Supporting Figures

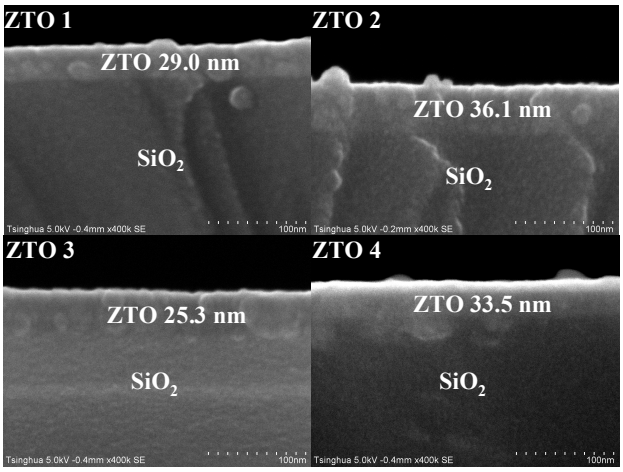
Fig. S1. High resolution SEM images of the sections of ZTO films: ZTO 1 was derived from $Zn(CH_3COO)_2 \cdot 2H_2O$ and $Sn(C_8H_{15}O_2)_2$ dissolved in 2-methoxyethanol; ZTO 2 was derived from $Zn(CH_3COO)_2 \cdot 2H_2O$ and $Sn(CH_3COO)_4$ dissolved in 2-methoxyethanol; ZTO 3 was derived from $Zn(CH_3COO)_2 \cdot 2H_2O$ and $SnCl_2$ dissolved in 2-methoxyethanol; ZTO 4 was derived from $Zn(CH_3COO)_2 \cdot 2H_2O$ and $Sn(OC_3H_7)_4$ dissolved in 2-methoxyethanol.

Fig. S2. XPS spectra of ZTO films: (a) XPS spectra of ZTO 1 thin film; (b) XPS spectra of ZTO 2 thin film; (c) XPS spectra of ZTO 3 thin film; (d) XPS spectra of ZTO 4 thin film.

Fig. S3. AES spectra of ZTO films: (a) AES spectra of ZTO 1 thin film; (b) AES spectra of ZTO 2 thin film; (c) AES spectra of ZTO 3 thin film; (d) AES spectra of ZTO 4 thin film.

Fig. S4. The output characteristics of ZTO thin films based FETs: (a) output characteristics of ZTO 1-FET; (b) output characteristics of ZTO 2-FET; (c) output characteristics of ZTO 3-FET; (d) output characteristics of ZTO 4-FET.

Fig. S5. The transfer characteristics between V_G and SQRT of I_D of ZTO thin films based FETs.



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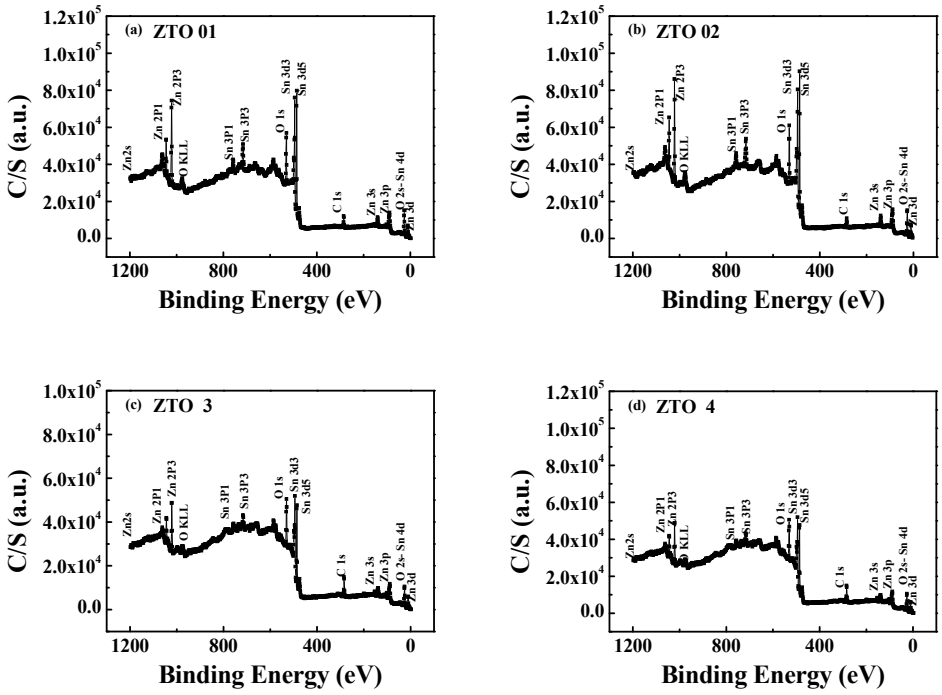

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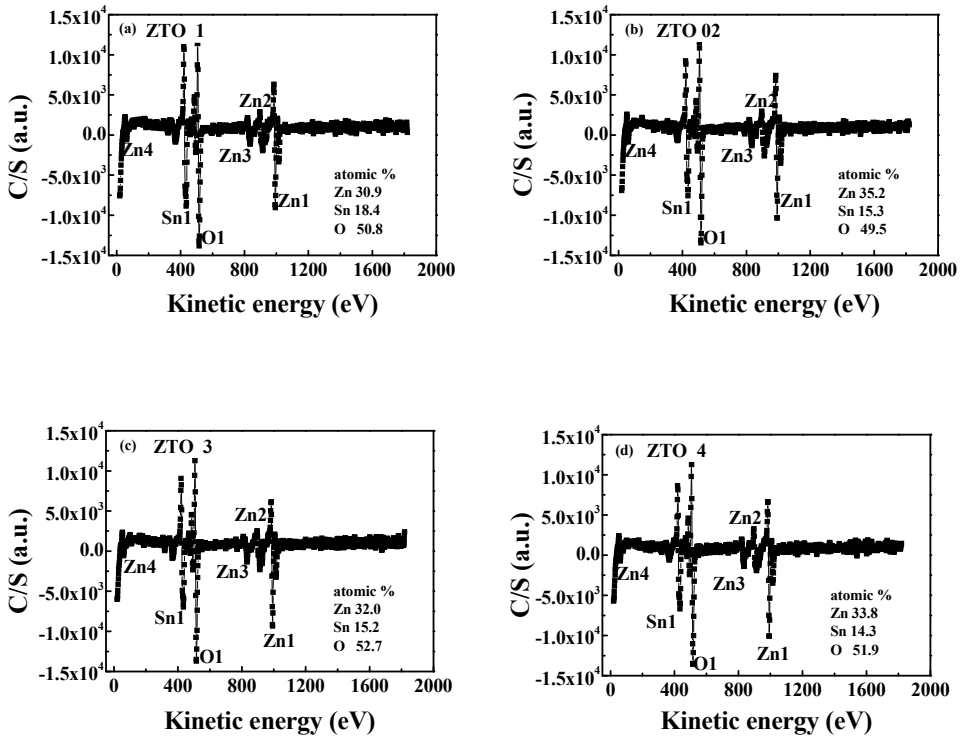

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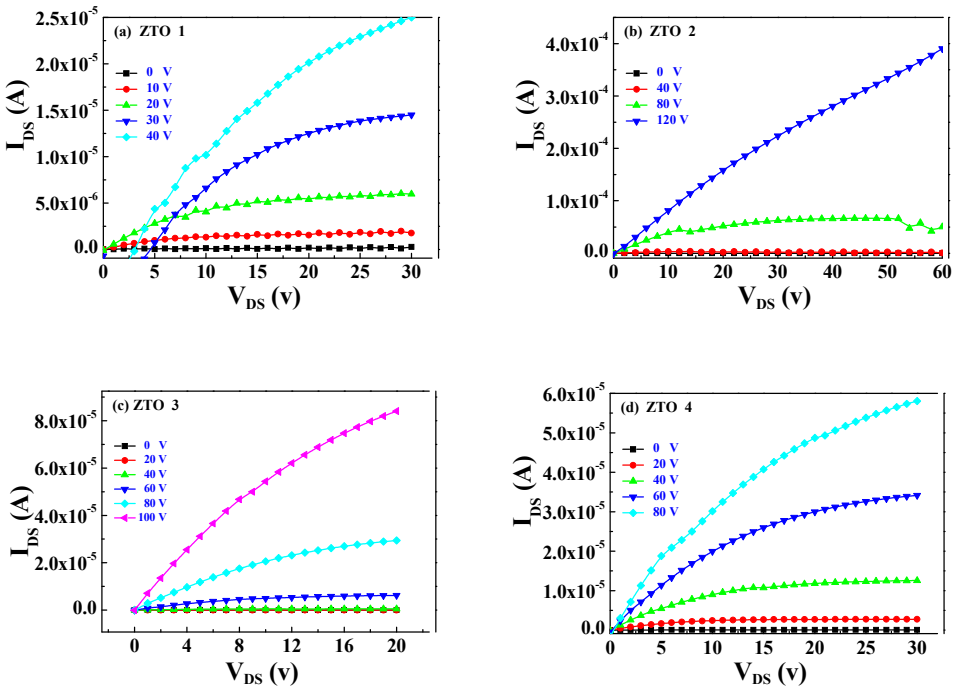

Fig. S4. The output characteristics of ZTO thin films based FET devices: (a) output characteristics of ZTO 1-FET; (b) output characteristics of ZTO 2-FET; (c) output characteristics of ZTO 3-FET; (d) output characteristics of ZTO 4-FET.

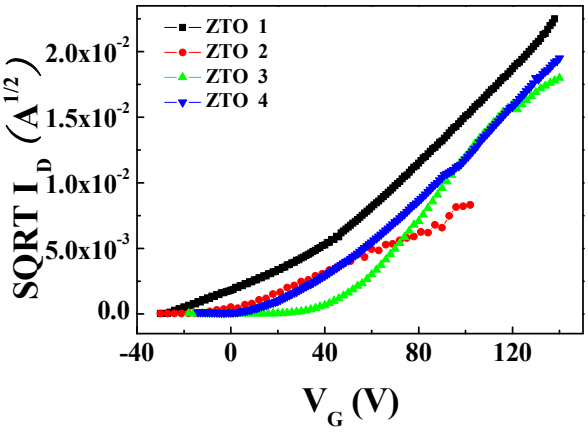

Fig. S5. The transfer characteristics between V_G and SQRT of I_D of ZTO thin films based FET devices.