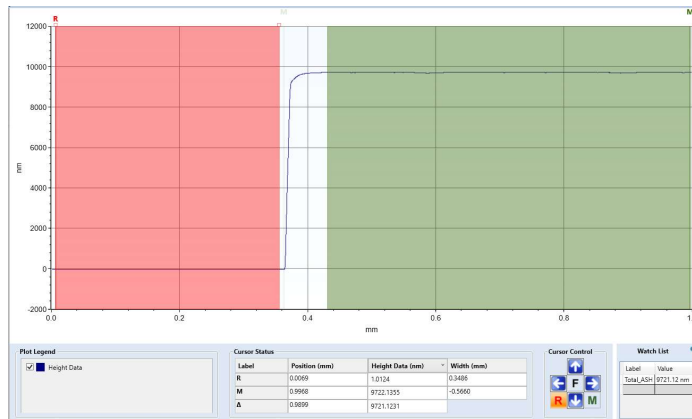


# Topographic Characterization

The jobs completed in the MicroFabSpace can be characterized topographically by optical interferometry and mechanical profilometry. These techniques allow to analyse with high resolution, the surface roughness and the XY and Z dimensions of the fabricated samples, etc.

### In a typical mechanical profilometry measurement:

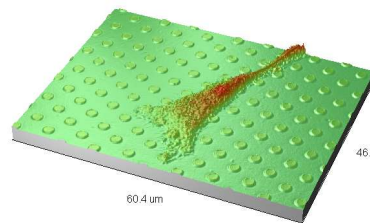
A diamond tip contacts the sample with a chosen force that remains constant. Then, the tip moves across the sample for a specific distance and records the vertical position of the tip, generating a profile, that resembles the topography of the sample. With this technique we can measure surface variations ranging from few nanometres to 1 mm.



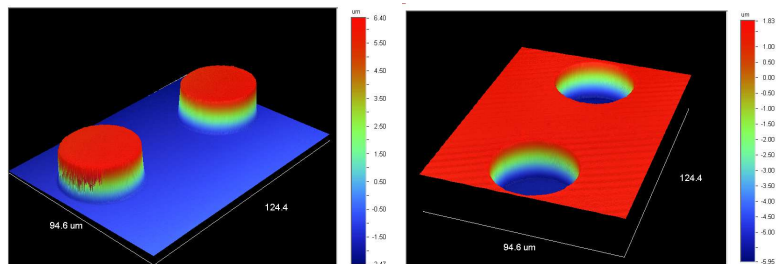
Height profile of a SU-8 micro structured surface

### In a typical white light interferometry measurement:

The light reflected from the sample and the light reflected by a high-precision reference mirror, combine to produce an interference that depends on the topography of the sample (Michelson interferometer). Optical interferometry allows to measure roughness as low as 1Å, and thicknesses between few nanometres to few millimetres.



Cell on PMMA micro structured surface



3D images of a silicon mould and its PDMS replica