

Supporting Materials for:

^{18}O -tracer diffusion measurements of the interface transport in $\text{Y}_2\text{O}_3/\text{YSZ}$ multilayers

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In the main article an efficient process to determine diffusion coefficients in thin strained $\text{YSZ}/\text{Y}_2\text{O}_3$ multilayer systems was presented. Using IEDP-SIMS technique, many depth- and diffusion profiles of the investigated multilayer systems could be obtained, but only a few of them were presented.

In this appendix, we would like to show some few more depth- and diffusion profiles.

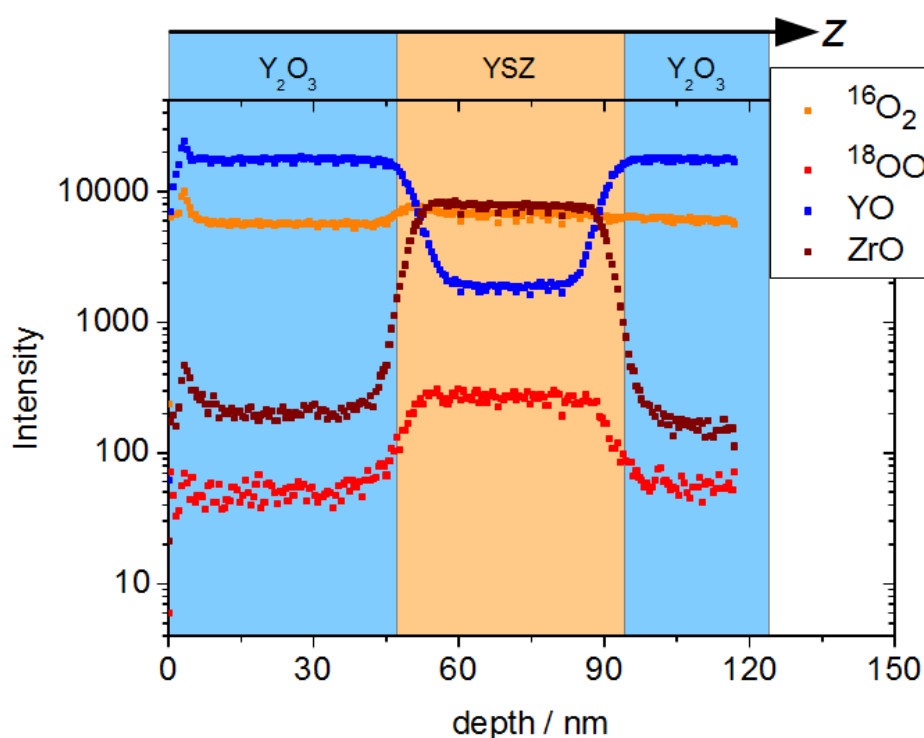


Figure 1: ToF-SIMS depth profile of an $\text{YSZ}/\text{Y}_2\text{O}_3$ multilayer sample with 1 YSZ layer.

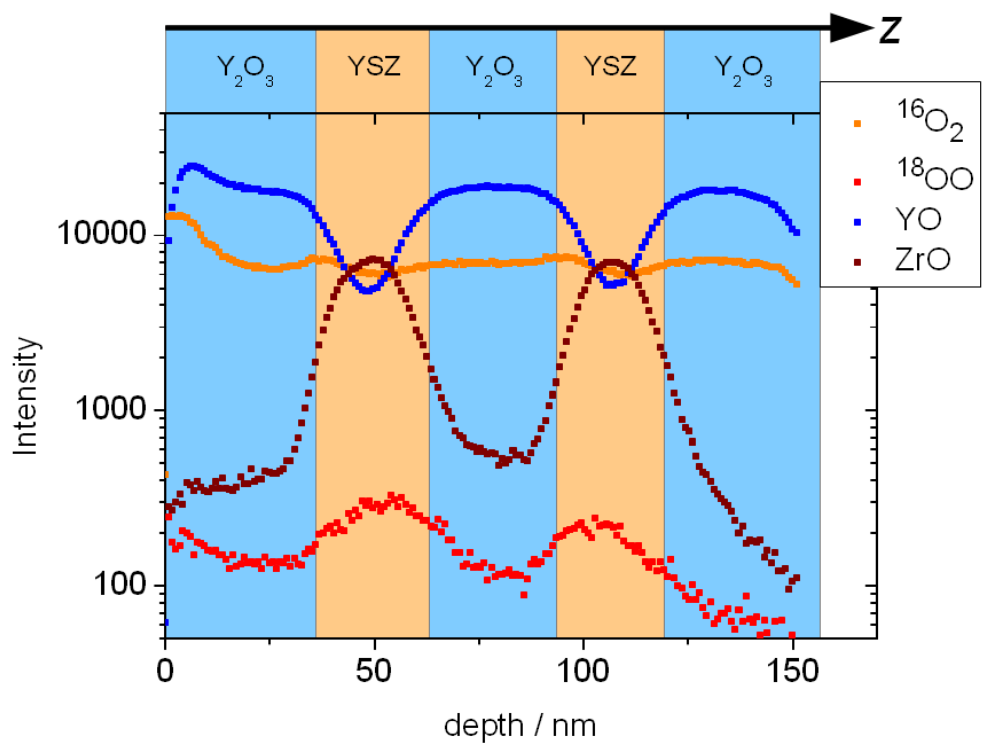


Figure 2: ToF-SIMS depth profile of an YSZ/ Y_2O_3 multilayer sample with 2 YSZ layers.

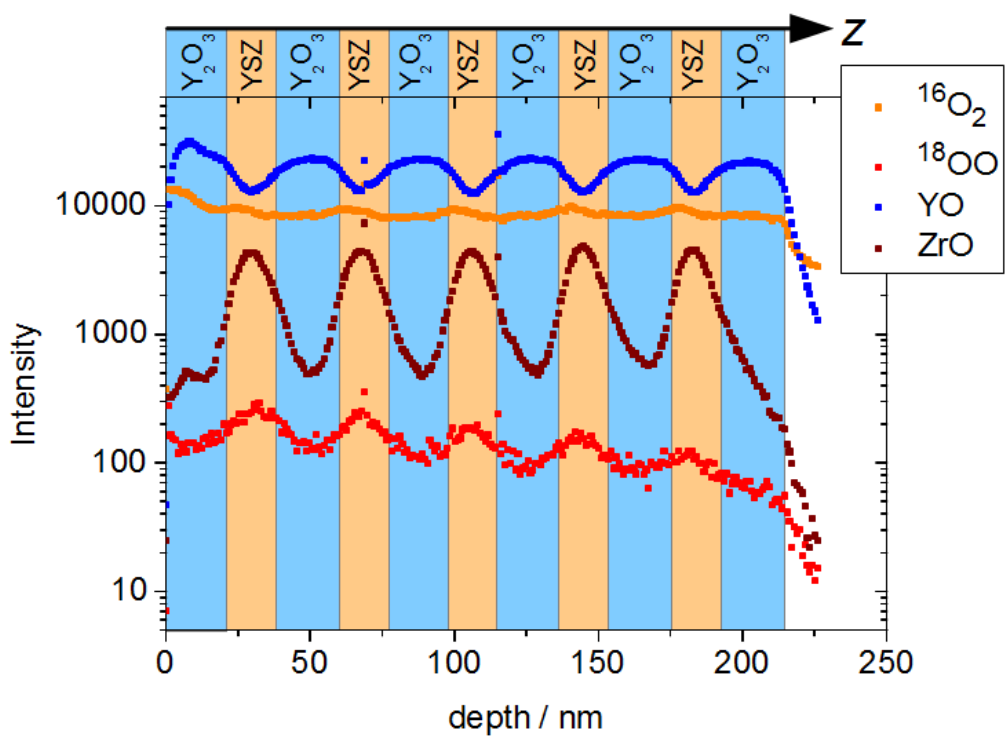


Figure 3: ToF-SIMS depth profile of an YSZ/ Y_2O_3 multilayer sample with 5 YSZ layers.

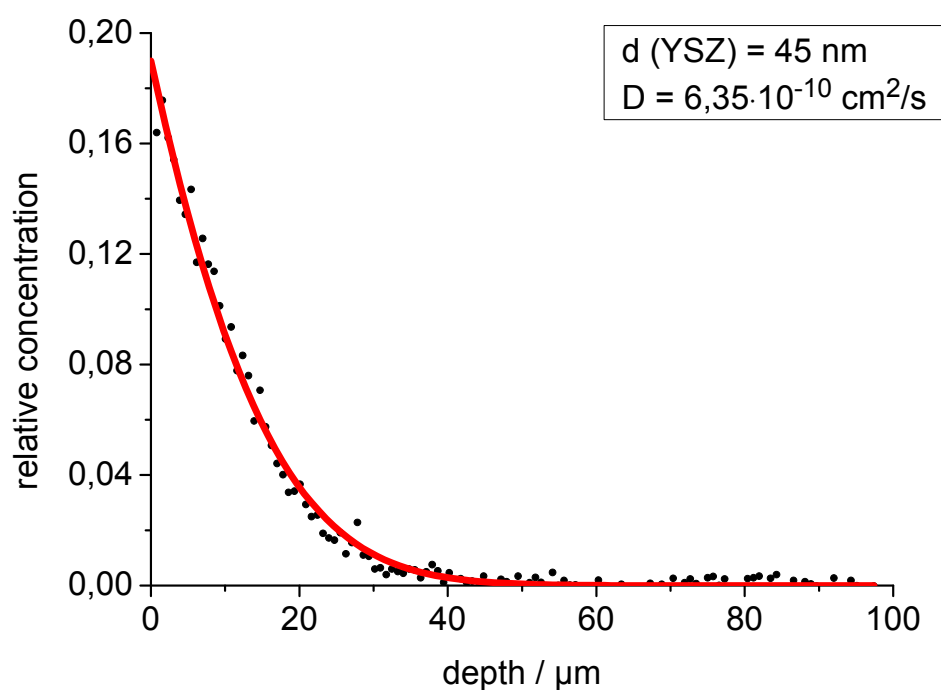


Figure 4: Diffusion profiles along the x-axis (parallel to the individual layers) of sample with $d(\text{YSZ}) = 45 \text{ nm}$. Please note that each data point corresponds to the integrated ^{18}O concentration in a y-z area at a given x. The solid red line represents the fit.

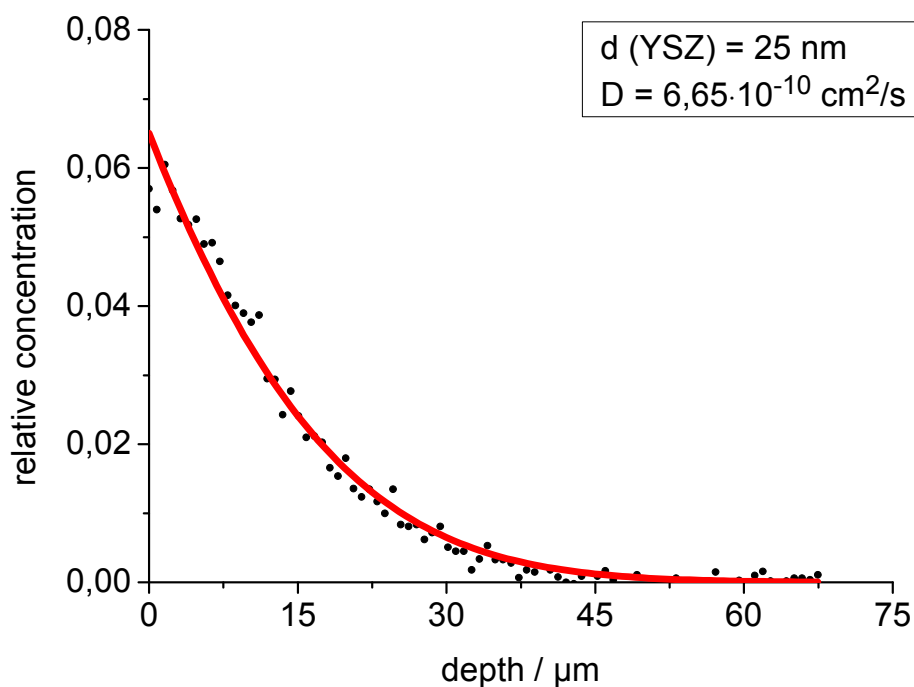


Figure 5: Diffusion profiles along the x-axis (parallel to the individual layers) of sample with $d(\text{YSZ}) = 25 \text{ nm}$. Please note that each data point corresponds to the integrated ^{18}O concentration in a y-z area at a given x. The solid red line represents the fit.

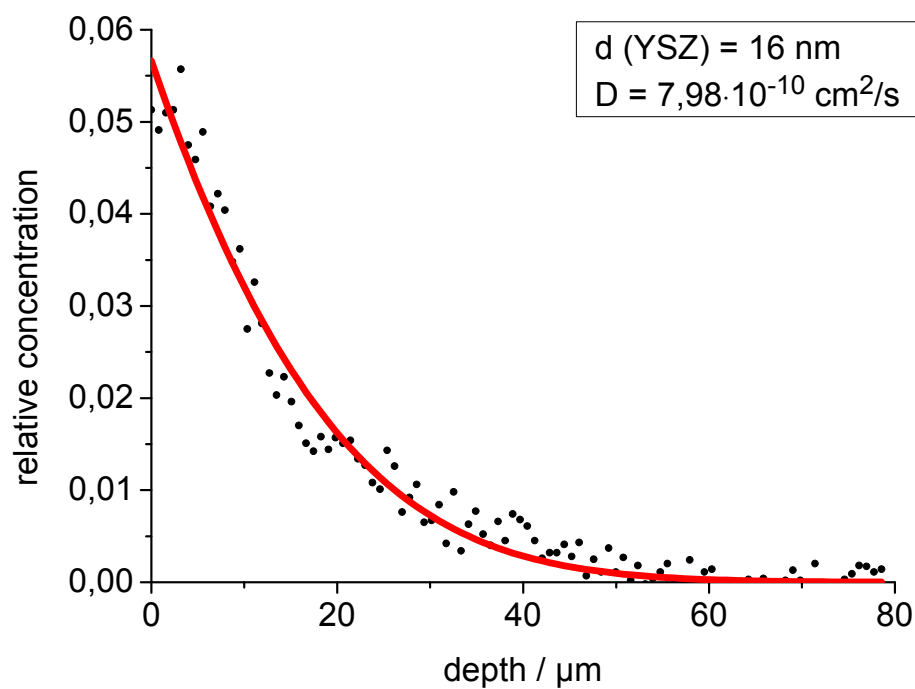


Figure 6: Diffusion profiles along the x-axis (parallel to the individual layers) of sample with $d(\text{YSZ}) = 16 \text{ nm}$. Please note that each data point corresponds to the integrated ^{18}O concentration in a y-z area at a given x. The solid red line represents the fit.