Correction to: Contamination of TiO₂ thin films spin coated on borosilicate and rutile substrates

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The authors wish to state explicitly that all of the data for the rutile thin films deposited on (001) oriented rutile substrates are for a single control sample and have been included in this article [1] solely for the purpose of comparative assessment. All of the rutile data been published in the preceding publication [2].

In addition, the data in Table 1 actually are the XPS data for [3]. This mistake can be verified by examining the original Ph.D. thesis (pp. 83, 84), which is available online at [4].

A revised Table 1 with the correct data follows.

And finally, the spelling of the surname of the third author of the article [1] is incorrect. Instead of *Shamiri*, the spelling should be *Shahmiri*.

The original article can be found online at <https://doi.org/10.1007/s10853-019-04282-1>.

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Table 1 Ionic species and oxygen vacancy concentrations (at%) in TiO₂ thin films spin coated on borosilicate glass and single-crystal (001) rutile substrates annealed for 8 h at 200 °C and 550 °C

Parameters	Normalized to remove C and OH levels												Calculated $[V_{\text{O}}^{\bullet\bullet}]$			
	TiO ₂ matrix [Ti] and [O]												Normalized ^c $[\text{Ti}^{4+}]$ and $[\text{Ti}^{3+}]$			
	Contaminants [M]															
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		
Substrate	T _{Anneal} (°C)	MB testing	Ti ^{4+/3+}	O ²⁻ (Exp.) ^a	O ²⁻ (Calc.) ^b	Na ⁺	Ca ²⁺	Mg ²⁺	Si ⁴⁺	O (Ti ⁴⁺)	O (Ti ³⁺)	O (Ti ³⁺) (Max.) ^d	O ²⁻ (Calc.) ^e	O ²⁻ (Calc.) ^f		
Borosilicate glass	200	Before	31.84	62.23	58.19	3.40	0.09	0.13	1.06	91.61	8.39	4.20	4.25	17.30		
		After	32.68	61.38	59.51	3.37	0.08	0.10	0	92.95	7.05	3.53	3.49	18.00		
	550	Before	31.85	66.11	61.99	3.45	0.10	0.14	1.08	88.42	11.58	5.79	5.76	5.41		
		After	33.73	63.91	62.02	3.39	0.08	0.11	0	89.23	10.77	5.38	5.41	17.60		
Rutile	200	Before	35.51	64.49	64.49	0	0	0	0	91.89	8.11	4.06	4.10	18.50		
	550	Before	33.95	66.05	66.05	0	0	0	0	87.63	12.37	6.19	6.20	5.50		

^aExperimental O²⁻^bO²⁻ (Exp.) – (0.5Na⁺ + Ca²⁺ + Mg²⁺ + 2Si⁴⁺)^cExperimental O (Ti⁴⁺) + O (Ti³⁺) normalized to 100%^dMaximal value calculated on the basis that charge balance requires two Ti³⁺ per O vacancy^e100 2.0 – {2.0 [O (Ti⁴⁺)] + 1.5 [O (Ti³⁺)]}^fStep 1: titanium concentration = Ti^{4+/3+}; Step 2: oxygen concentration = O²⁻ (Calc.); Step 3: determine TiO_{2-x} by normalizing Ti^{4+/3+} to 1.0; Step 4: 100 [2.0 – (2 – x)]

References

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