic Layer Deposition

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Fig. S1. Indium oxide film growth rate as a function of the reactant, O_2 plasma, pulsing time



Fig. S2. Film thickness of the indium oxide deposited by PEALD as a function of the number of ALD cycles.



Fig. S3. N 1s peak of indium oxide films measured by XPS with various deposition temperature. No nitrogen is detected at all deposition temperatures.



Fig. S4. XPS spectra of indium oxide films deposited at various temperatures for In 3d peak after annealed under O_2 at 350°C. As deposition temperature increases, the peak is slightly shifted to a lower energy, indicating more indium atoms forms an oxygen deficient in indium oxide films.



Deposition temperature (°C)	O-M (%)	O deficient (%)	О-Н, О-С (%)
100	43.47	22.45	24.06
150	33.33	42.73	23.93
200	29.38	51.54	19.07
250	19.75	58.13	22.07

Fig. S5. The deconvoluted O 1s XPS results of the as-deposited indium oxide films deposited at (a) 100°C, (b) 150°C, (c) 200°C, and (d) 250°C. Area of each graph, which is indicated in below table, denotes the concentration of each bonding such as O-M, O deficient, and O-H, O-C bonding.

Deposition temperature (°C)	ln (%)	O (%)	Si (%)	C (%)
100	35.03	59.21	2.17	3.59
150	35.67	59.15	1.74	3.44
200	37.06	60.39	2.55	-
250	36.70	60.19	3.11	-

Table S1. The percentage of each atom in as-prepared InO_x films calculated from XPS survey spectra.