

Electronic supplementary information

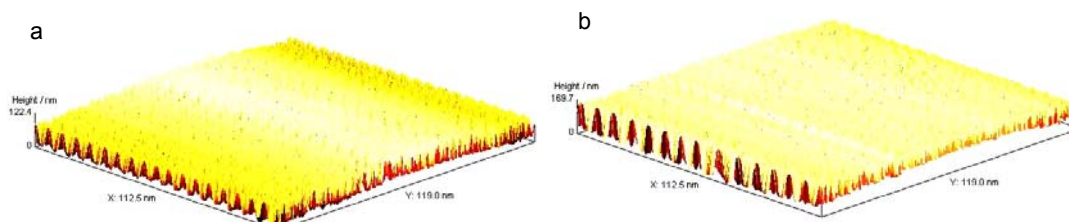


Figure: AFM images of $\text{In}_2\text{O}_3\text{-SnO}_2$ coated glass (A) before potential and (B) after potential (2.0 V for 60 min) application

Figure shows the AFM images (contact mode) of the original hydrophobic (Figure A) and super-hydrophilic (Figure B) $\text{In}_2\text{O}_3\text{-SnO}_2$ surfaces. The surface image is changed (*i.e.*, changes in the height of the surface structure) due to increase in number of hydroxyl groups, with molecularly adsorbed water layers. This is shown in Figure B as an increase in height of the surface structure from 122.4 nm to 169.7 nm. The AFM measurements were made on an indium tin oxide plate (1 cm width x 3 cm length x 1 mm thickness) whereby about half its length had been made super-hydrophilic electrochemically (application of 2.0V vs. Ag/AgCl, saturated KCl) whereas the other half remained hydrophobic (not dipped into the electrolyte solution during electrolysis). Therefore AFM images were taken for the hydrophobic (Figure A) and super-hydrophilic (Figure B) regions of the surface on the same plate. In this way, any differences likely arose from the electrochemical surface treatment and not from differences between different plates. The results of these measurements show that the image is changed in the surface structure height.