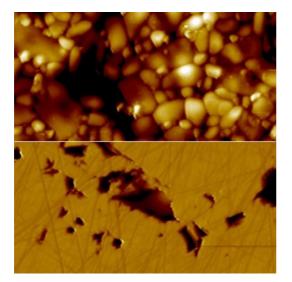


Polished Ceramic Plate

Nanosurf - Application Note No. 00281

As dental esthetics is becoming increasingly important for dental patients, ceramics are frequently being applied for tooth restoration due to their higher mechanical strength and chemical inertness. It can be shown that the surface roughness of the polished ceramics is related to the crack formation [1]. It is therefore important top investigate this characteristic.



Unpolished and polished ceramic plate. (90µm x 90µm scan range; 3µm colour

The measurement was recorded with a Nanite AFM operated in contact mode. Moreover the measurement was performed in a noisy environment without vibration insulation.

The AFM image compares an unpolished to a polished ceramic surface where the RMS roughness is 570nm and 310nm respectively. More over in the unpolished zone the polishing scratches are clearly visible.

The measured ceramic sample was a courtesy of Precisebeurs (NL).

[1] T. Yamamoto, R. Nishiura and Y. Momoi; "Influence of surface roughness on crack formation in a glass-ceramic bonded resin composite base"; J. of Oral Sci., Vol. 48, No. 3, 2006, 125-130.