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Corrigendum

Corrigendum to “Atomic layer deposition of titanium dioxide films using a metal organic precursor ($C_{12}H_{23}N_3Ti$) and H_2O (DI water)” [J. Alloy. Compd. 857 (2021) 157931]

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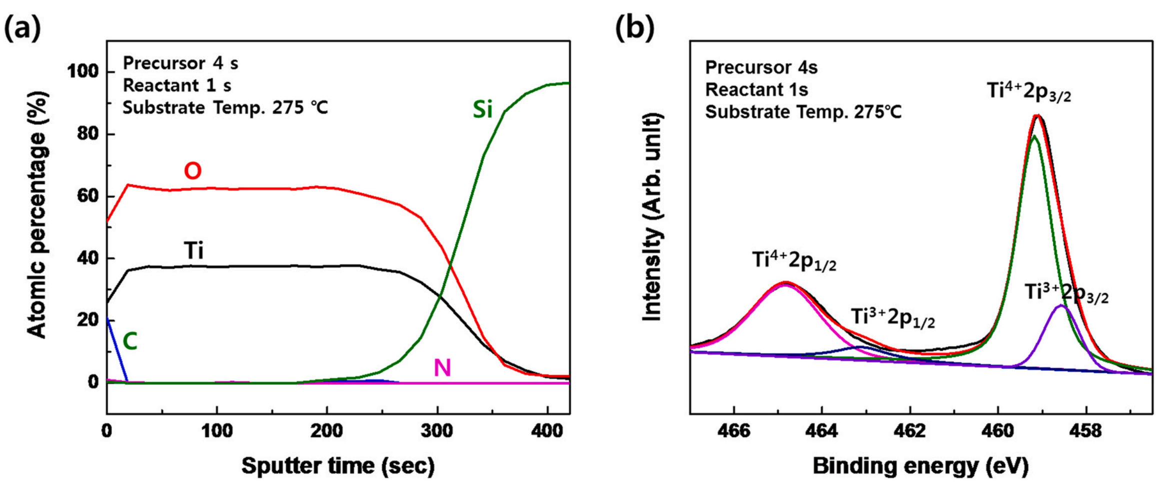
Correction contents: In the contents of the thesis, the Ti 2p XPS data is corrected as follows, and the binding energy of Ti^{3+} 2p1/2 peak is corrected to 463.2 eV.

Additionally, Fig. 6 also wants to change to the figure below.

Fig. 6. (a) XPS depth profile of the TiO2thinfilm, (b) Deconvolution of Ti 2p peaks.

The authors regret “insert corrigendum text”.



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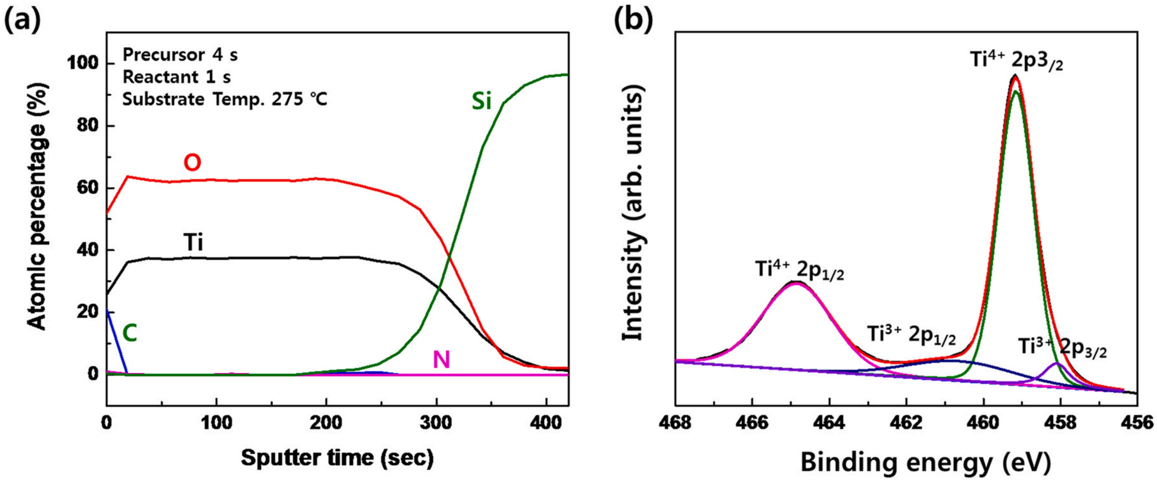

Fig. 6. (a) XPS depth profile of the TiO_2 thin film, (b) Deconvolution of Ti 2p peaks.

The results in Fig. 6 (a) can be used to check for impurities in the TiO_2 thin film. The Ti:O ratio is maintained at around 1:1.8. Other impurities, such as carbon and nitrogen, do not exist in the thin film. The presence of carbon on the surface of the thin film surface is the diffusion of organic matter in the air as the thin film is exposed to the air. In other words, the XPS depth profile data confirm that a pure TiO_2 thin film has been deposited.

Additionally, deconvolution was performed to check the binding state of each element. As shown in Fig. 6 (b), the peak of Ti 2p is separated by three peaks, with the Ti^{4+} $2p_{1/2}$ peak (464.8 eV) and Ti^{4+} $2p_{3/2}$ (459.1 eV) peak from the typical TiO_2 film separated by the main peak. The Ti^{3+} $2p_{1/2}$ peak (463.2 eV) and Ti^{3+} $2p_{3/2}$ peak (458.2 eV) are also separated. The binding energy difference between the separated Ti^{4+} $2p_{1/2}$ peak (464.8 eV) and Ti^{4+} $2p_{3/2}$ (459.1 eV) was 5.9 eV, similar to the difference between the previously reported Ti^{4+} $2p_{1/2}$ peak and Ti^{4+} $2p_{3/2}$ peak. It is reported that the Ti^{3+} $2p_{1/2}$ (463.2 eV) peak and Ti^{3+} $2p_{3/2}$ (458.2 eV) further separated because the surface is etched and analyzed thinly during the XPS analysis, so TiO_2 is deoxidized by the impact of Ar ions (28–30). The XPS data of O 1s. Here, peaks representing Ti-O (529.9 eV) binding were mainly found (data not shown) (30). In other words, looking at Ti 2p and O 1s XPS spectra, we can confirm that a pure TiO_2 thin film has been formed.

The authors would like to apologize for any inconvenience caused.