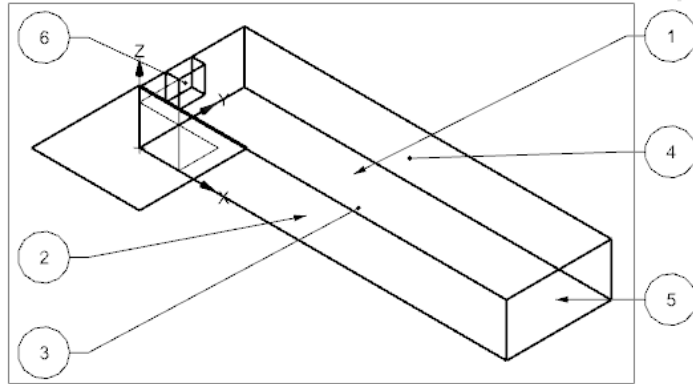
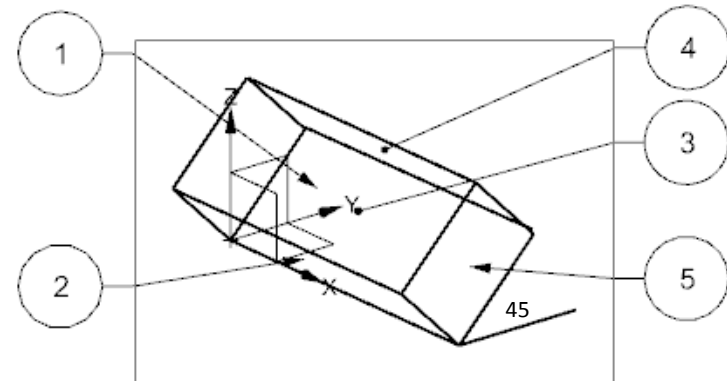
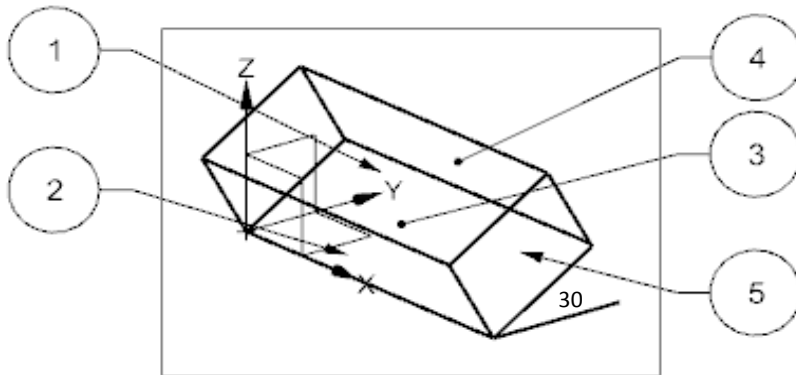


Measurement plan



- Multiple samples are used to initially optimise our measurement process
- Three build angles (0° , 30° , and 45°)
- All surfaces around each sample are measured as shown
- Three areas per surface measured



Measurement settings



- Alicona G5 Focus Variation
- 20× objective NA 0.4 FoV (0.81 × 0.81) mm
- Ring light illumination
- Contrast: 0.65
- Exposure: 9.02 ms
- Vertical Resolution: 15 nm
- Lateral Resolution: 2.935 μm
- Measurement area: 3 mm × 3 mm

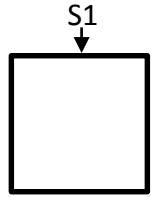
- F Operator: Subtraction of the LSM plane
- S filter: 0.008 mm
- L filter: 2.5 mm & 0.8 mm
- Void filling by interpolation
- Parameters calculated: S_a , S_q , S_{sk} , S_{ku} , S_p , S_v , S_z , S_{al} , S_{tr} , S_{td} , S_{dq} , S_{dr} .

Surface 1 topography

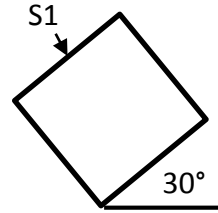


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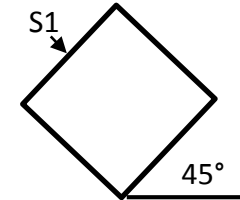
UNITED KINGDOM · CHINA · MALAYSIA



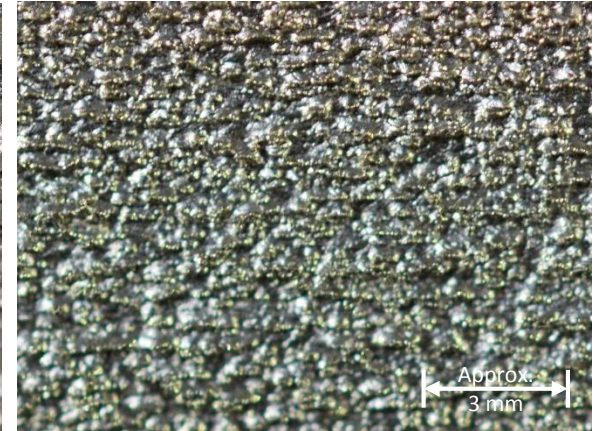
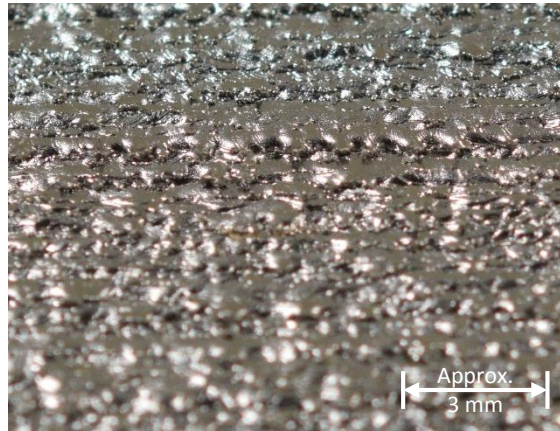
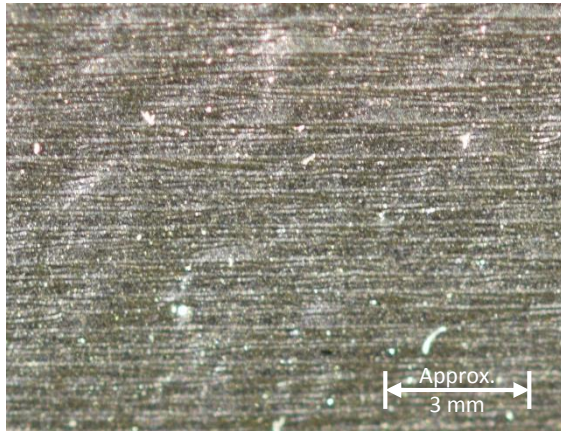
0° Build angle



30° Build angle

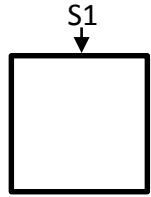


45° Build angle

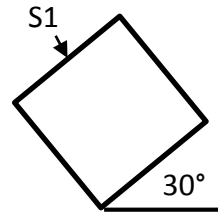
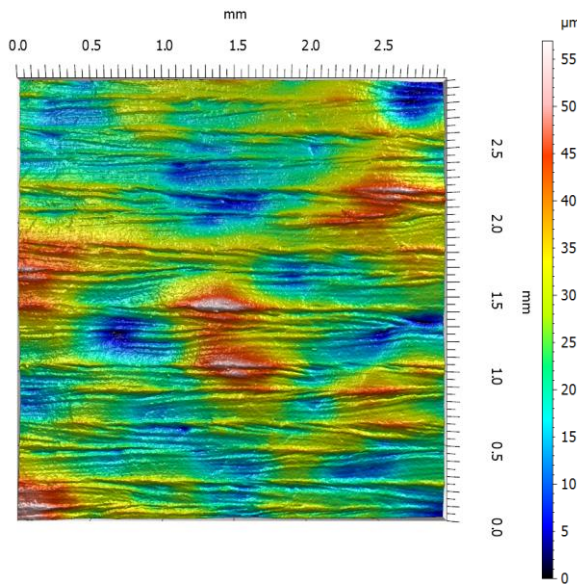


Acknowledgement to the MTC FlexiFinish project

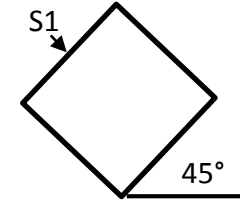
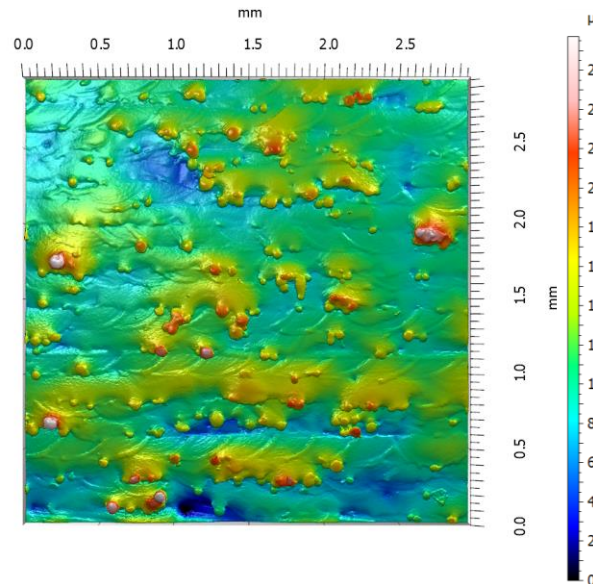
Surface 1 topography



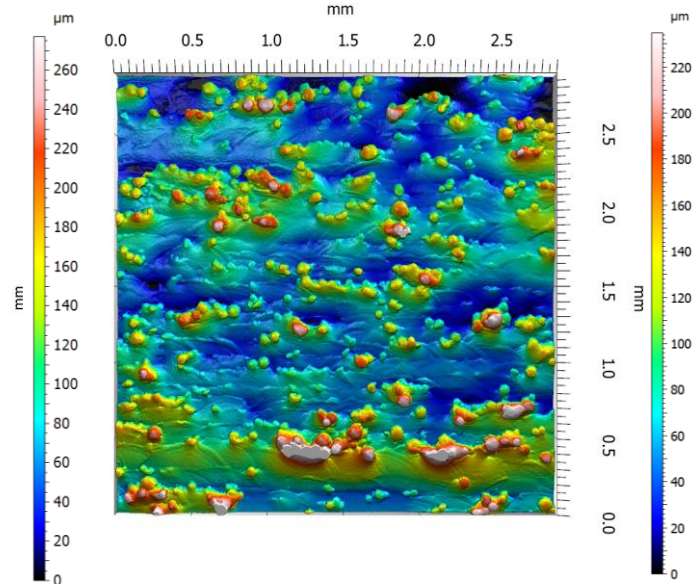
0° Build angle



30° Build angle

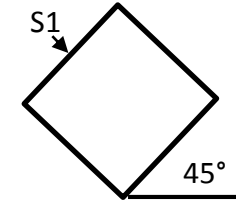
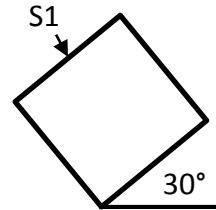
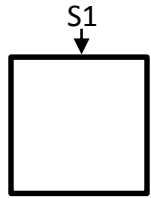


45° Build angle

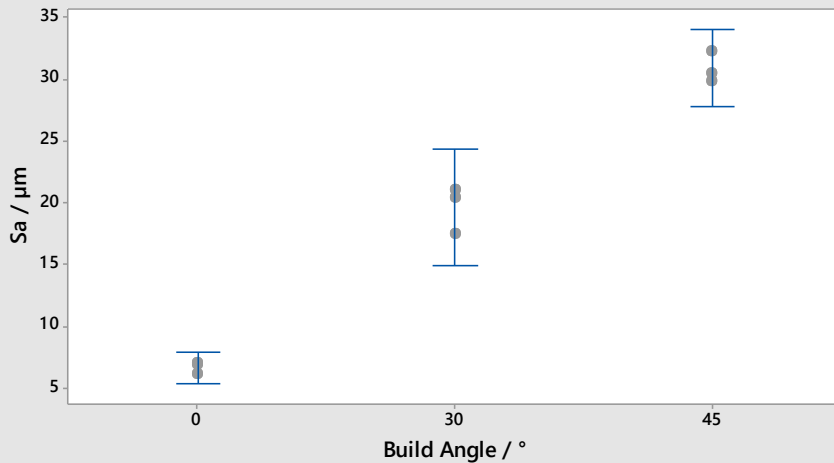


Acknowledgement to the MTC FlexiFinish project

Sa with respect to build angle

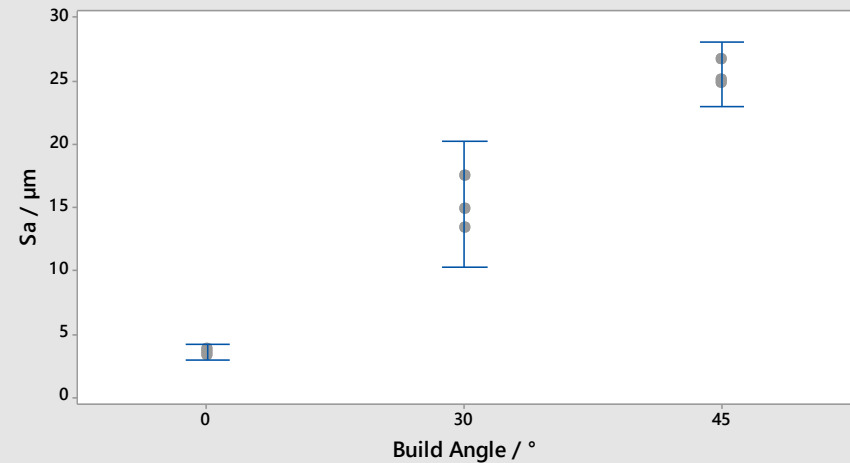


Interval Plot of S1 Sa / μm at 2.5 mm L Filter
95% CI for the Mean



Individual standard deviations are used to calculate the intervals.

Interval Plot of S1 Sa / μm at 0.8 mm L Filter
95% CI for the Mean

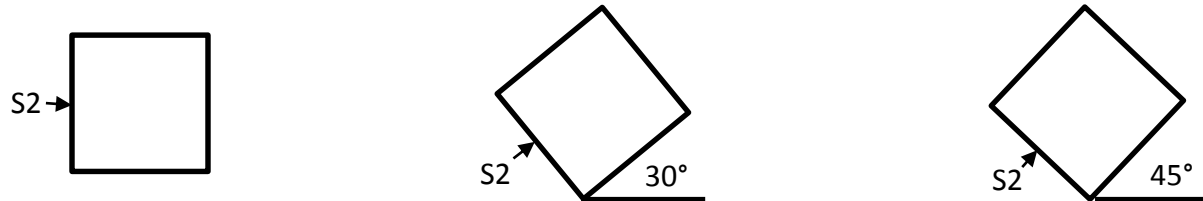


Individual standard deviations are used to calculate the intervals.

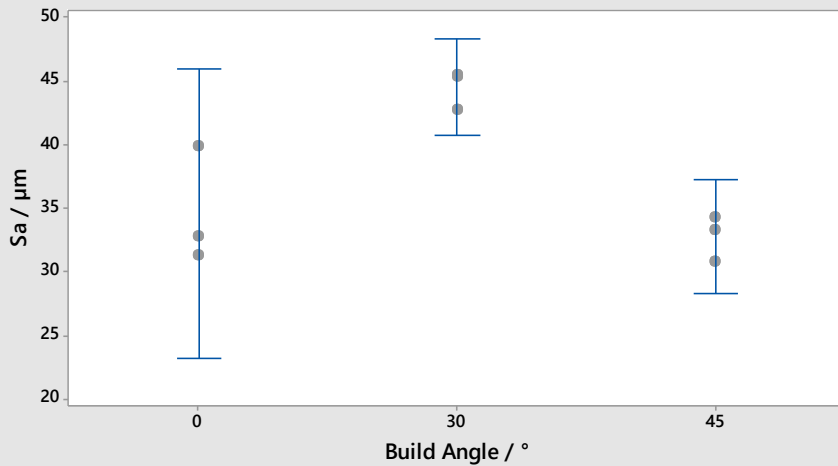
2.5 mm L filter

0.8 mm L filter

Sa with respect to build angle

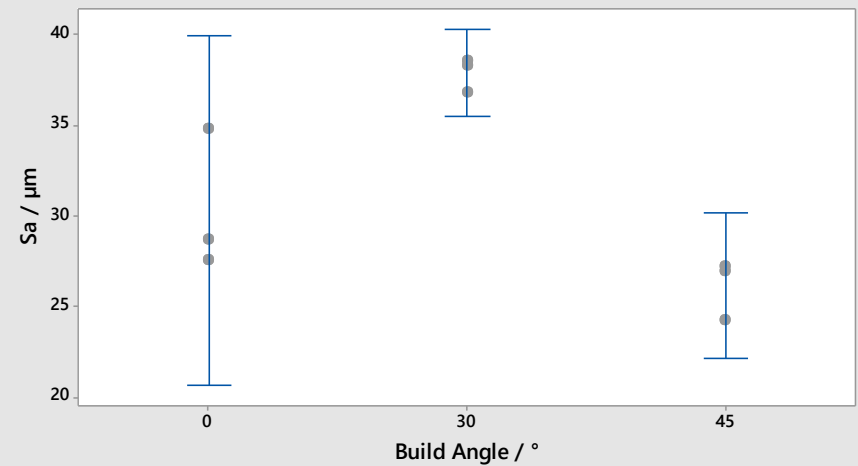


Interval Plot of Sa / μm
95% CI for the Mean



Individual standard deviations are used to calculate the intervals.

Interval Plot of Sa / μm
95% CI for the Mean

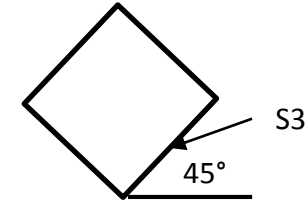
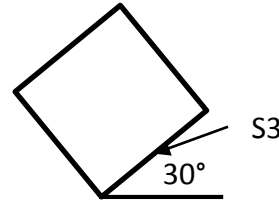
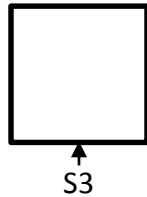


Individual standard deviations are used to calculate the intervals.

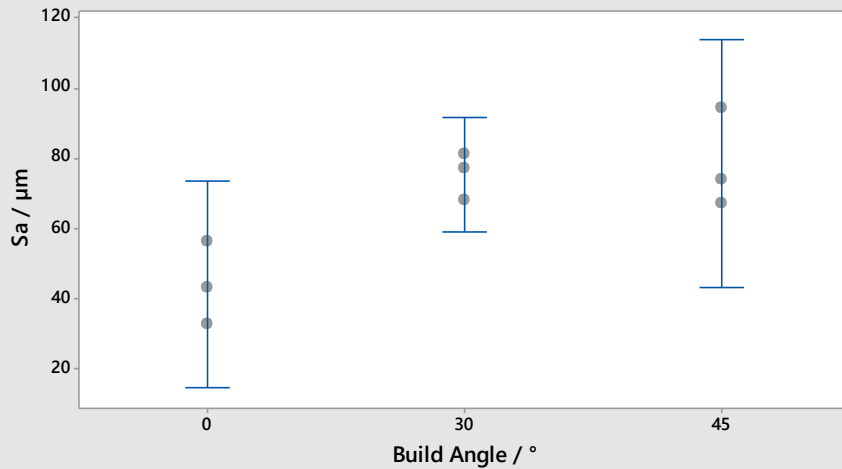
2.5 mm L filter

0.8 mm L filter

Sa with respect to build angle

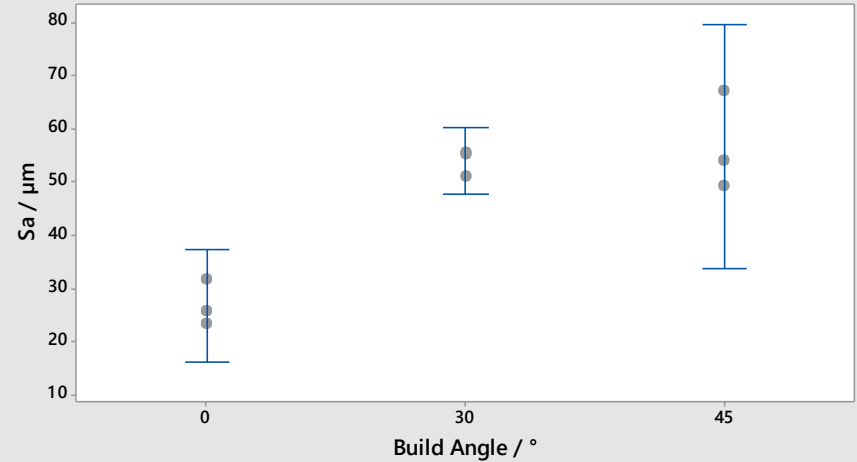


Interval Plot of Sa / μm
95% CI for the Mean



Individual standard deviations are used to calculate the intervals.

Interval Plot of Sa / μm
95% CI for the Mean



Individual standard deviations are used to calculate the intervals.

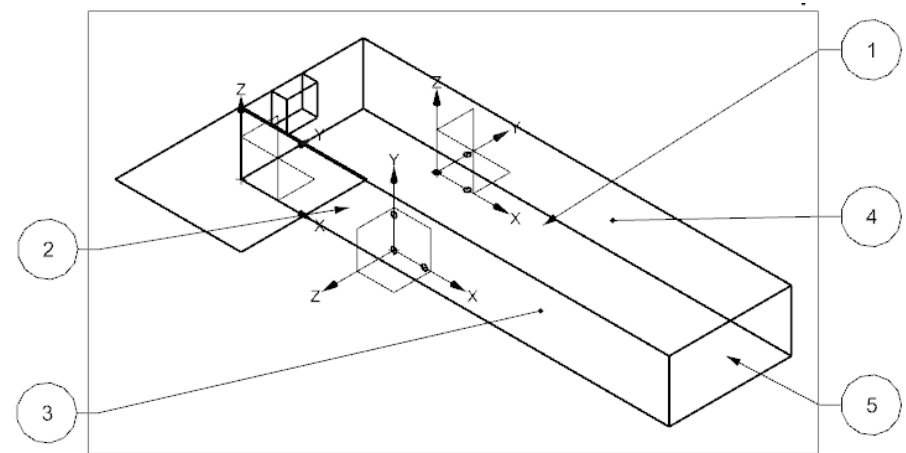
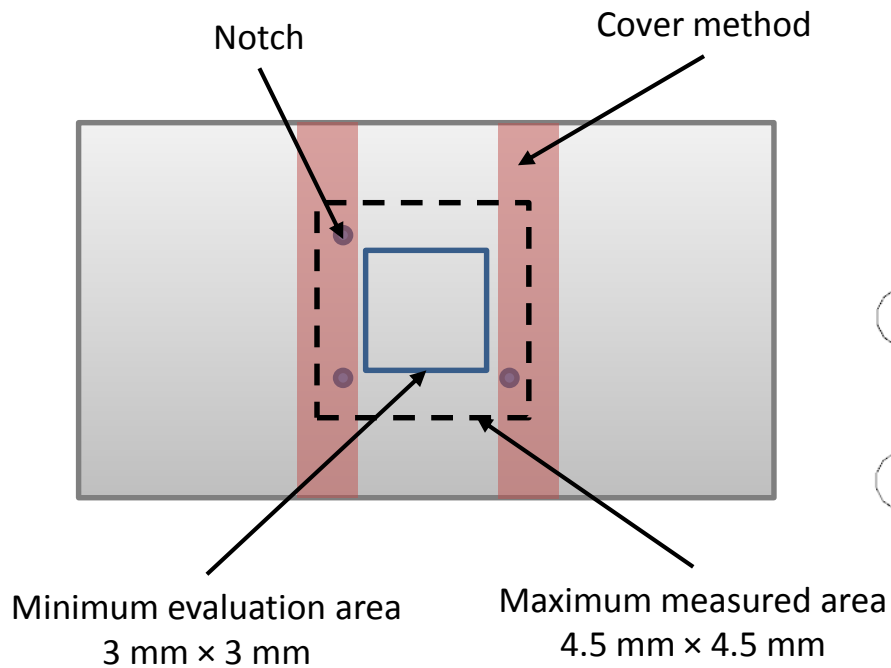
2.5 mm L filter

0.8 mm L filter



- How does a topography change during finishing process?
 - Track the evolution of texture parameters
 - Align and compare topographies

Alignment strategy

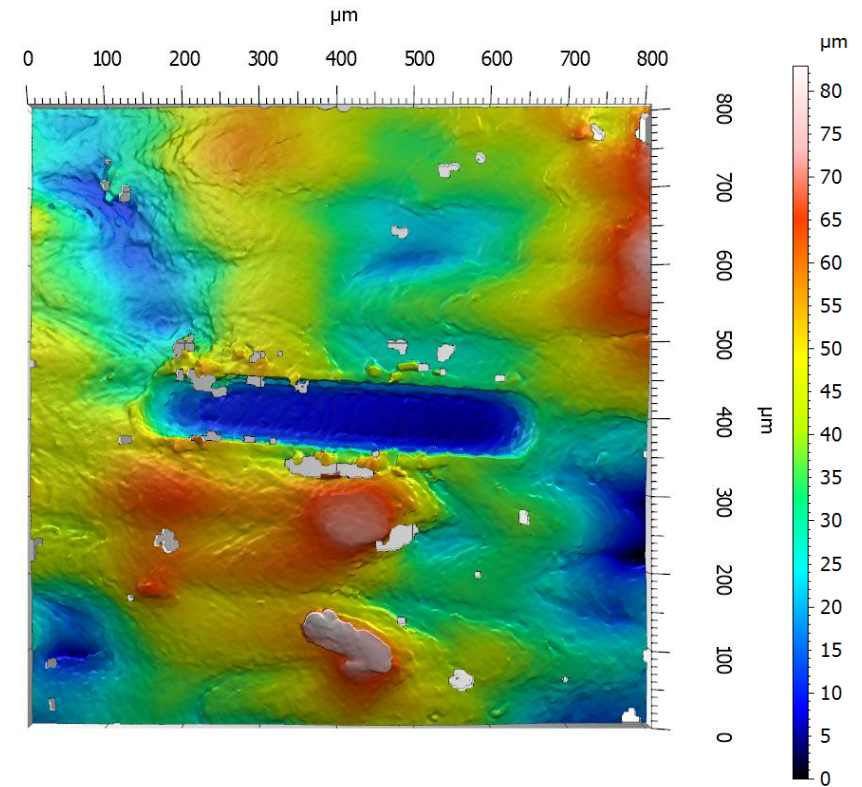
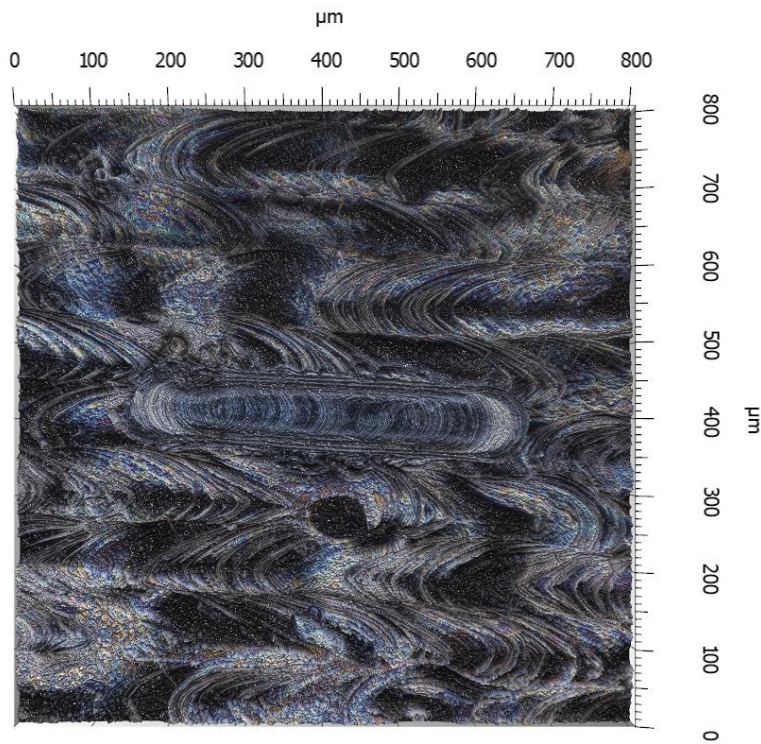


Notching - micromilling



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Courtesy of Sarah Everton (University of Nottingham)