Additional Material

Supporting Information

Spectral Features of Photostimulated Oxygen Isotope Exchange And NO Adsorption on "Self-Sensitized" TiO_{2-x}/TiO_2 in UV-VIS Region

*Victor V. Titov, Ruslan V. Mikhaylov, Andrey A. Lisachenko**

Department of Physics, Saint-Petersburg State University, ul. Ul'yanovskaya, 1, Saint-Petersburg, 198504, Russia.

Author e-mail: lisachen@photonics.phys.spbu.ru

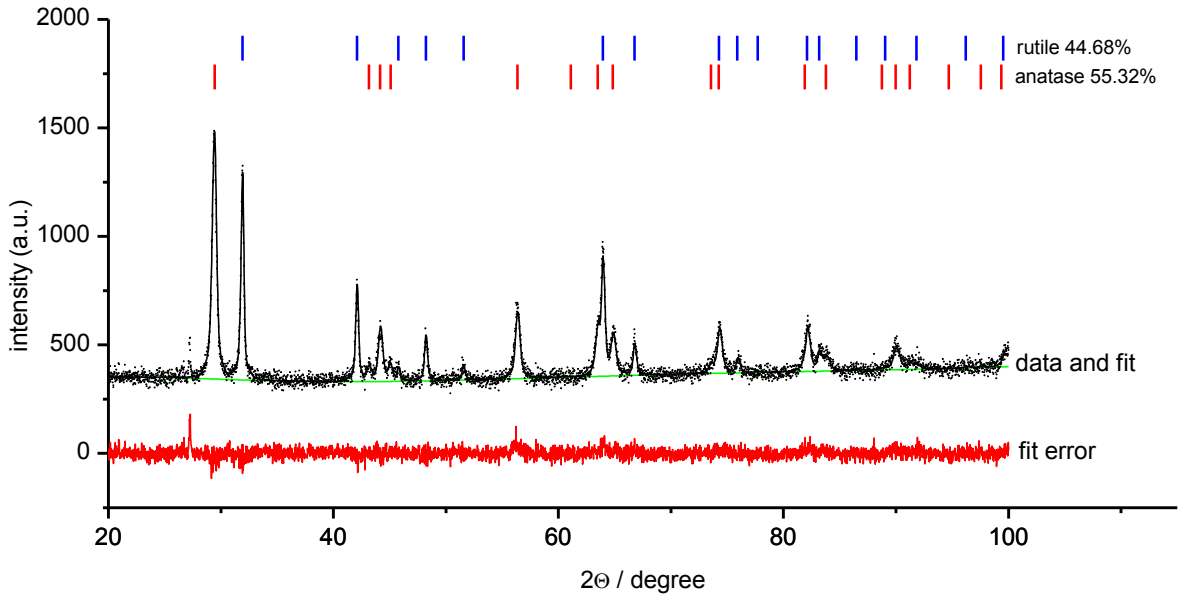

Figure S1. XRD of Degussa P25 after the preliminary surface cleaning (see paper) and repeated calcinations at 870 K. Dots are the measured data, solid black line is the fit, green line is the background, red line is the fit error (i.e. data minus fit).

The phase composition of cleaned sample is 55 : 45 anatase : rutile. Although this ratio differs from the standard one for the TiO_2 Degussa P-25 but it remained unchanged during the following experiments. Structural characterization of TiO2 samples was performed on Bruker D2 “Phaser” diffractometer with CuKα radiation source.

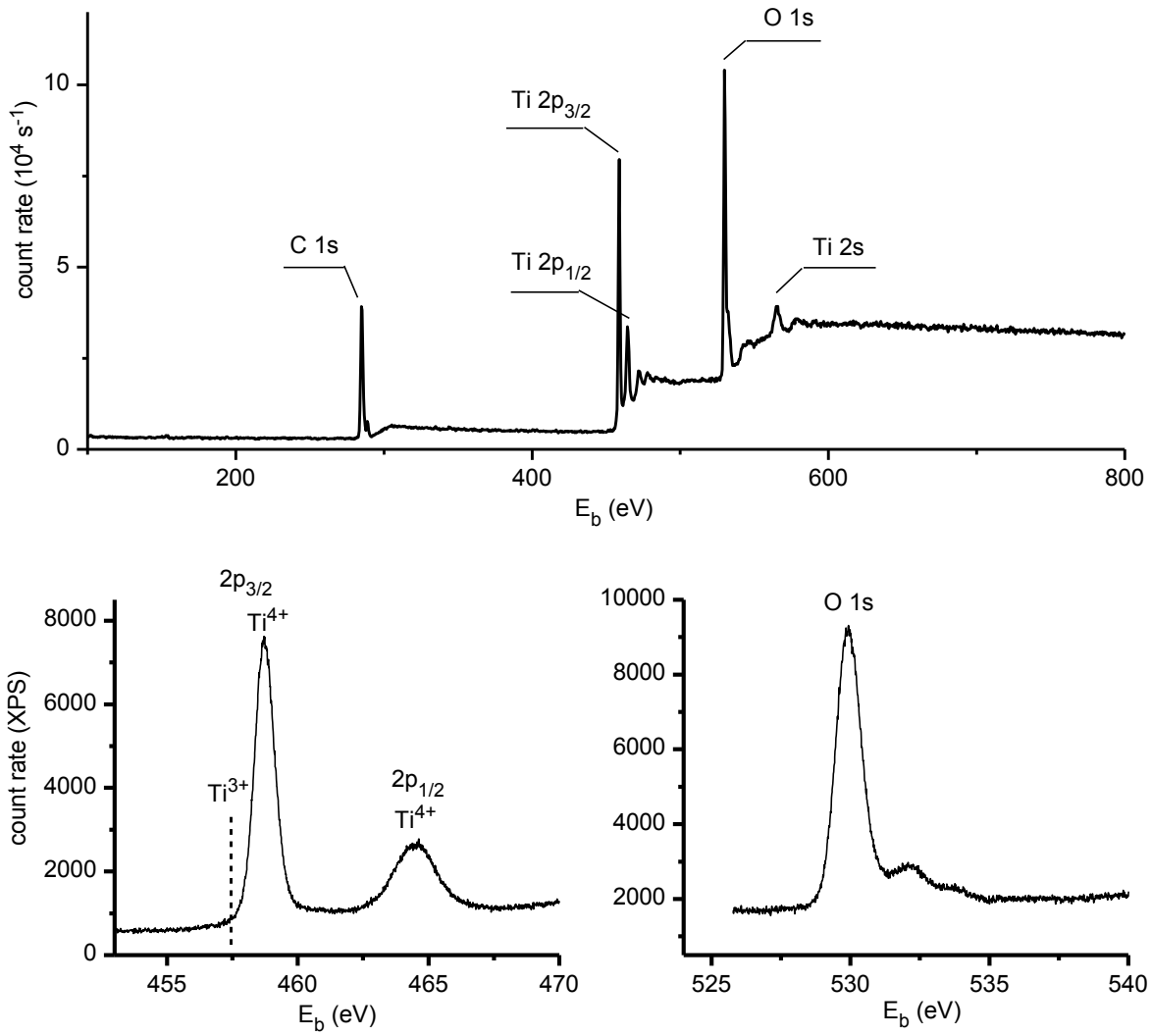

Figure S2. - Survey XPS of cleaned TiO_2 Degussa P25 (top). The C1s peak arises from the conductive carbon-based substrate; bottom – high-resolution XPS of cleaned TiO_2 Degussa P25.

On the shape of Ti($2p_{3/2}$) the peak Ti^{3+} is not manifested (the expected position of Ti^{3+} peak is marked by dashed line). This implies that oxygen deficiency in studied samples is below the detection limit of used instrument “Thermo Fisher Scientific Escalab 250Xi” on the line Al Kα 1486.7 eV.

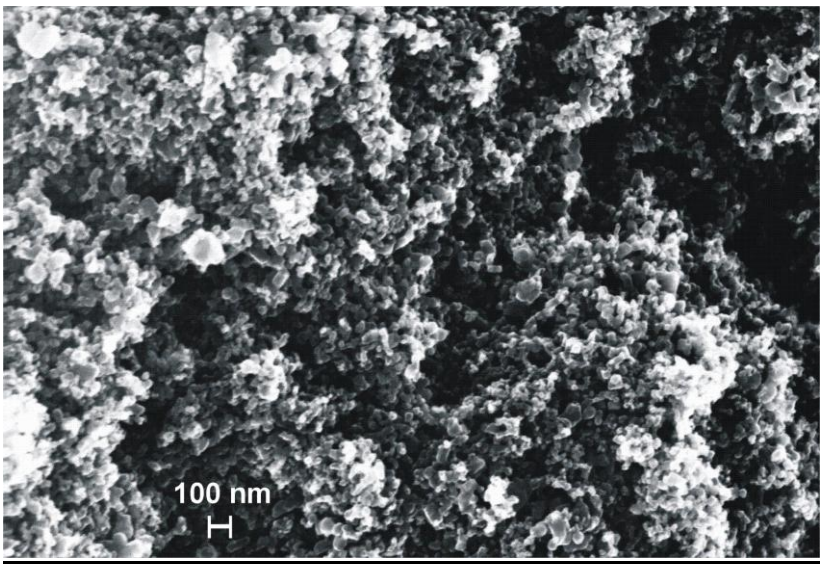

Figure S3. SEM image of the used sample obtained on a SEM-FIB Zeiss 1540-XB electron microscope with an accelerating potential of 20 kV. The sample was preliminary cleaned (see paper) and repeatedly calcinated at 870 K. Differences from the original as-received sample Degussa P25 are not fundamental.