PhaseView®
THE SIMPLEST WAY TO 3D

Metrological Certification

Measurement of 3D topography of the sample from conventional images with optional measurement of roughness parameters (Ra, Rq, Rsk, Rku, Rv, Rp, Rt) can be performed with SurPhase® and MicroPhase® measurement systems of PhaseView in less than 5 sec.

Figure 1. Image of the roughness standards comparator with Ra=0.2. Image size is 160 x 130 µm.

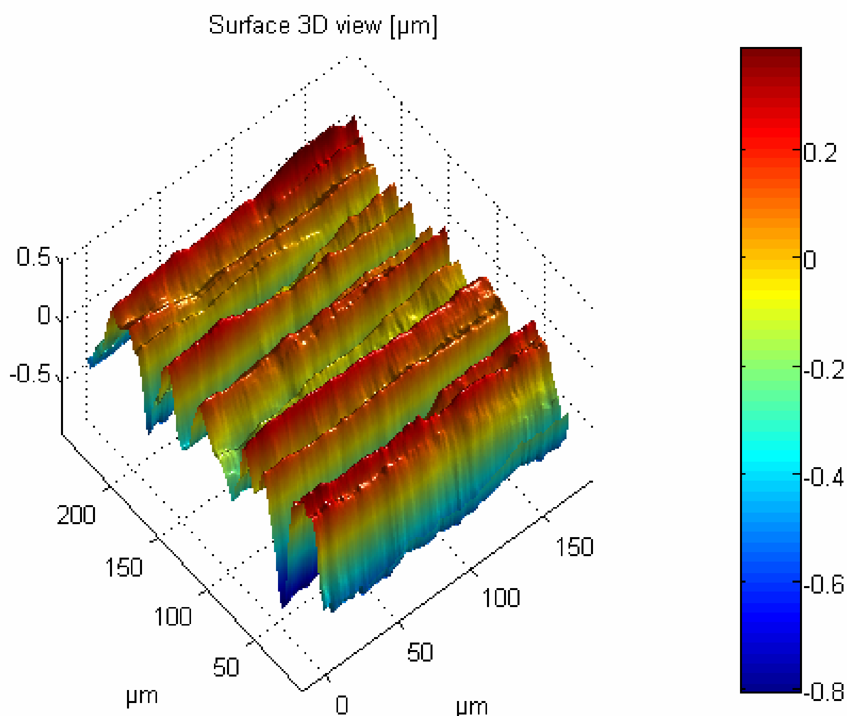

Figure 2. 3D view of the roughness standards comparator of Ra = 0.2 µm.

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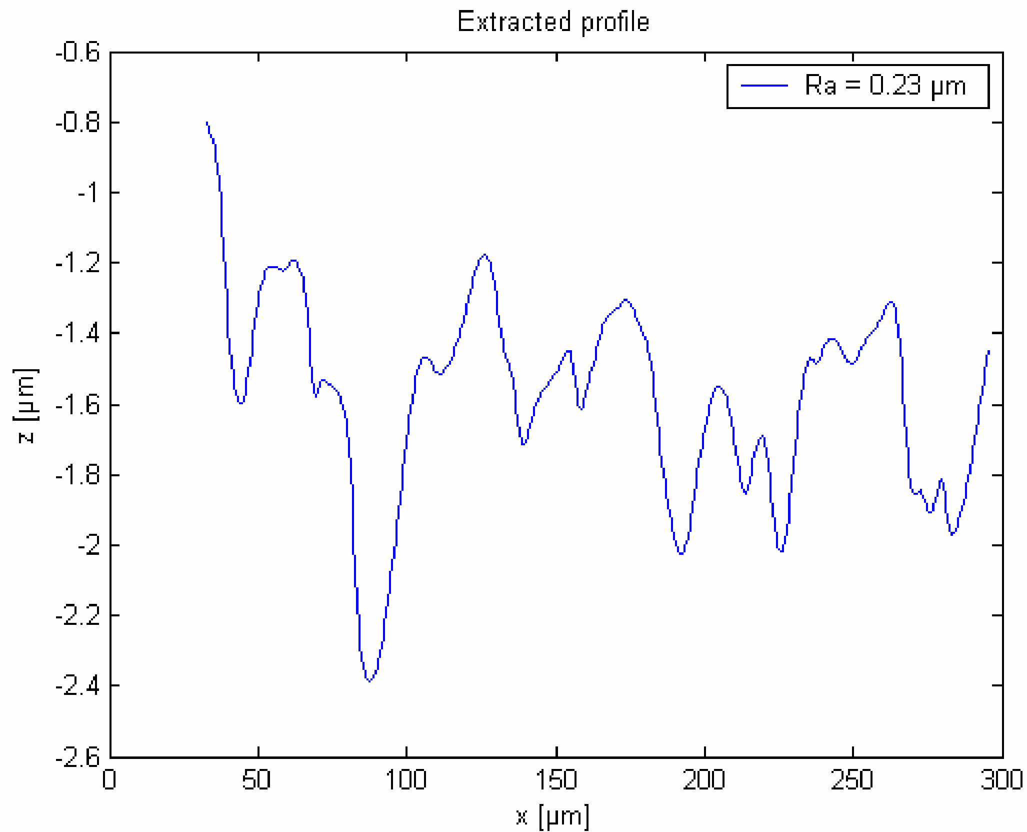

Figure 3. One of the 1D profiles extracted from the 3D representation of the roughness standards comparator, computed by SurPhase®.

For metrological certification of the accuracy of measurements of roughness parameters by SurPhase® and MicroPhase® measurement systems, roughness measurements were performed by using the surface roughness standards comparator (Flexbar composite pocket set No. 16008) from Flexbar Machine Corporation of Islandia, NY. All 30 specimen of the comparator are calibrated in the Ra, accurate to within ±10% of the nominal values. The sample in the experiment has Ra = 0.2 µm and is polished by grinding, with the total Peak-to-Valley Depth or Roughness Rt = 1.0 µm.

In the experiment, SurPhase® is used with the x10 microscope objective with maximum field of view of 0.6 x 0.5 µm, and with the lateral resolution of 1.4 µm.

To compute the roughness parameters, a series of 1D profiles is extracted along the rod's length. Roughness parameters are computed according to international standards (ISO). The 3D profile measured by the SurPhase® system features Ra = 0.23 µm, that is within tolerance limits of this sample.

SurPhase® and MicroPhase® systems are verified to comply with metrological standards to measure roughness parameters of the polished samples.

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