Corrections to "Low-Voltage IGZO TFTs Using Solution-Deposited OTS-Modified Ta_2O_5 Dielectric"

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***Abstract*— Unfortunately, there are a few typographical errors in the above article. First, (4) is incomplete and the corrected formula is given here. Second, the unit of the interfacial trap density (N_{it}) is corrected in three places. Third, the caption of Fig. 6 is corrected to accurately reflect the device structure. The corrections have no influence on the discussion and conclusions of the paper.**

***Index Terms*— Anodization, indium gallium zinc oxide (IGZO), low-voltage thin-film transistors (TFTs), self-assembled monolayer (SAM), tantalum pentoxide.**

THERE are a few typographical errors in our paper [1]. First, (4) that allows calculation of the interfacial trap density (N_{it}) should be written as [2], [3]

$$N_{it} = \left(\frac{SS\log(e)}{kT/q} - 1\right)\frac{C_G}{q^2} \tag{4}$$

where C_G is the gate capacitance density, q is the electron charge, k is Boltzmann's constant, T is the temperature, and SS is the subthreshold swing. The N_{it} values given in [1] were calculated using the abovementioned formula and are correct.

Second, the unit of N_{it} in [1, p. 4] should be cm^{-2} eV^{-1}. Accordingly, N_{it} was calculated to be 4.1×10^{12} cm^{-2} eV^{-1}, 4.4×10^{12} cm^{-2} eV^{-1}, and 2.1×10^{12} cm^{-2} eV^{-1} for devices A, B, and C, respectively.

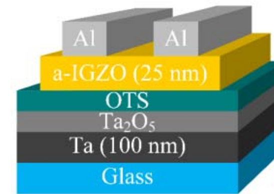

Fig. 6. 3-D schematic of the fabricated Ta/Ta_2O_5/OTS/IGZO/Al TFTs using SAM-modified Ta_2O_5 gate dielectric.

Third, the description of the device structure in the caption of Fig. 6 is not accurate and is different from the description of the device structure used in the text. Fig. 6 with the correct caption is shown here.

The corrections have no influence on the discussion and conclusions of the paper.

References

[1] N. Mohammadian, B. C. Das, and L. A. Majewski, "Low-voltage IGZO TFTs using solution-deposited OTS-modified Ta_2O_5 dielectric," *IEEE Trans. Electron Devices*, vol. 67, no. 4, pp. 1625–1631, Apr. 2020, doi: 10.1109/TED.2020.2976634.

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