

Electronic Supplementary Information for

**Solution Processed F Doped ZnO (ZnO:F) for Thin Film Transistors
and Improved Stability Through Co-Doping with Alkali Metals**

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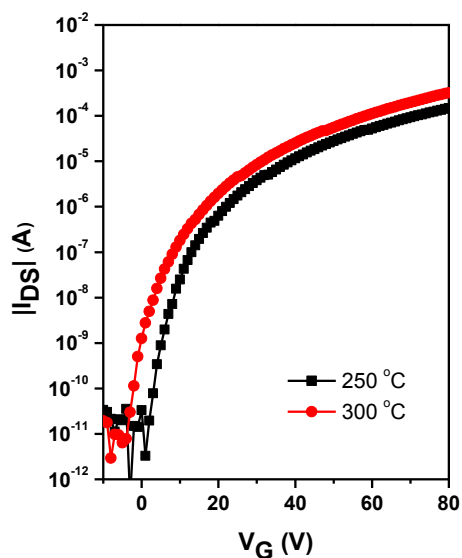


Fig. S1 The transfer characteristics of the F doped ZnO TFTs under different annealing temperatures.

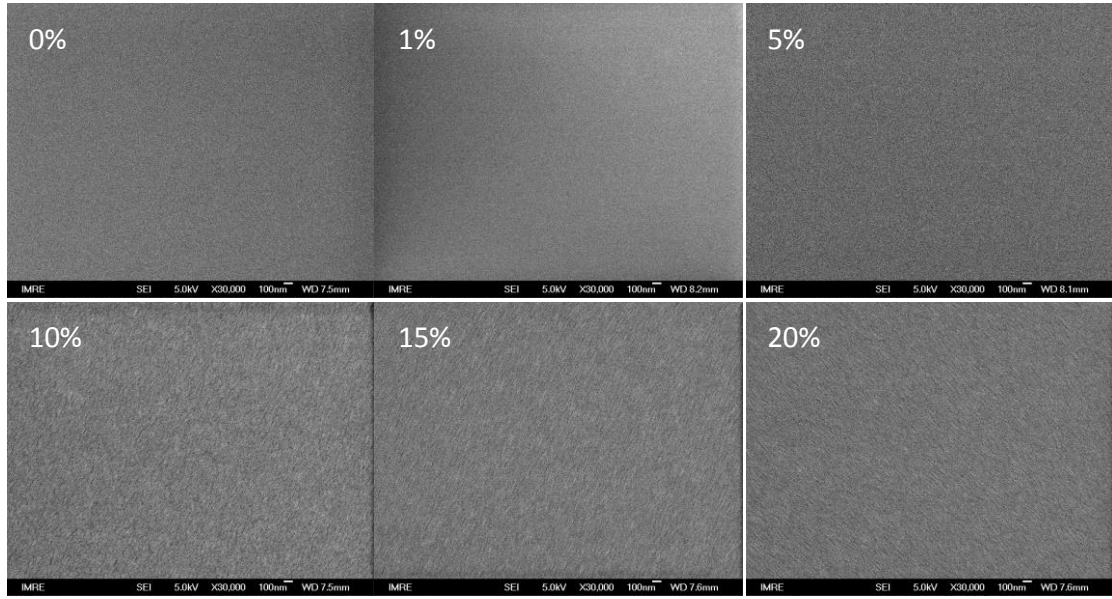


Fig. S2 The FESEM images of the F-doped ZnO films with different molar ratios.

Table S1. The electrical characteristics of solution processed Li doped ZnO TFTs as a function of the doping content.

Li content (ratio)	$\mu[\text{cm}^2\text{V}^{-1}\text{s}^{-1}](\mu_{\text{max}})$	V_T [V]	On/off
1%	1.8(3.1)	27-31	10^7
5%	4.8(5.7)	27-32	10^7
10%	5.3(6.5)	28-33	10^7

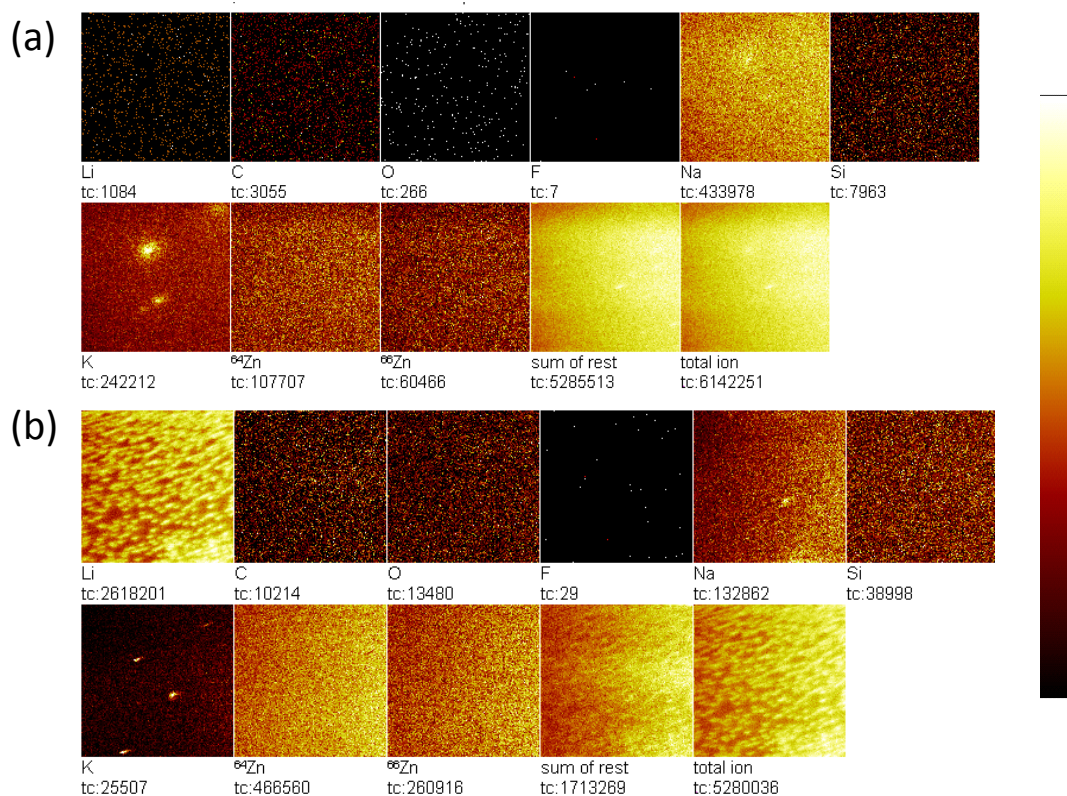


Fig S3. The TOF-SIMS results of the pristine (a) and 10% LiF doped ZnO (b) after thermal annealing at 300 °C for 1h in air.

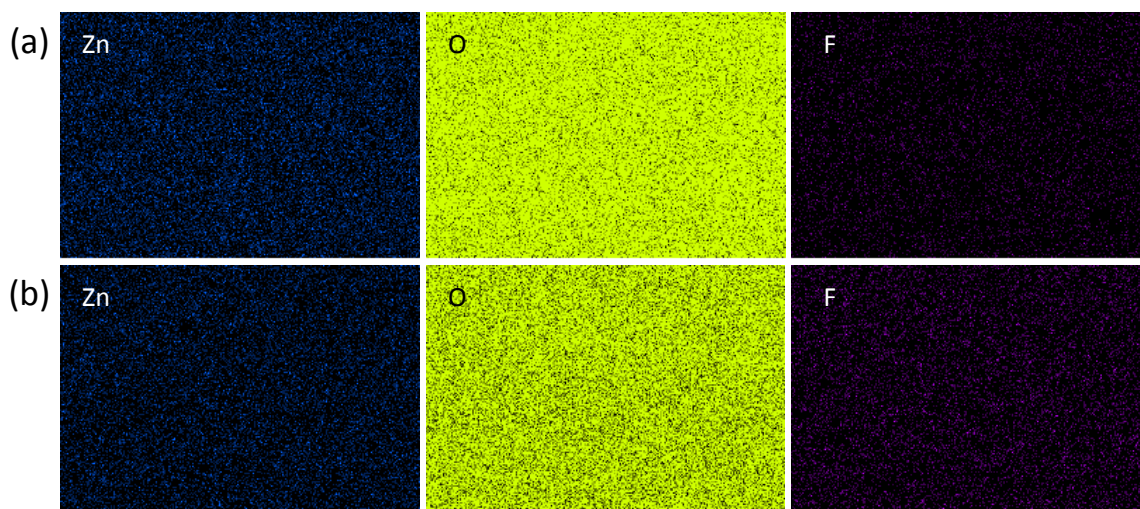


Fig. S4 The EDX elemental mapping of Zn, O, F for the pristine (a) and 10% LiF doped ZnO (b) after thermal annealing at 300 °C for 1h in air.

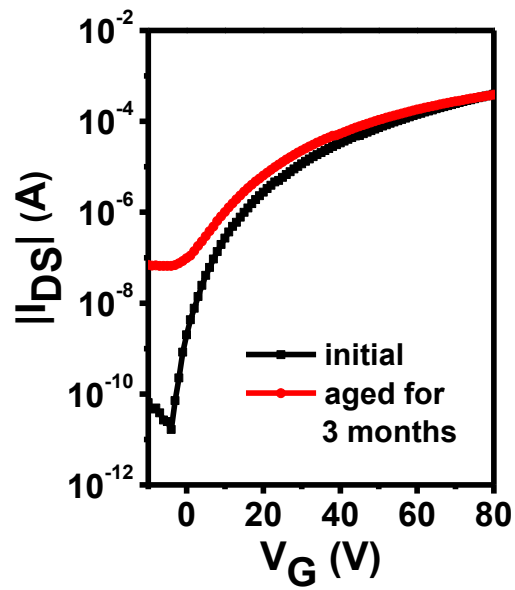


Fig. S5 The transfer characteristics of the F doped ZnO TFTs with aged precursor solution.