

New Nanofab Tool

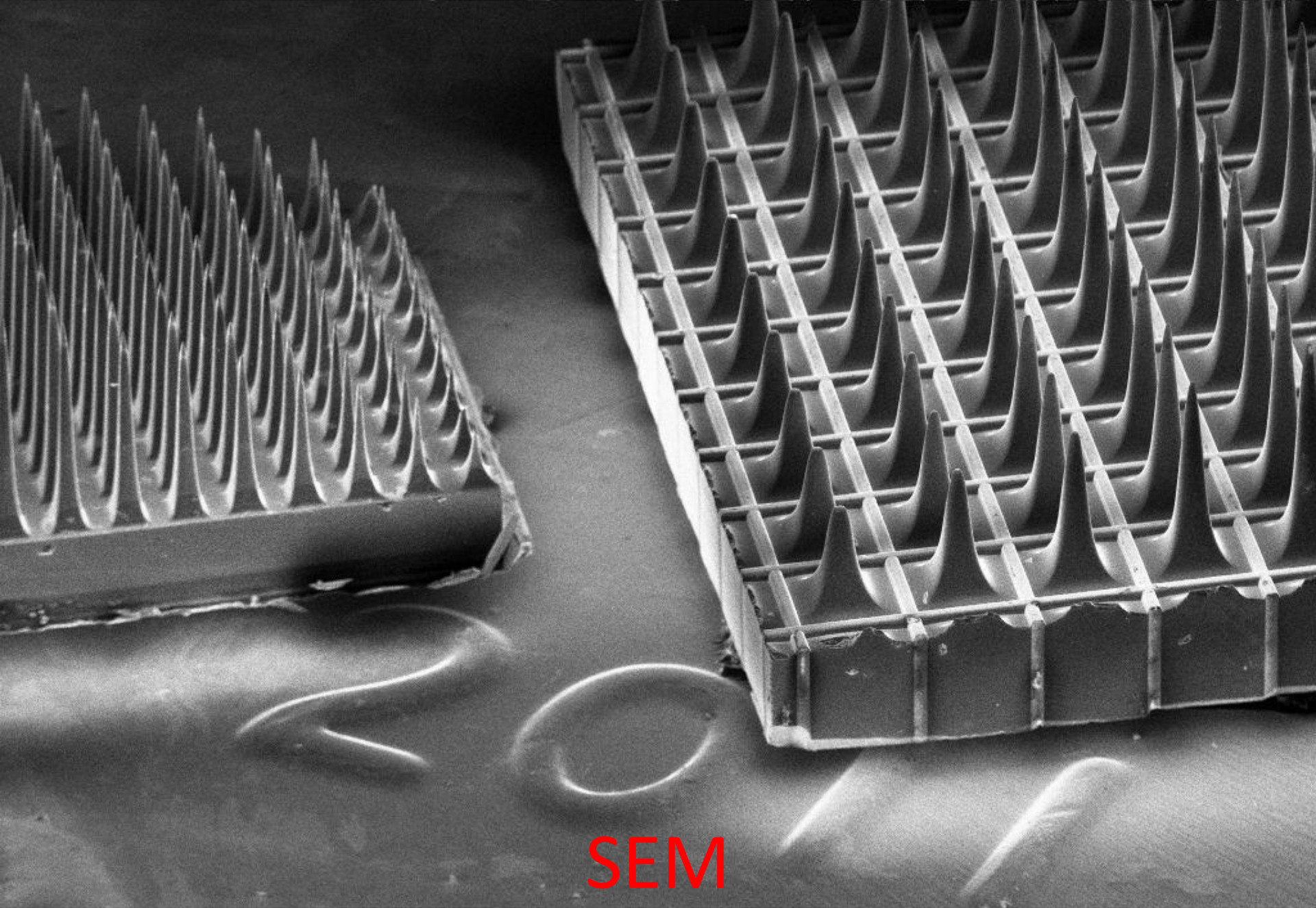
Keyence 3D Optical Microscope

Brian Baker



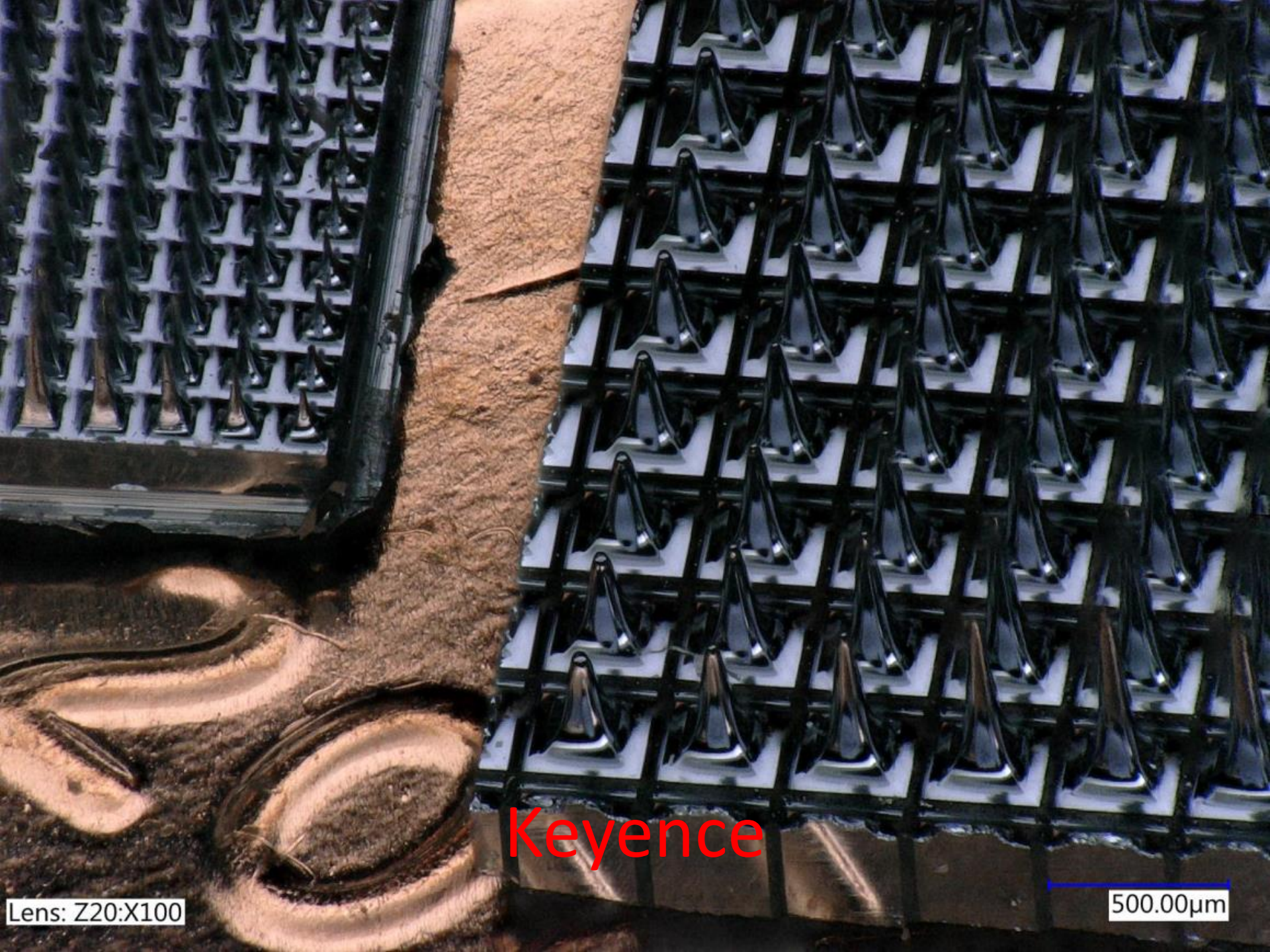


Conventional
Optical Microscope



SEM

EHT=15.00 kV WD= 45 mm Mag= 79 X
Detector= SE1 I Probe= 150 pA 1. mm

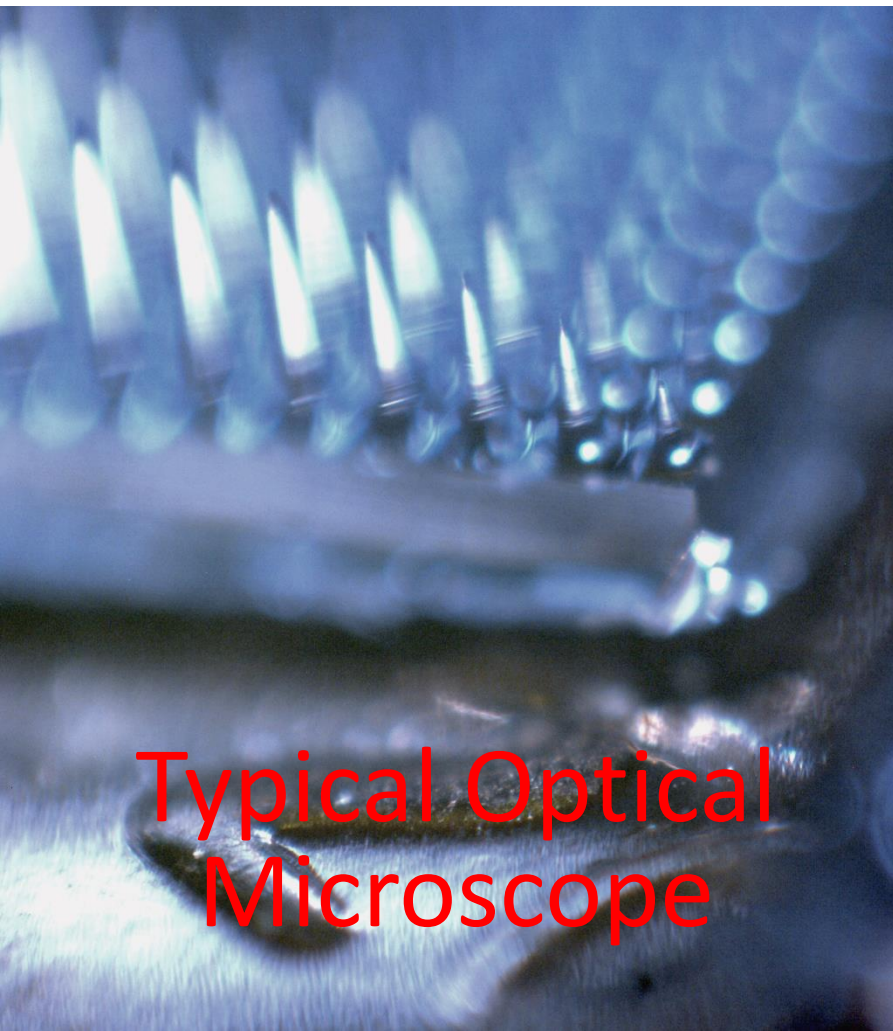


Keyence

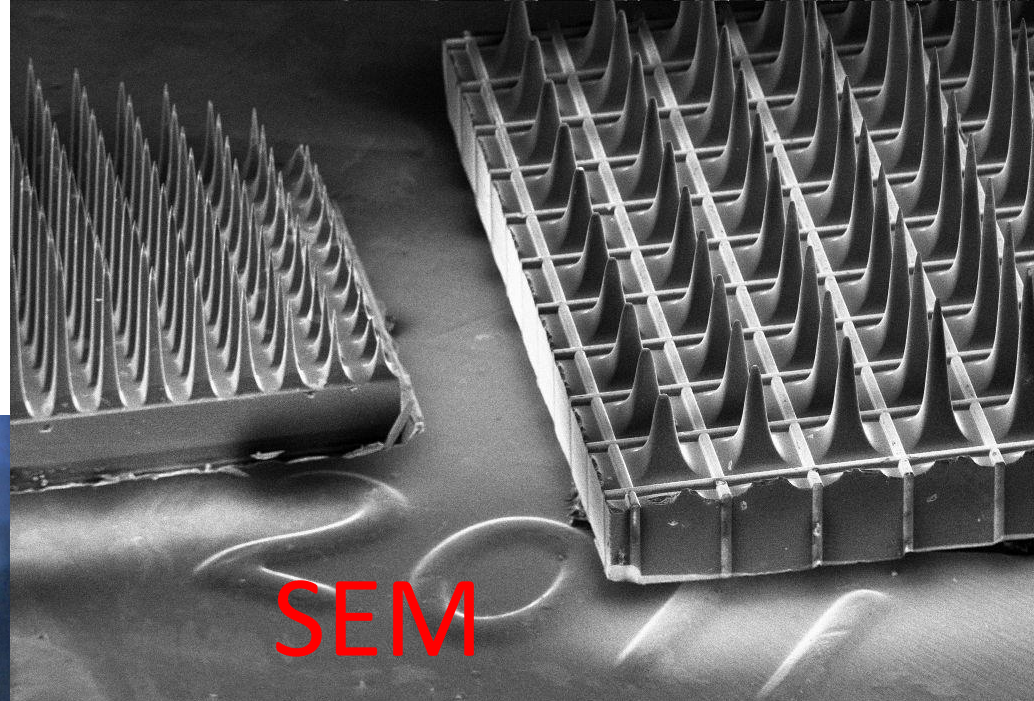
500.00µm

Lens: Z20:X100

Image Comparison



Typical Optical
Microscope



EHT=15.00 kV WD= 45 mm Mag= 79 X
Detector= SE1 I Probe= 150 pA 1 mm

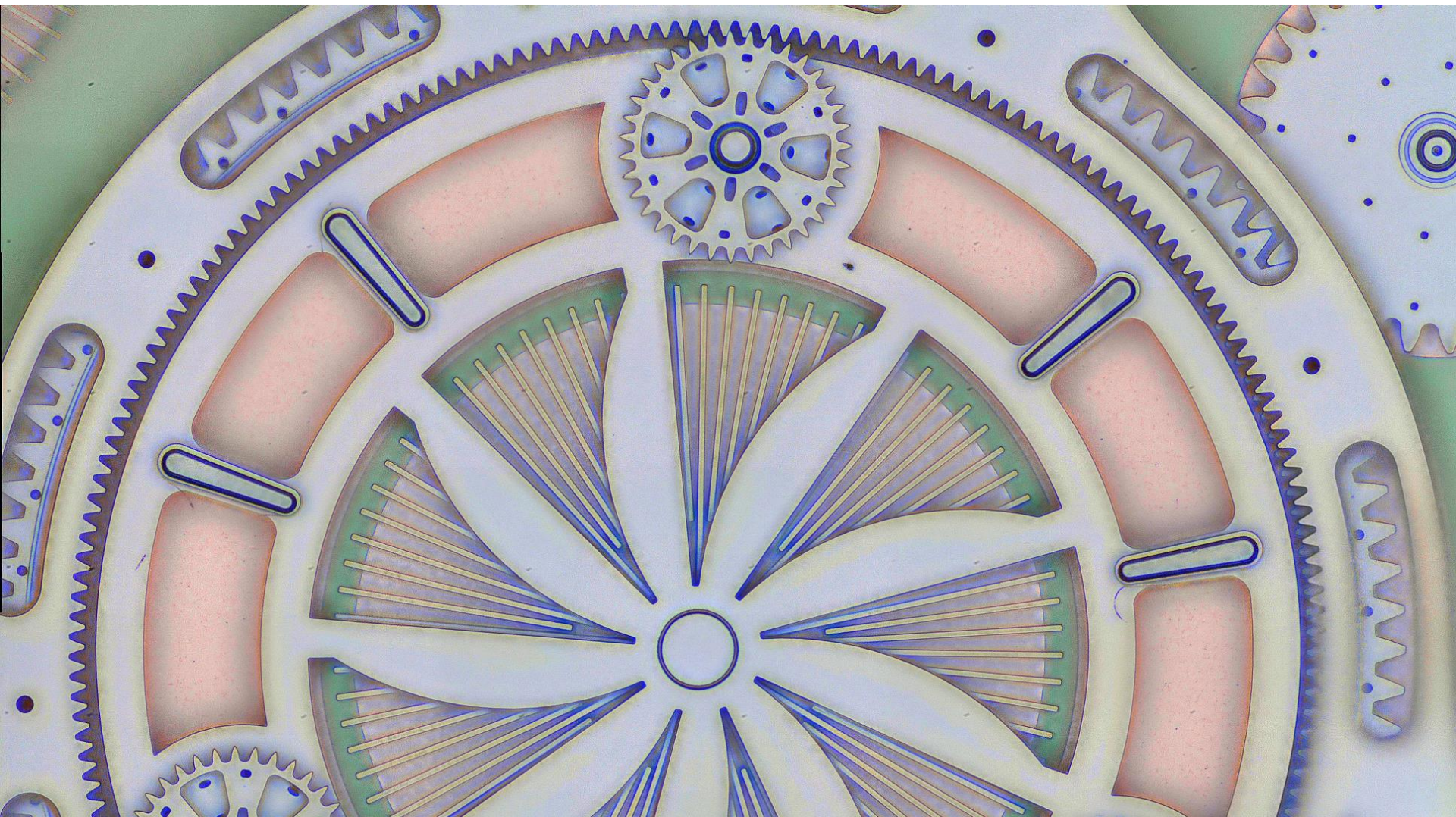


Keyence

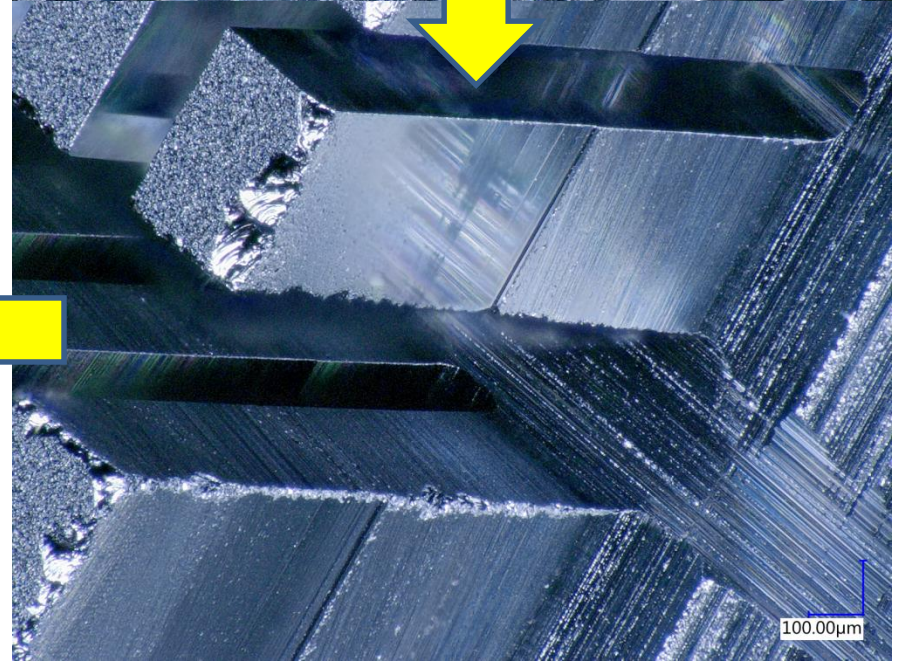
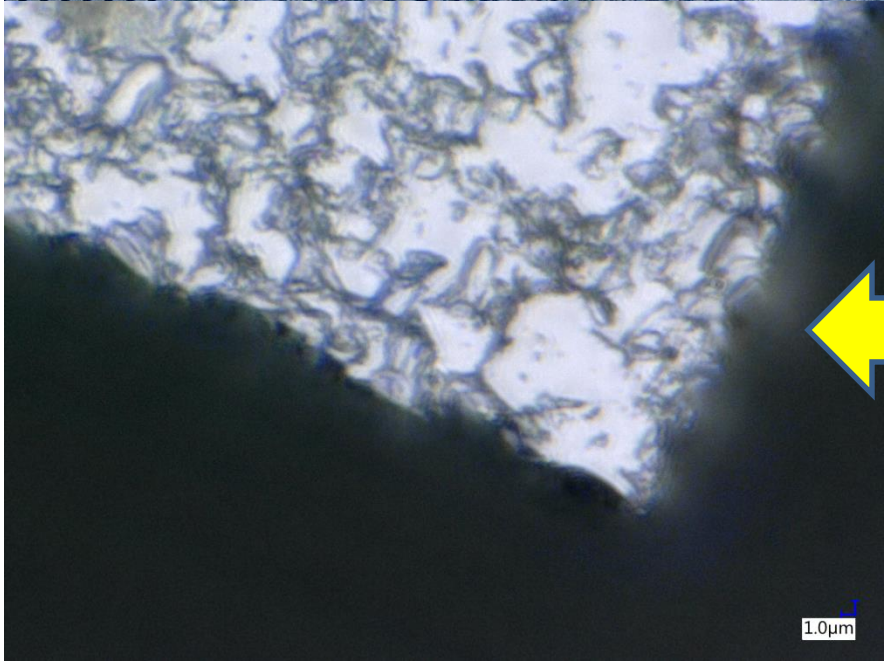
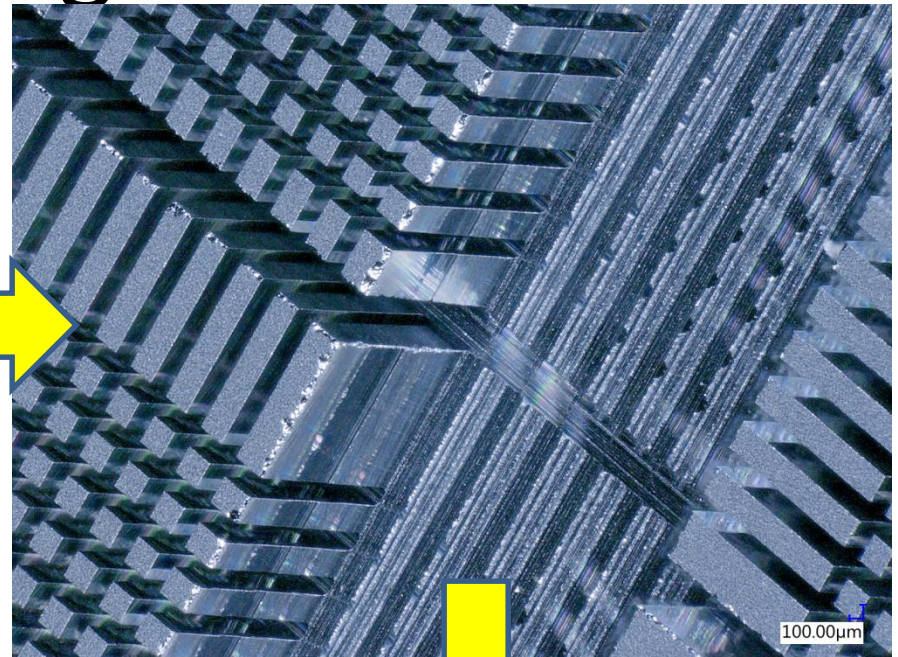
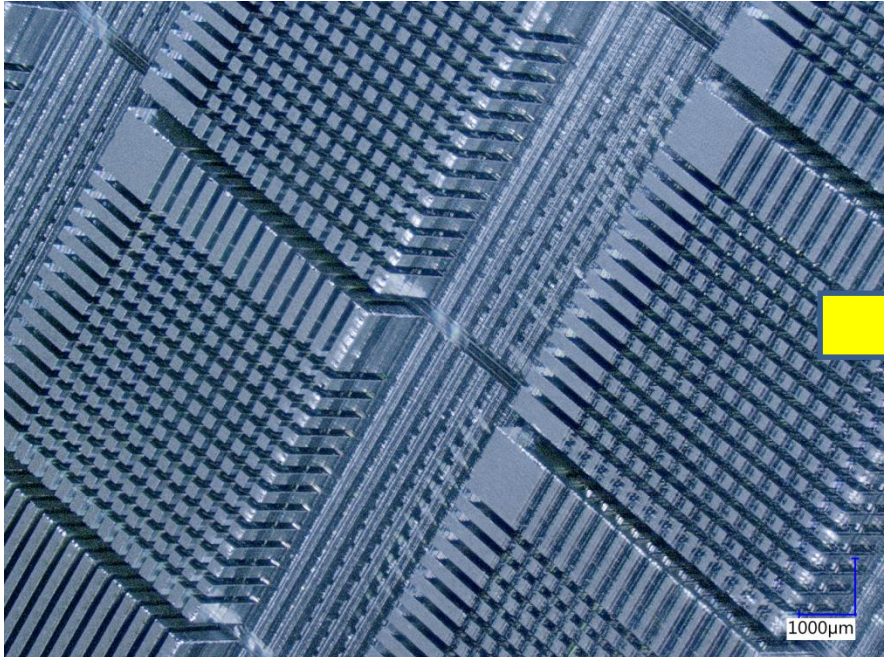
Lens: Z20:X100

500.00µm

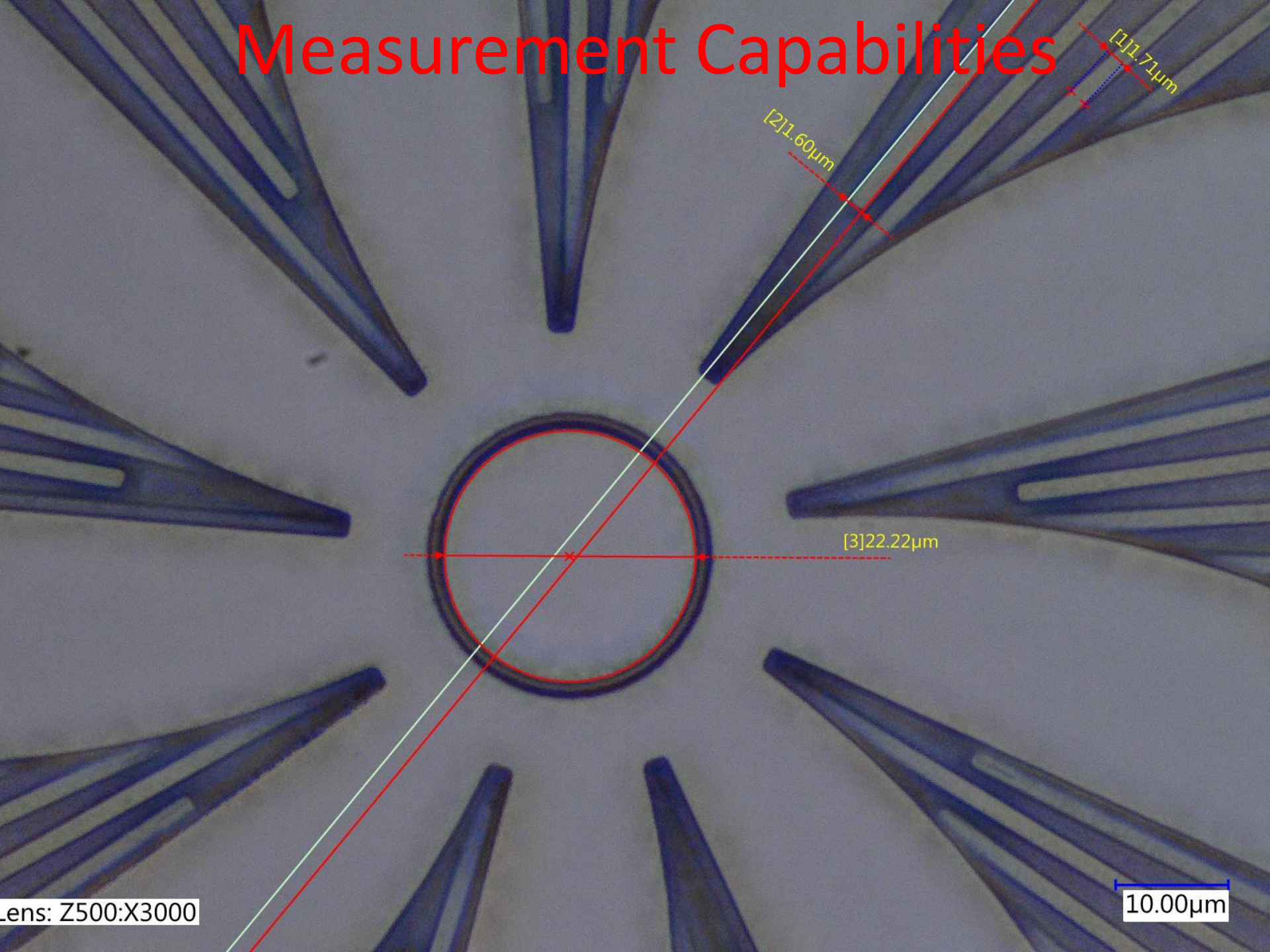
High Resolution 50 Megapixel Full Color Images + Image Stitching



20-5000x Magnification



Measurement Capabilities



Lens: Z500:X3000

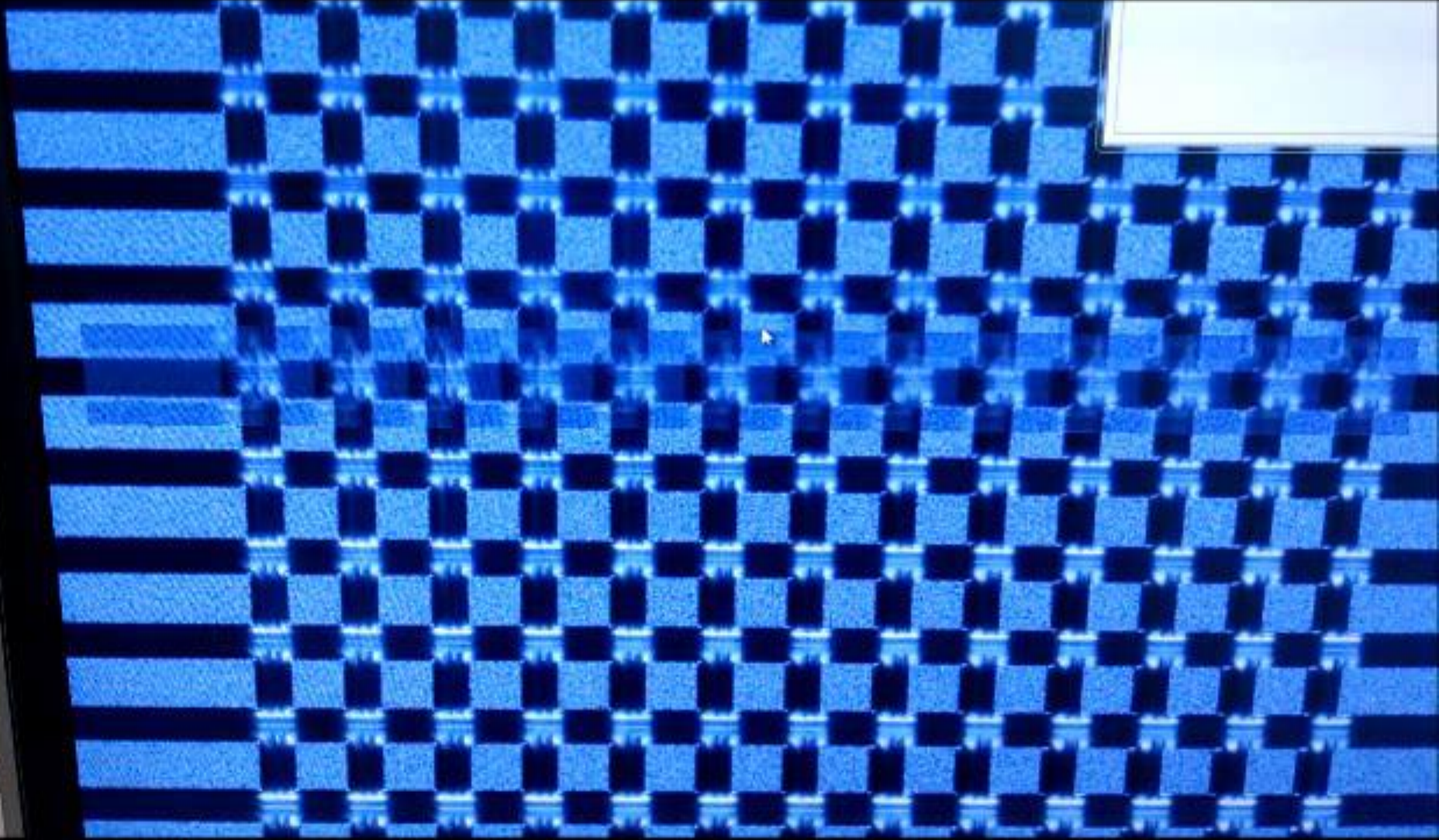
10.00μm

[3]22.22μm

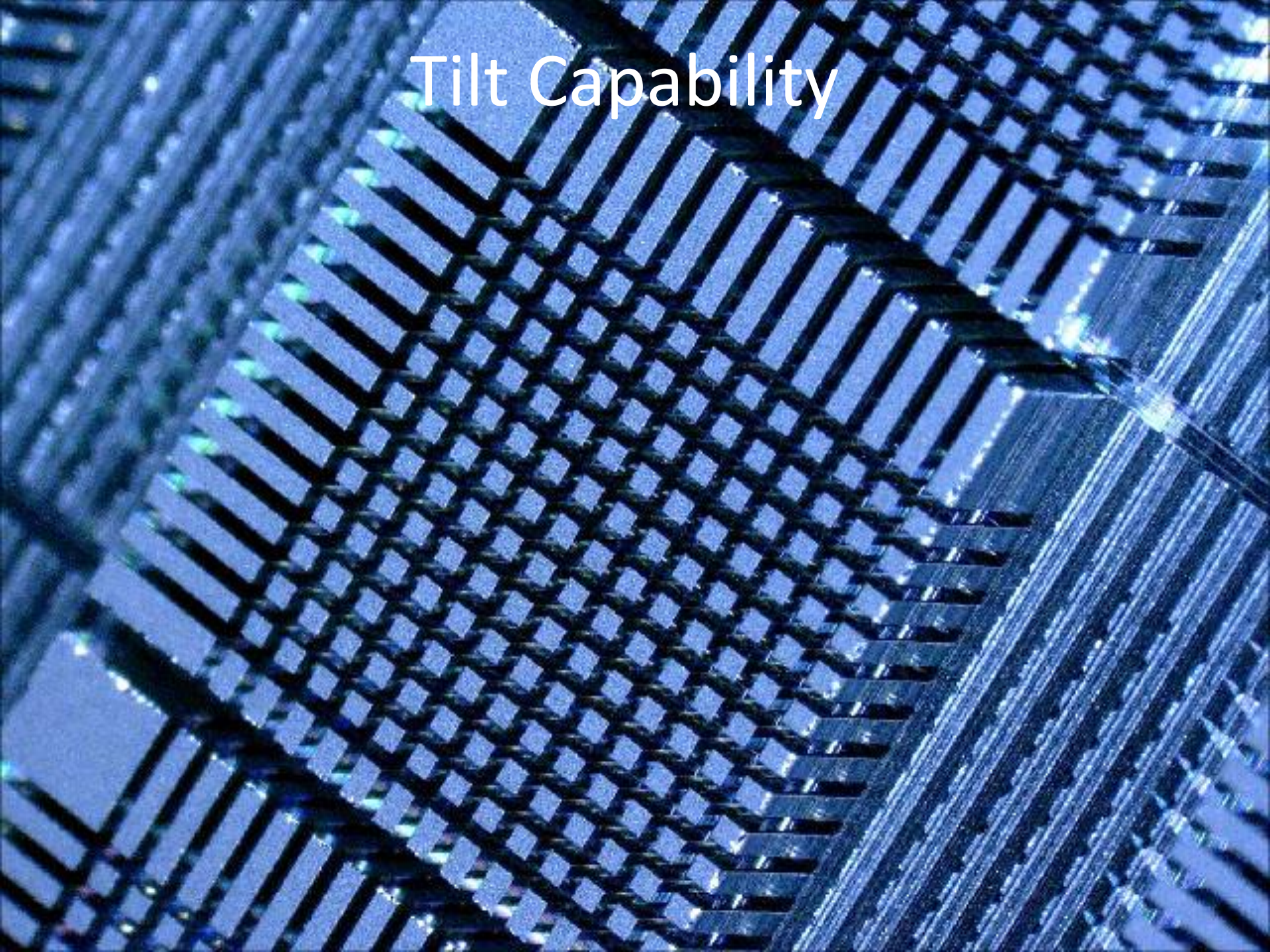
[2]1.60μm

[1]1.71μm

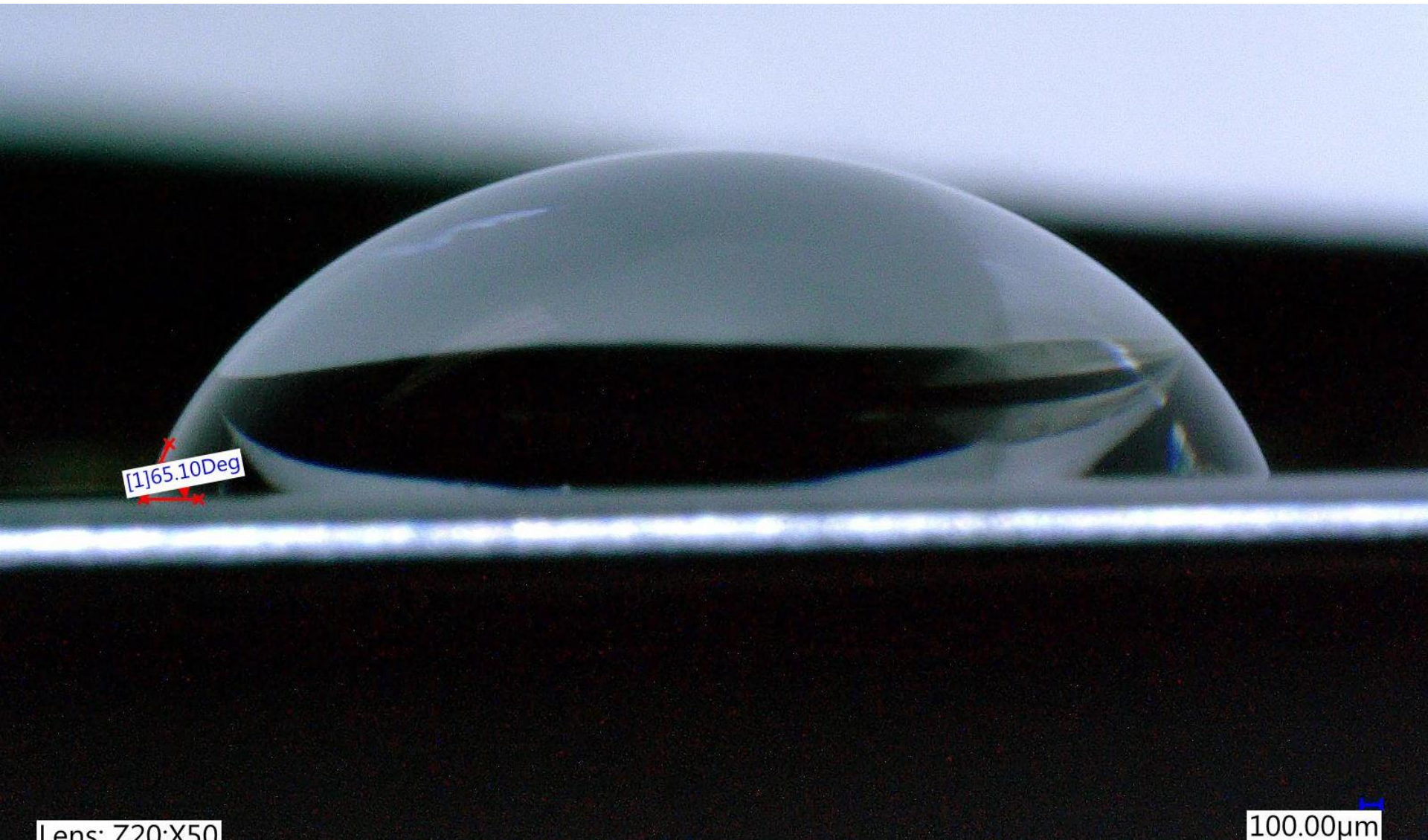
Template Measurements



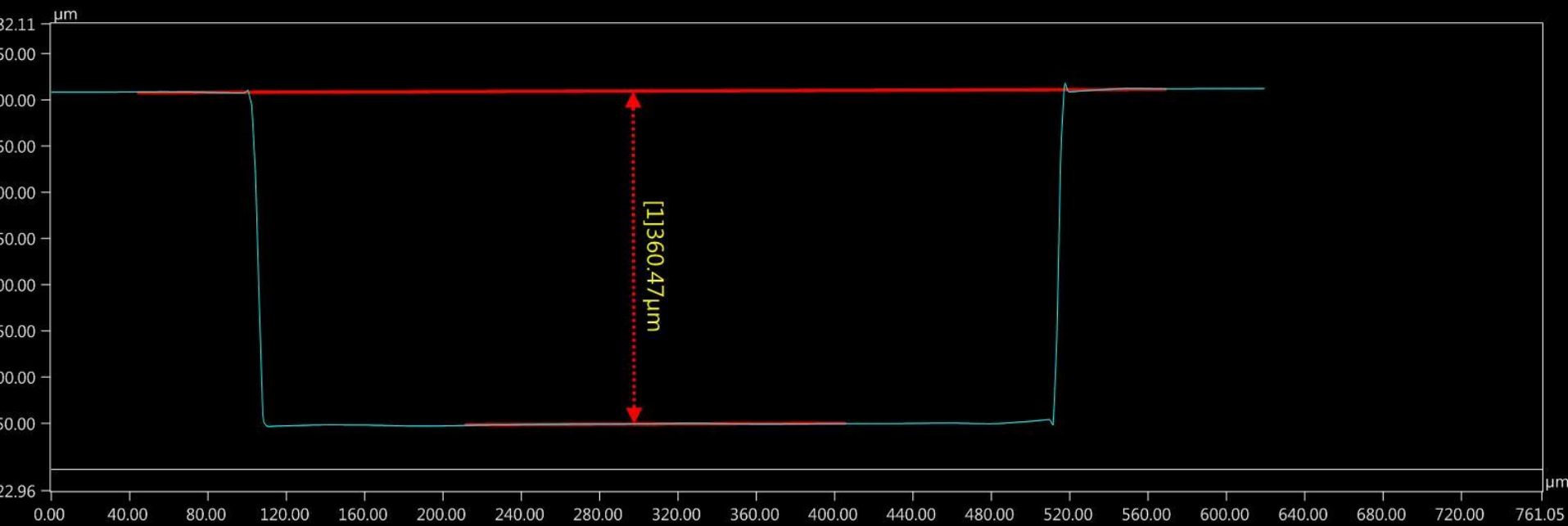
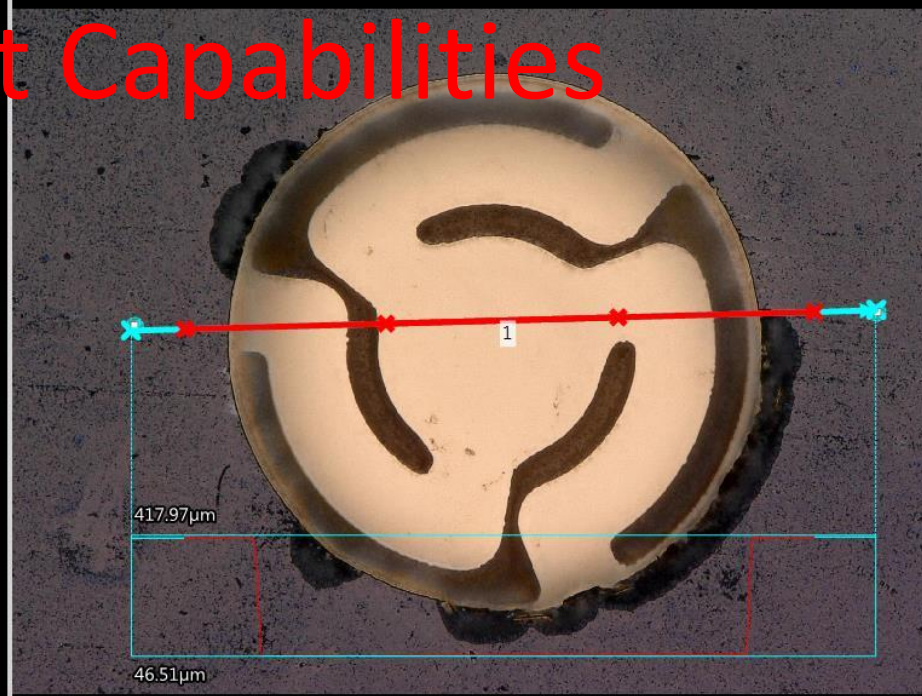
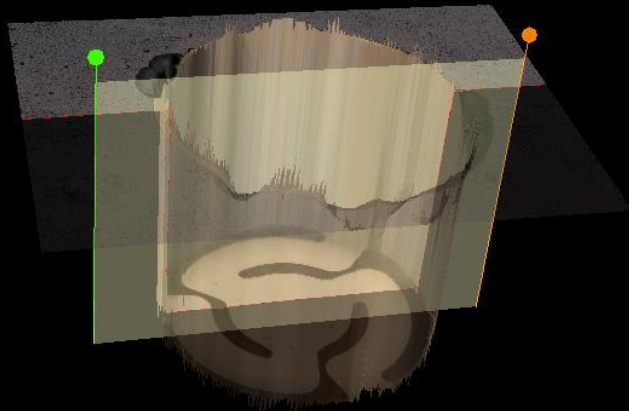
Tilt Capability



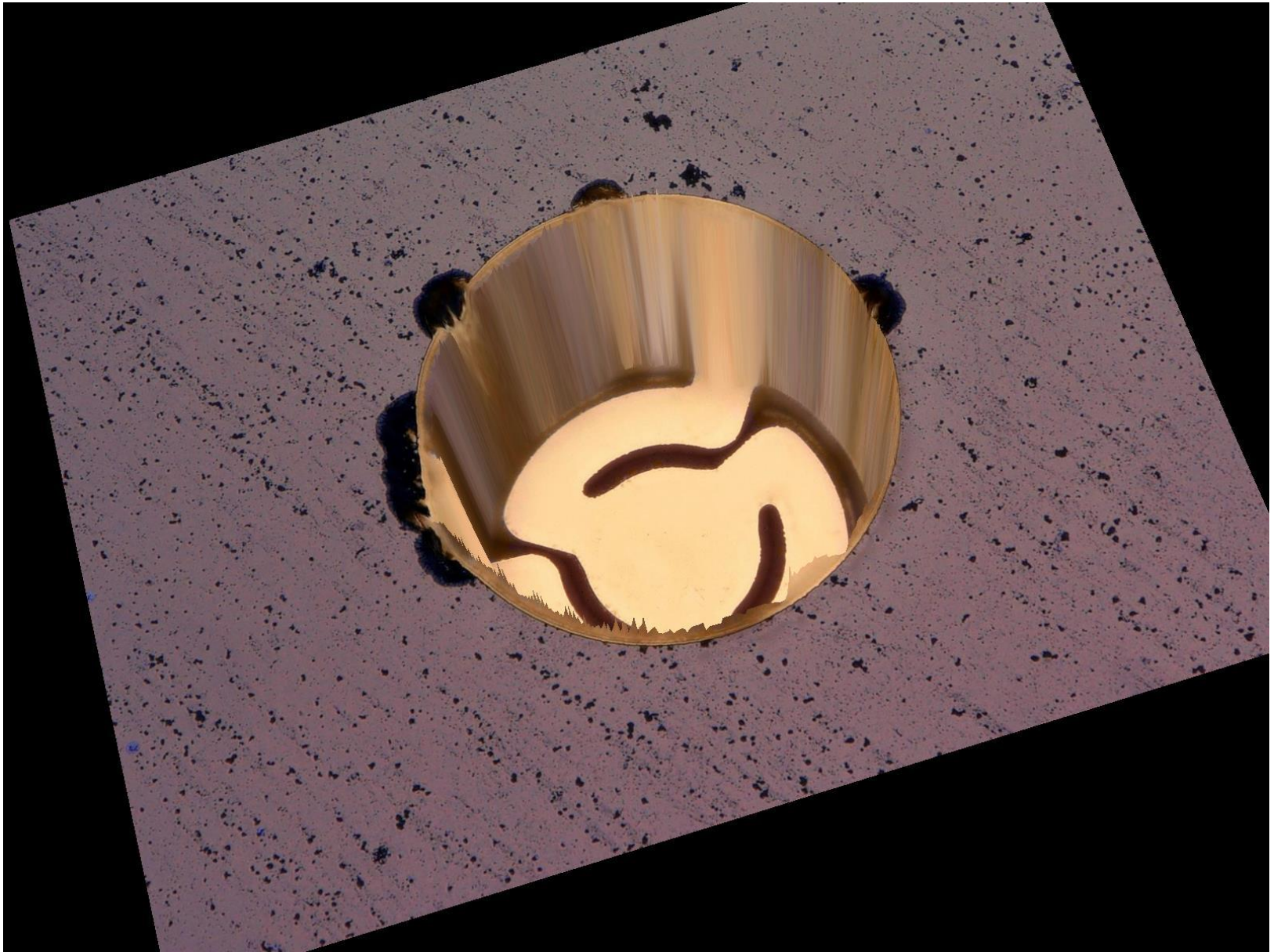
Contact Angle Goniometry



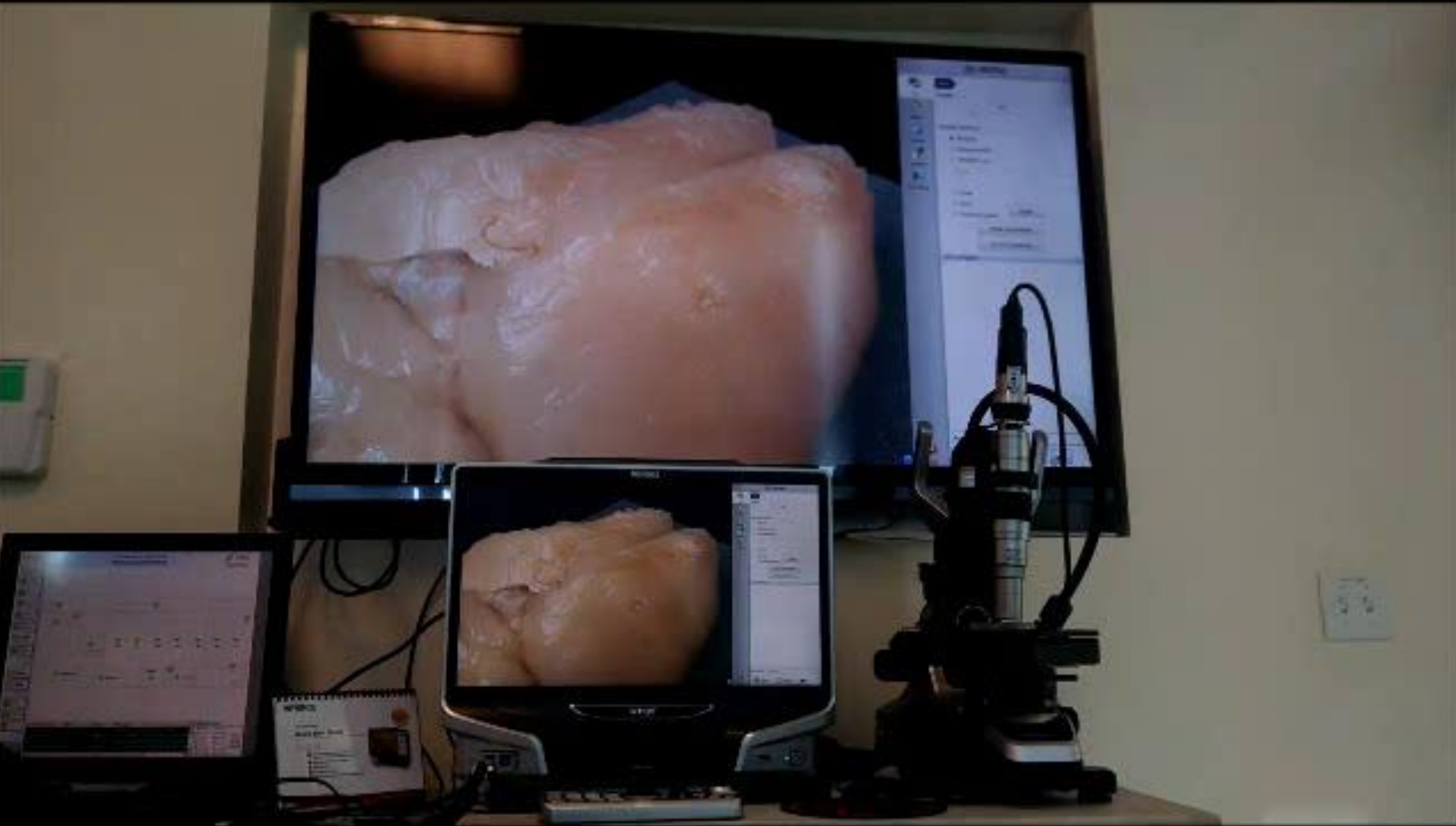
Measurement Capabilities



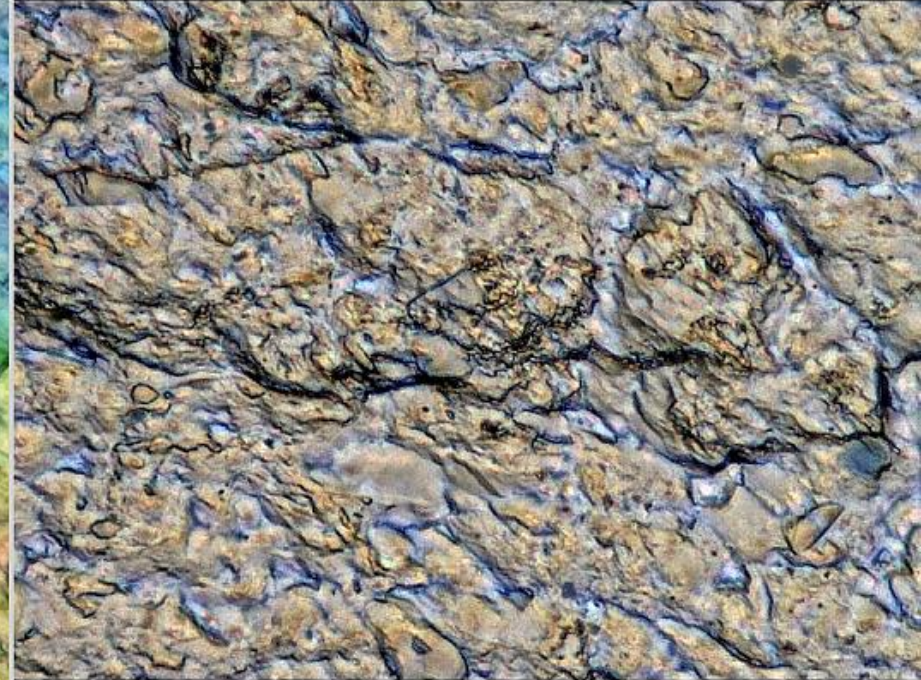
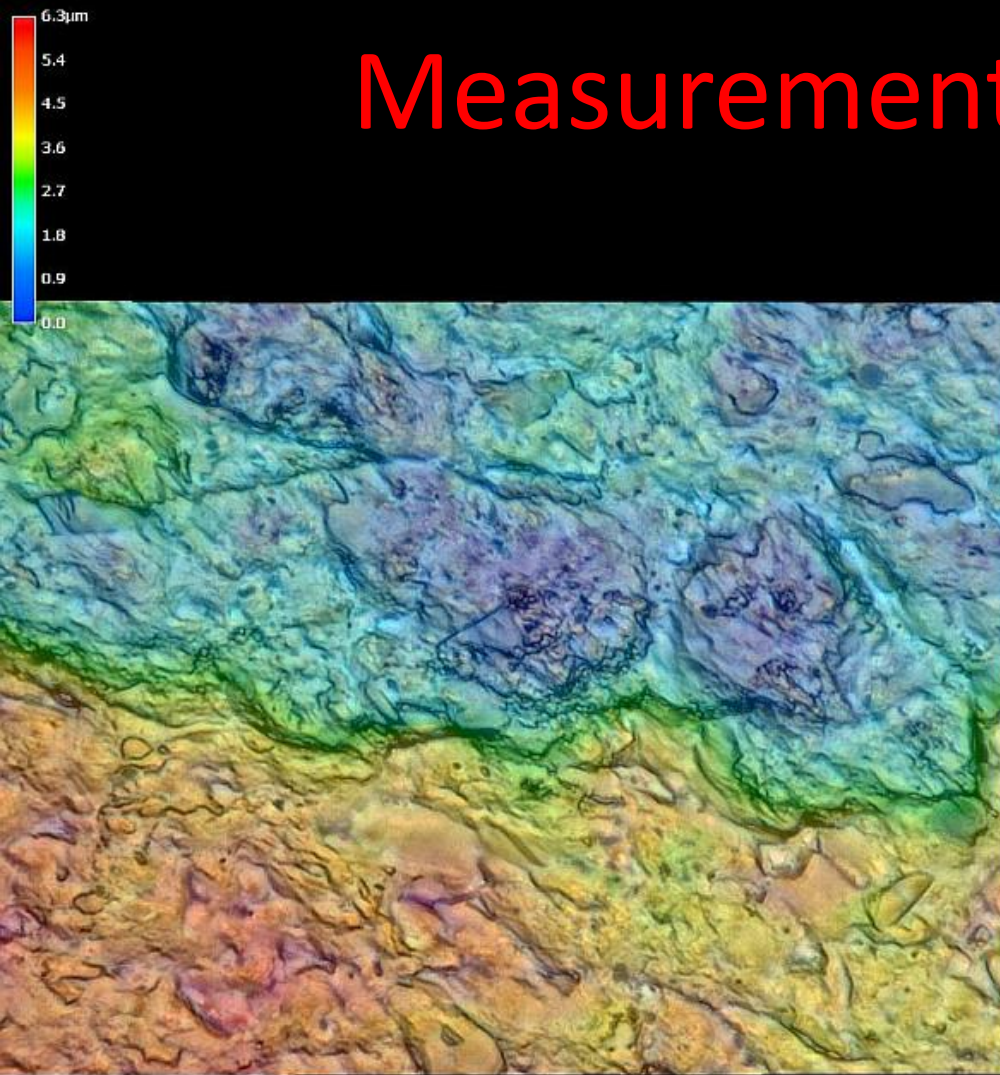
3D Surface XYZ Data Export



3D Surface Models



Measurement Capabilities



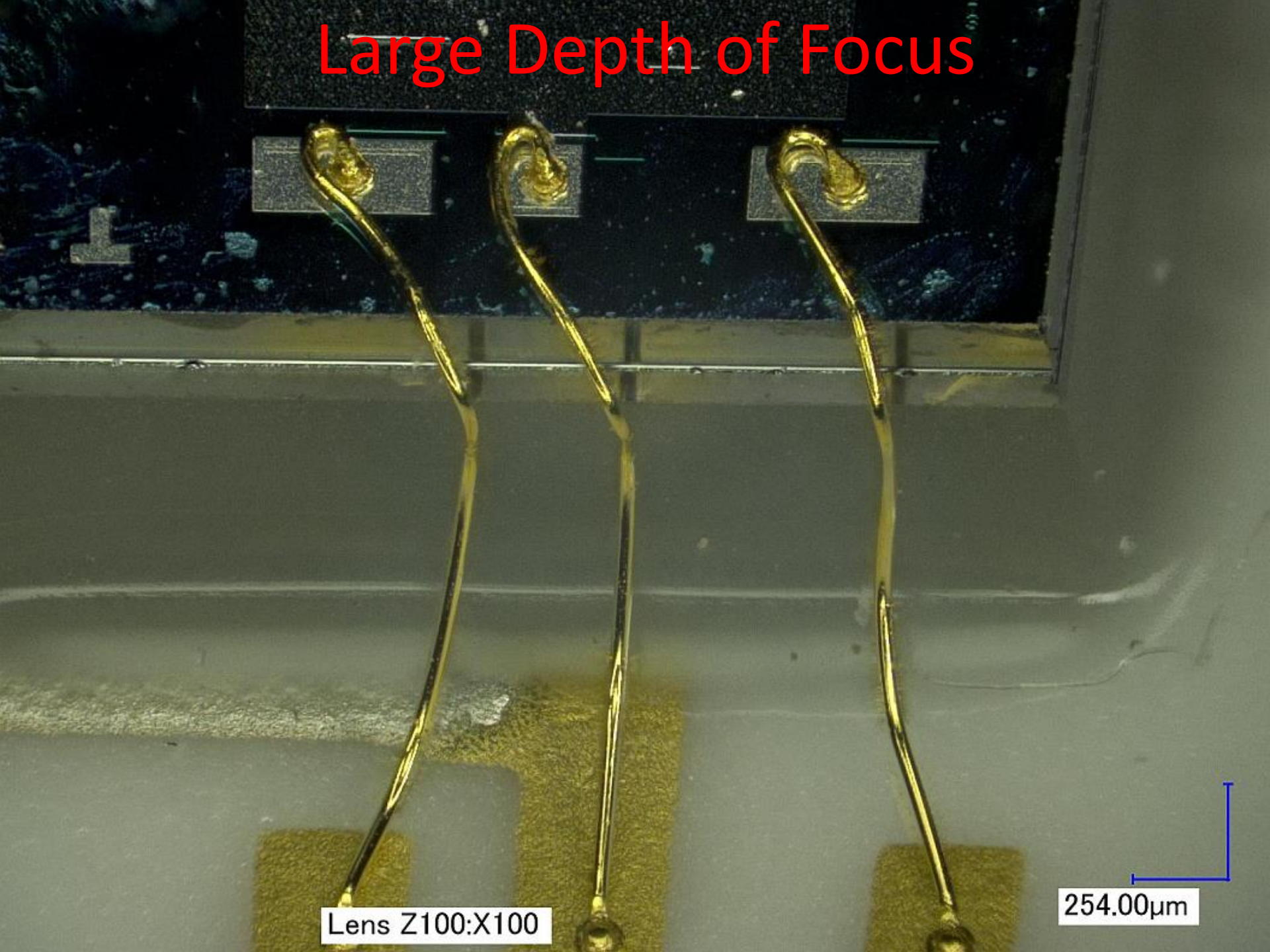
Glare Removal



Lens Z100:X100

254.00μm

Large Depth of Focus



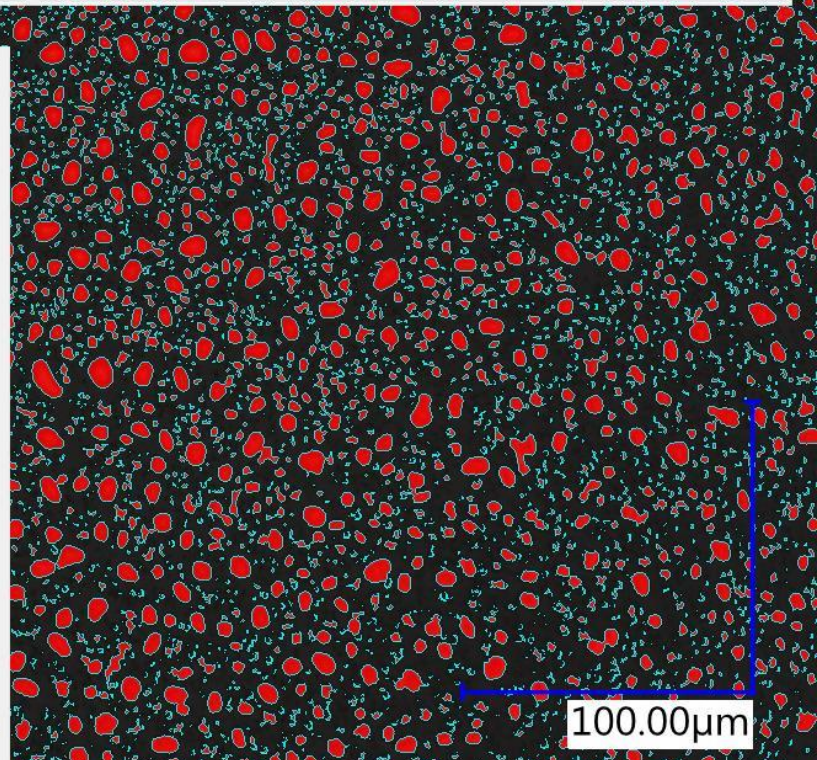
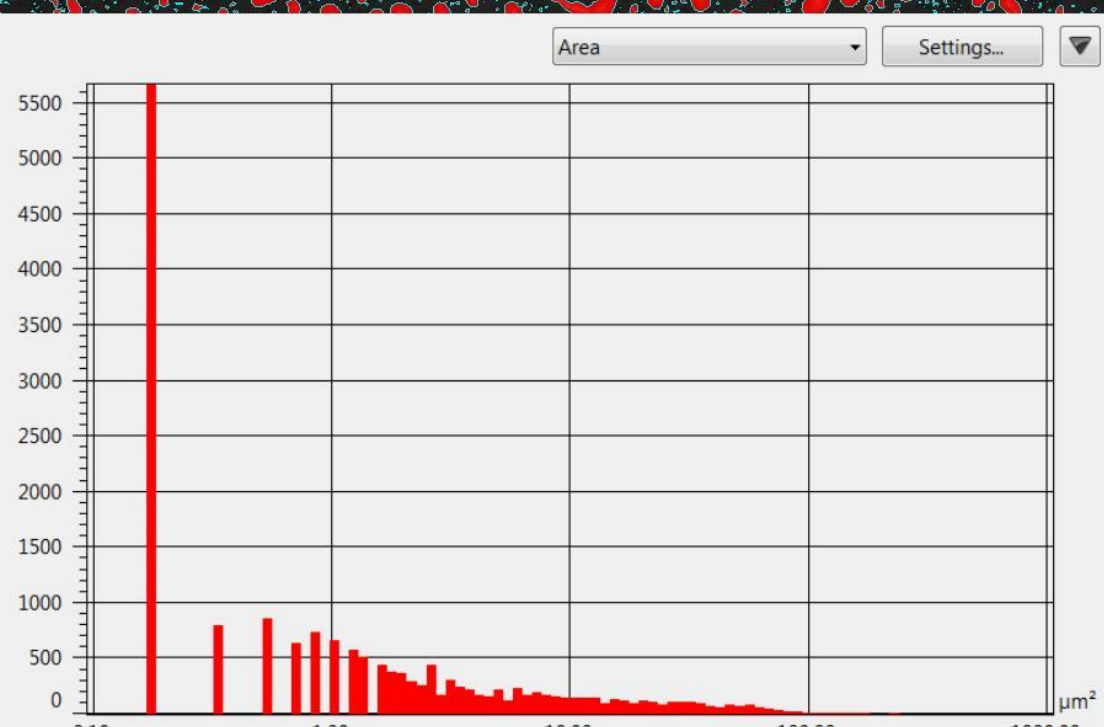
Lens Z100:X100

254.00μm

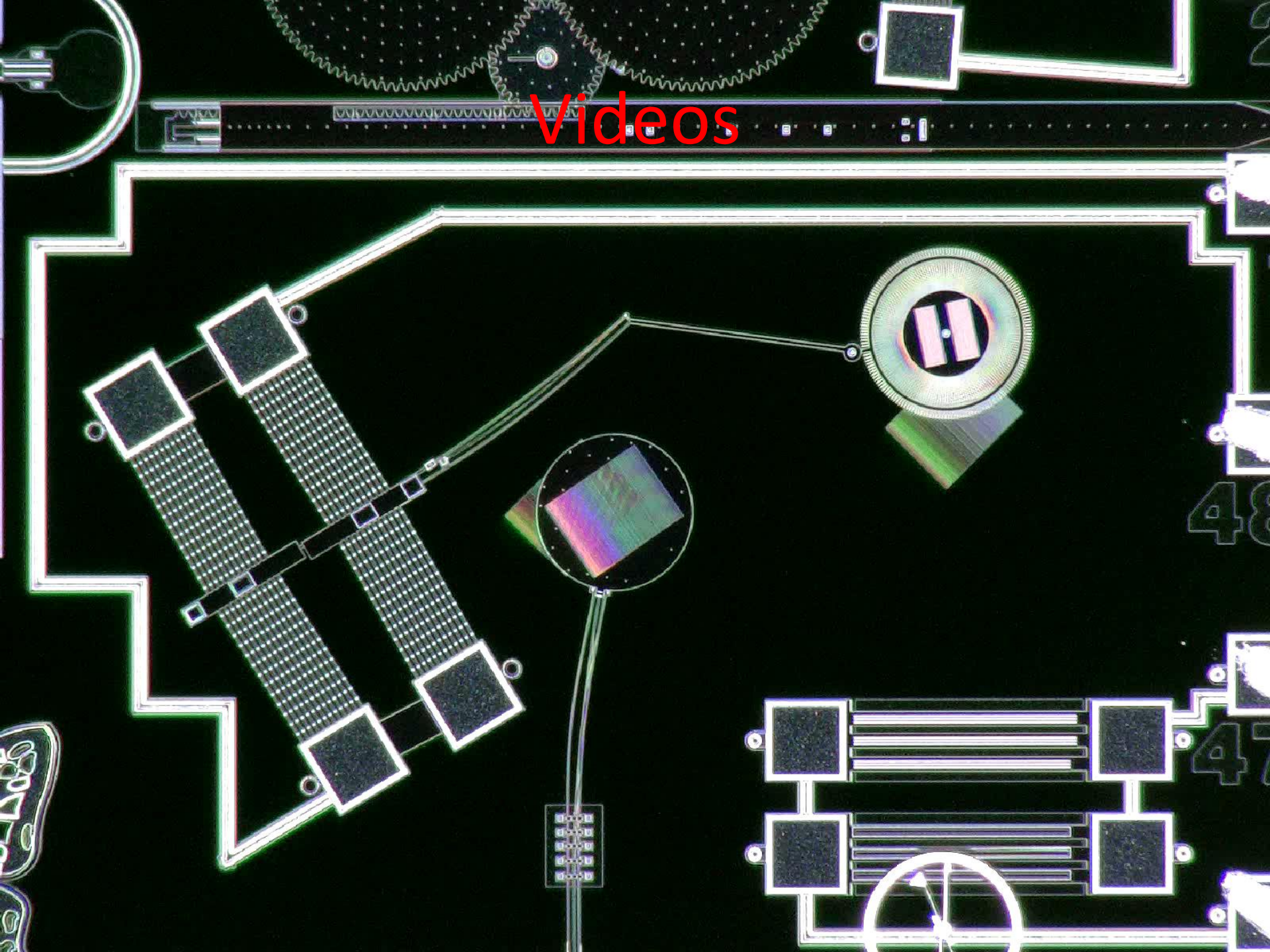
Particle Counting

No.	Area	Perimeter	Max diameter	Min diameter
7503	70.18 μm^2	60.14 μm	16.68 μm	7.93 μm
10336	49.84 μm^2	41.15 μm	16.68 μm	4.55 μm
16180	124.34 μm^2	49.10 μm	16.89 μm	10.20 μm
1755	68.92 μm^2	41.75 μm	16.94 μm	6.44 μm
2775	133.52 μm^2	47.09 μm	16.94 μm	9.67 μm
4446	109.94 μm^2	44.36 μm	16.94 μm	7.59 μm
11450	78.45 μm^2	60.10 μm	17.10 μm	8.15 μm
Average	5.66 μm^2	5.81 μm	2.04 μm	1.20 μm
Standard Deviation	13.39 μm^2	8.55 μm	2.81 μm	1.78 μm
Max	214.13 μm^2	111.08 μm	41.29 μm	12.28 μm
Min	0.18 μm^2	0.00 μm	0.00 μm	0.00 μm
Total	101617.31 μm^2	104330.98 μm	36612.68 μm	21529.04 μm

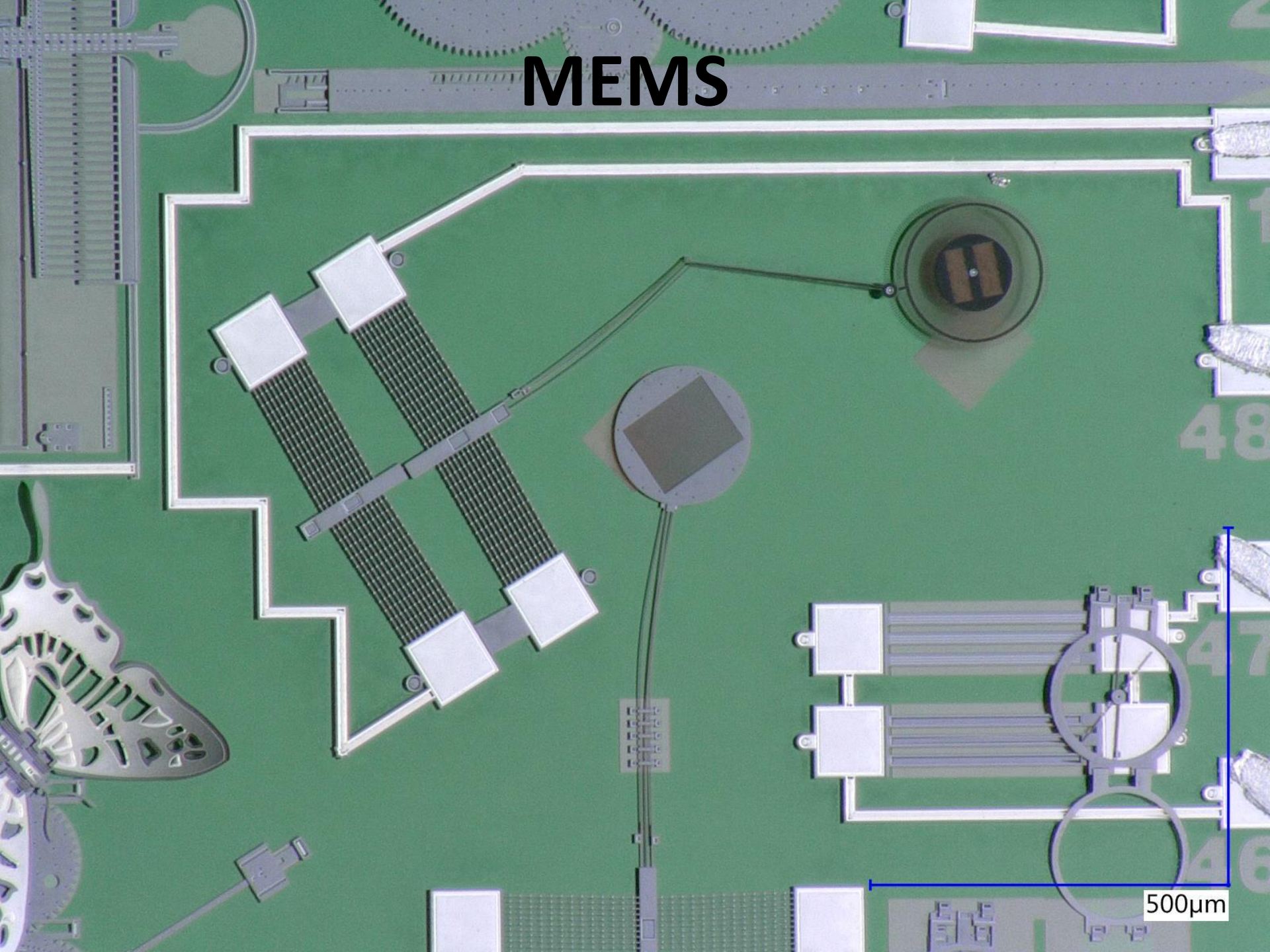
Count	Area	
17966 pcs	Total area	101617.31 μm^2
	Total region area	345489.61 μm^2
	Area ratio	29.41 %



Videos

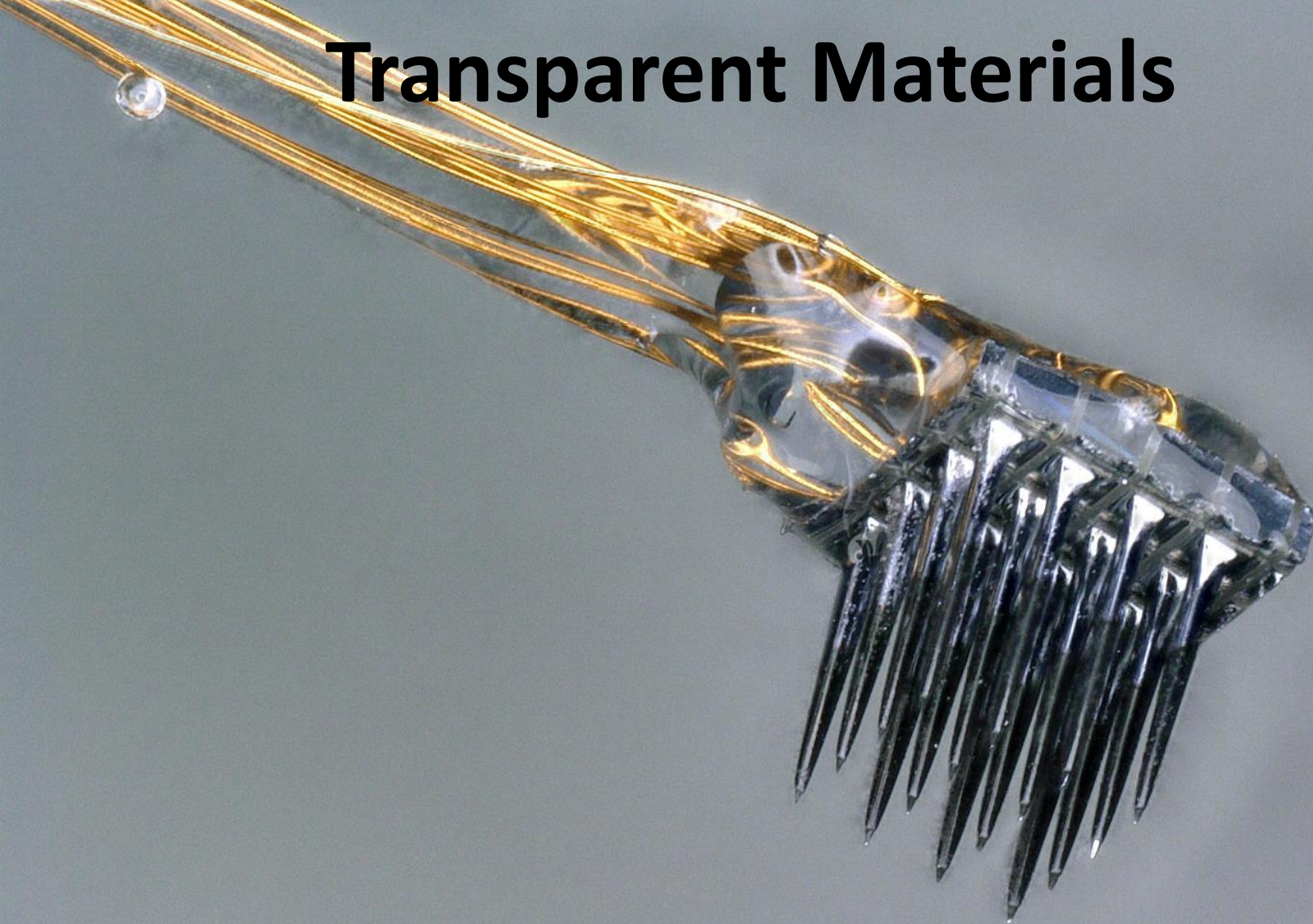


MEMS



500 μ m

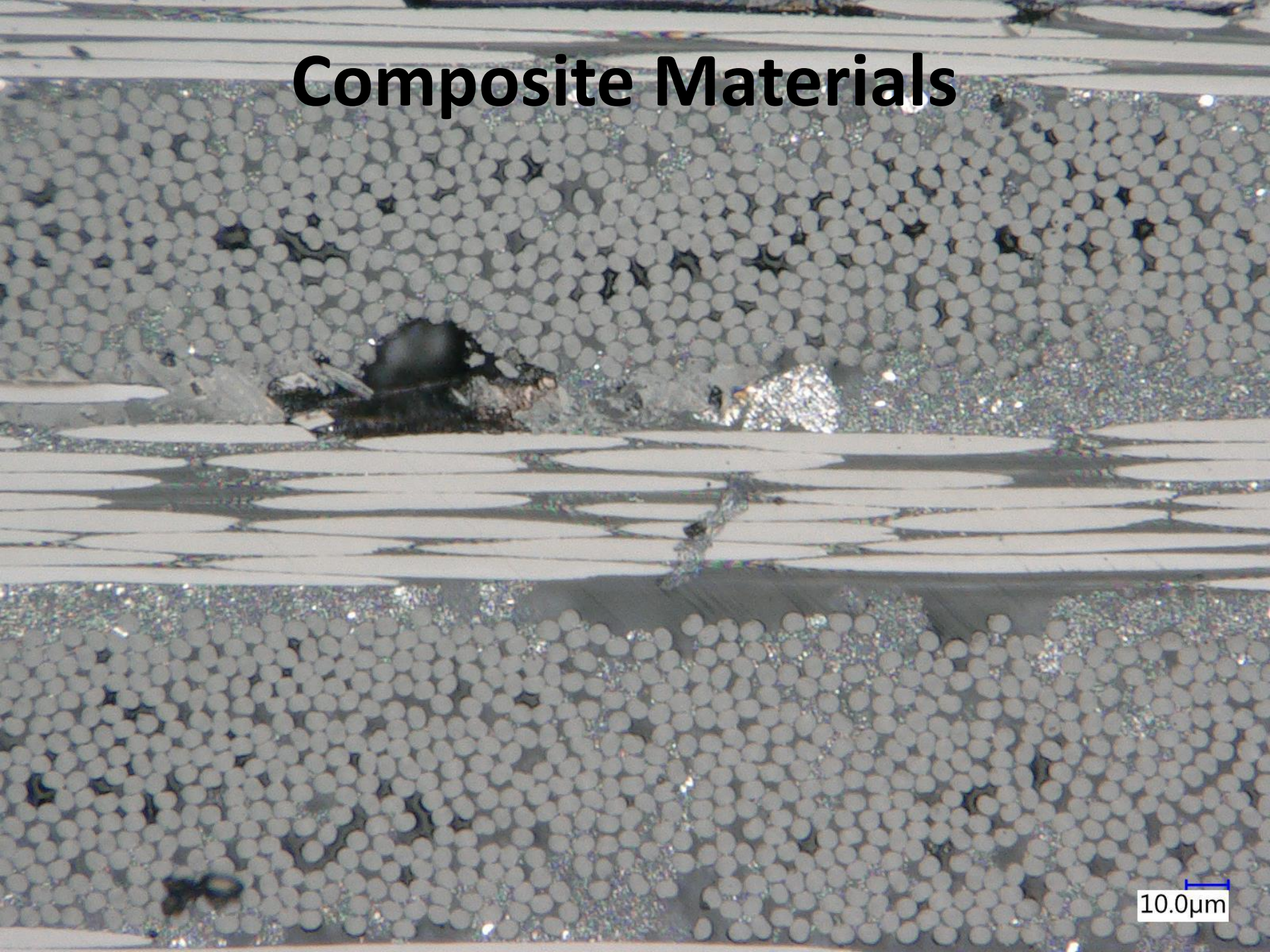
Transparent Materials



Lens: Z20:X50

500.00µm

Composite Materials



10.0μm

Backlight at 5000 x Magnification

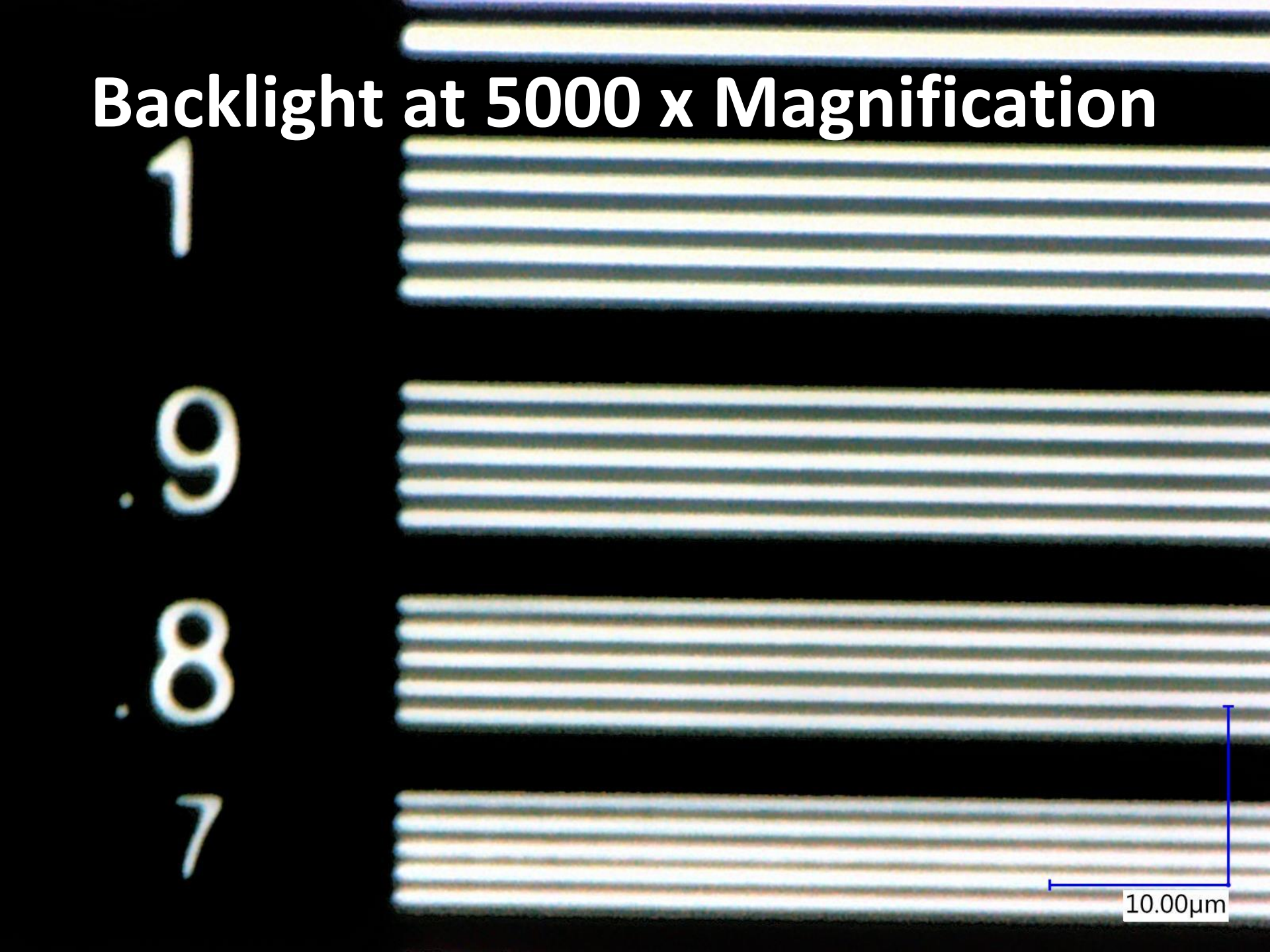
1

9

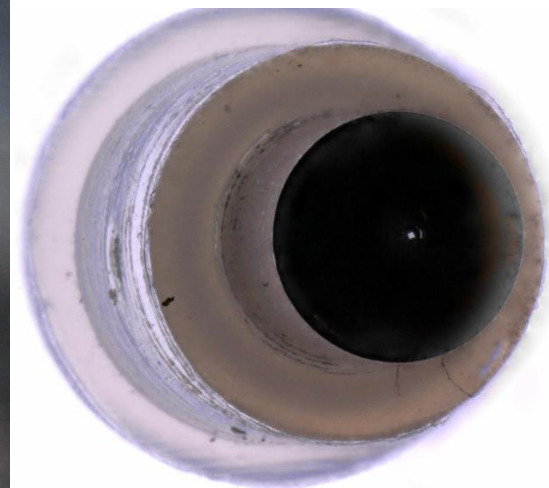
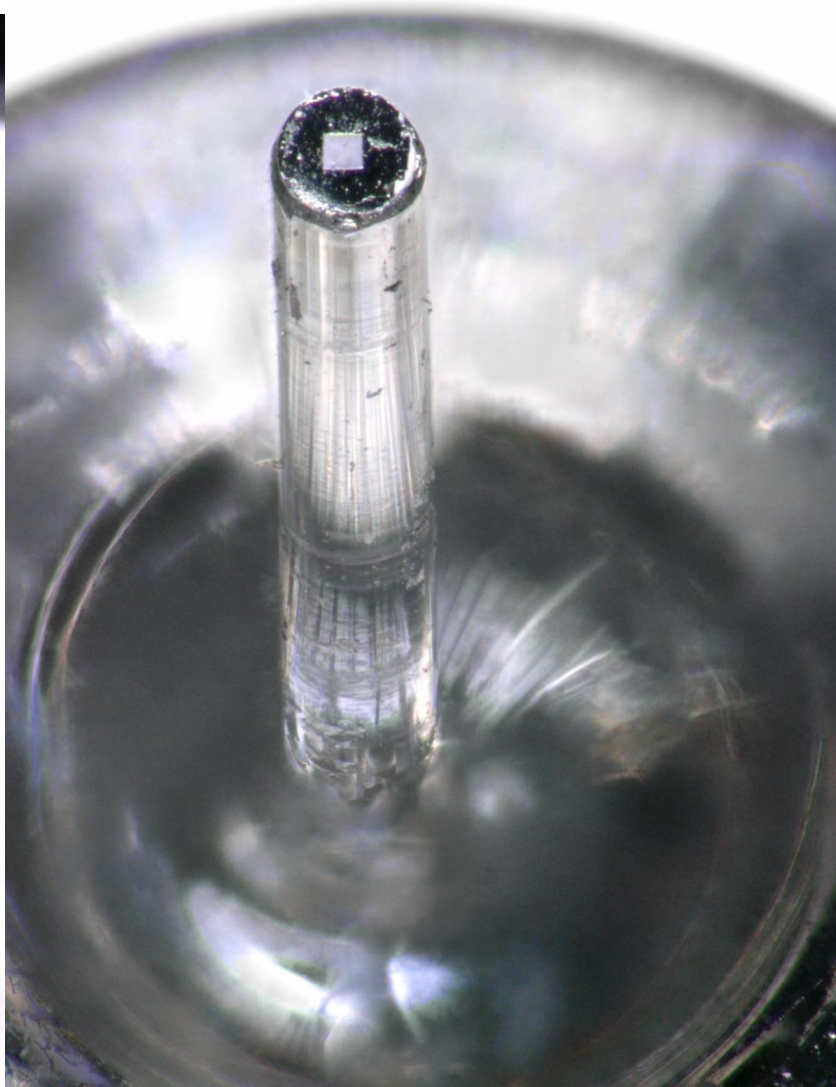
8

7

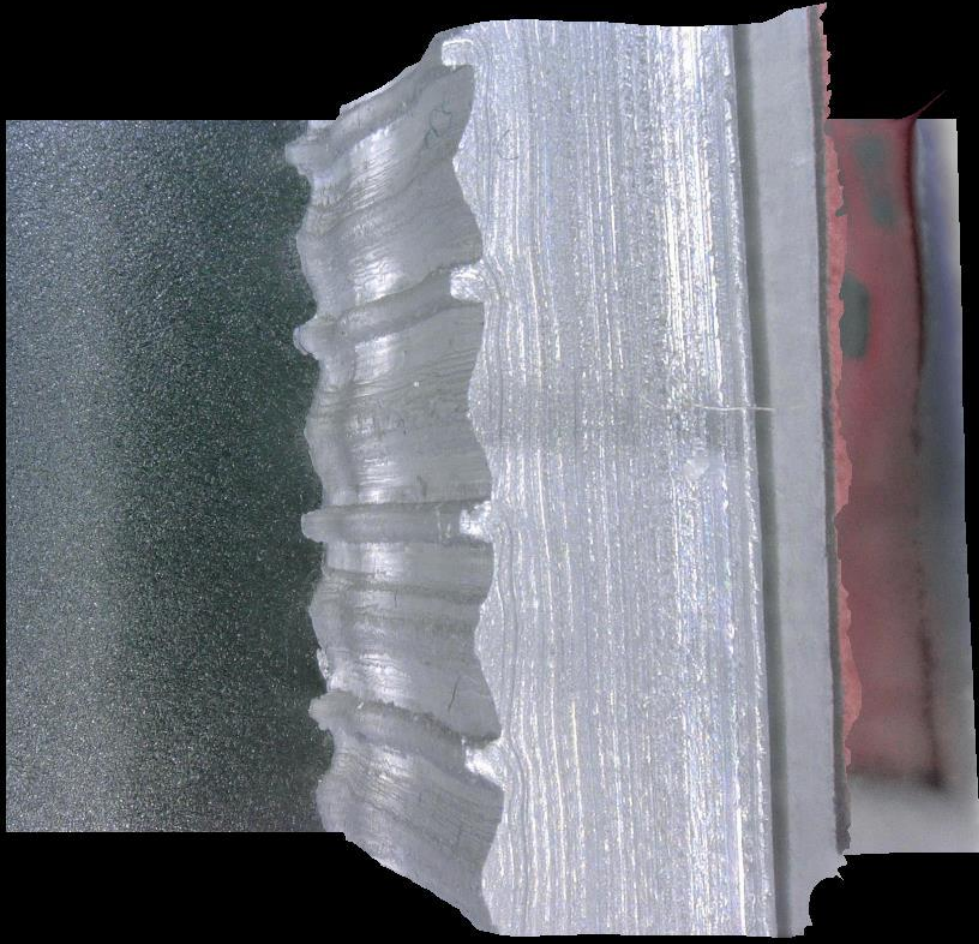
10.00μm

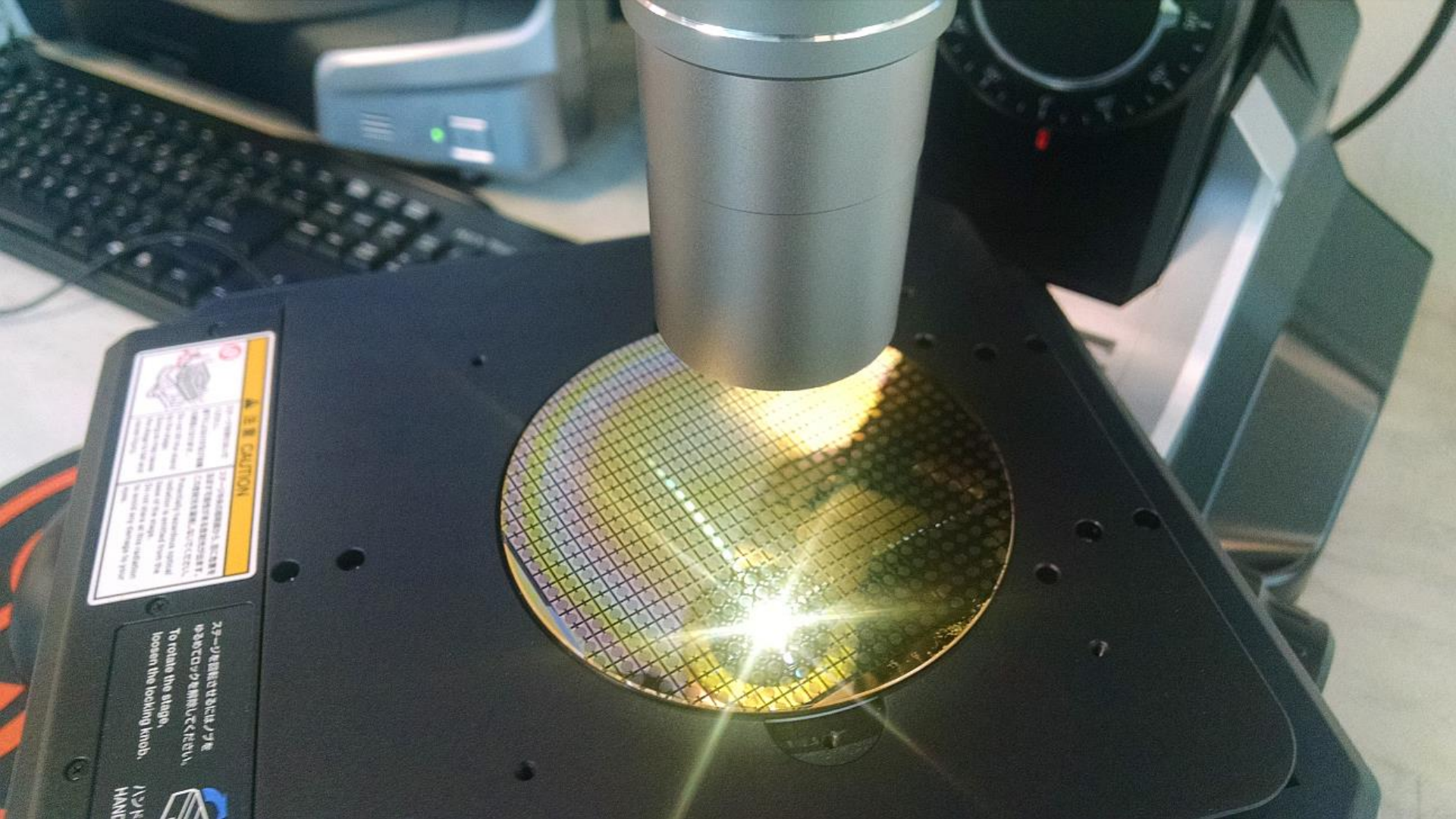
A high-magnification micrograph showing a grid of horizontal lines. The lines are arranged in four distinct groups, each corresponding to a number on the left: '1', '9', '8', and '7'. Each group consists of several parallel horizontal lines. A blue scale bar in the bottom right corner indicates a length of 10.00μm.

Multiple Magnifications and Angles



Cross-Sections





UTAH NANOFAB