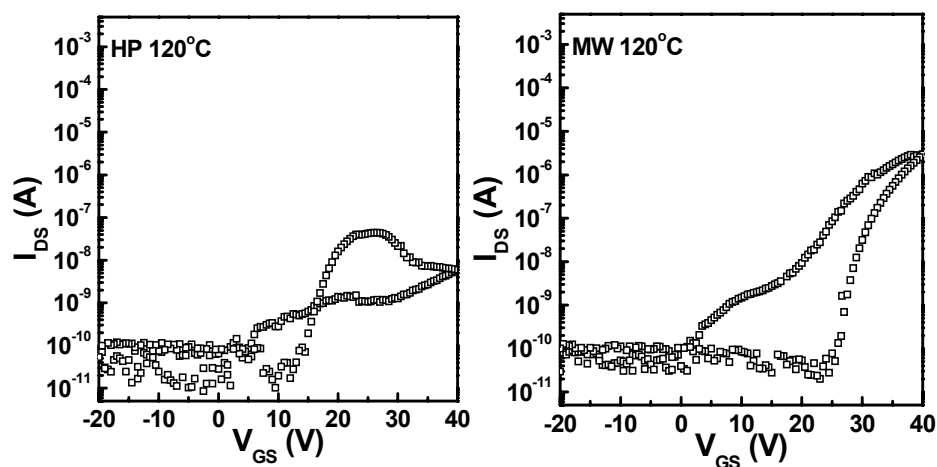


Electronic Supplementary Information

High-Performance Low-Temperature Solution-Processable ZnO Thin Film Transistors by Microwave-Assisted Annealing

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Annealing Method	Temperature (°C)	Annealing time	Mobility (cm ² V ⁻¹ s ⁻¹)	Threshold voltage (V)	On/off current ratio
Hotplate	120	30 min	0.00004	18.97	10 ²
Microwave	120	30 min	0.035	22.49	10 ⁴

Figure S1. Transfer characteristics of hotplate- and microwave-annealed ZnO-TFTs fabricated on SiO₂/n⁺-Si substrates at 120°C.

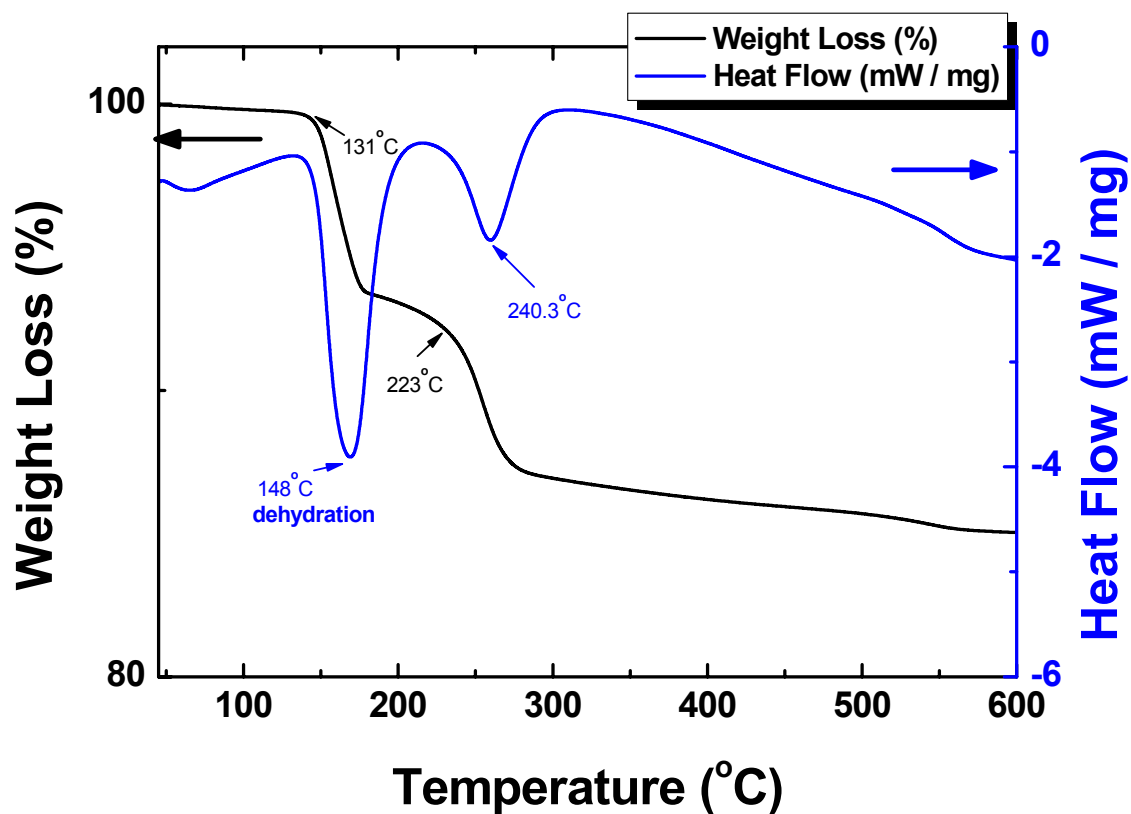


Figure S2. Thermogravimetric analysis (TGA) and differential scanning calorimetry (DSC) curves of a dried $\text{Zn(OH)}_x(\text{NH}_3)_y^{(2-x)+}$ gel.

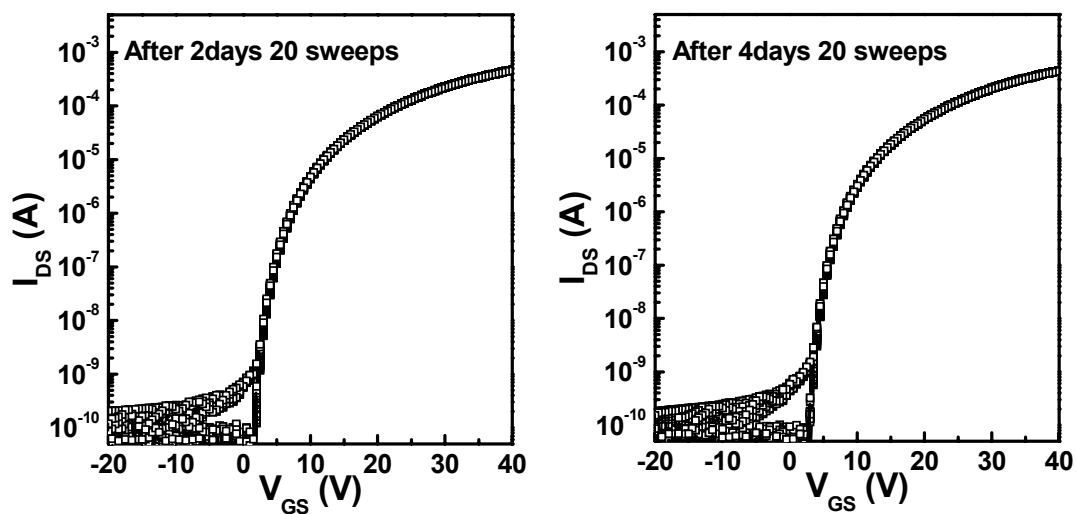
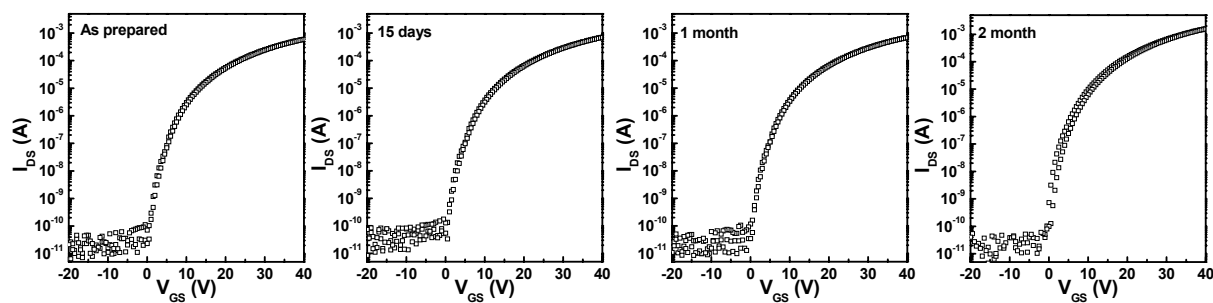


Figure S3. The transfer curves of ZnO TFTs microwave-annealed at 320°C for 30 min with 20 I-V sweeps. TFTs were fabricated on $\text{SiO}_2/\text{n}^+\text{-Si}$ substrates.



Samples	Temperatur (°C)	Mobility (cm ² V ⁻¹ s ⁻¹)	Threshold voltage (V)	On/off current ratio
As prepared	320	5.67	2.43	10 ⁸
15 days	320	5.72	2.37	10 ⁸
1 month	320	5.64	2.46	10 ⁸
2 month	320	5.71	2.41	10 ⁸

Figure S4. Air stability test results for the transfer curves of ZnO TFTs microwave-annealed at 320 °C for 30 min up to 2 months following preparation. TFTs were fabricated on SiO₂/n⁺-Si substrates.

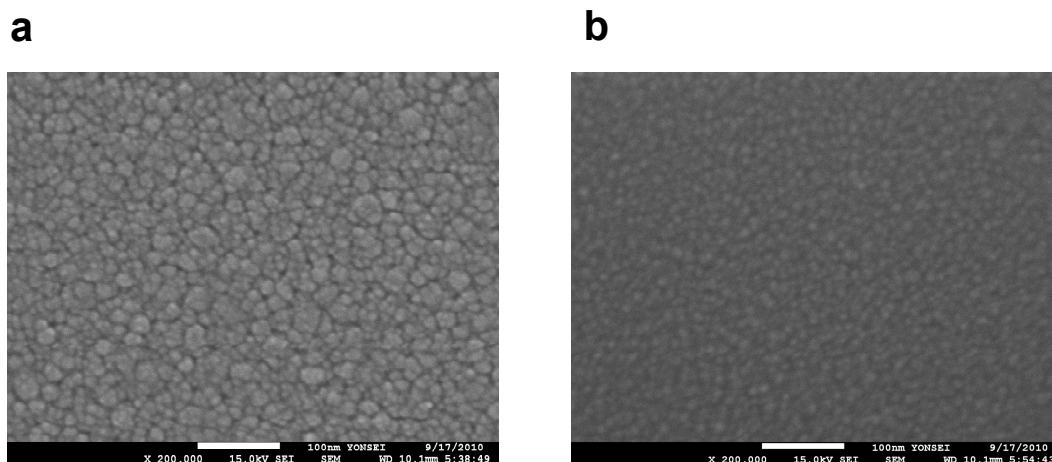


Figure S5. Representative SEM top-view images of ZnO by the two annealing methods at the substrate temperatures of 320 °C: (a) microwave annealing and (b) hotplate treatment.