How 3D optical microscopes help us to "feel" surfaces

21st November 2024

PORTFOLIO

Systems

NEW

NEW

S wide

S lynx

S neox **S** neox ◇ Five Axis

S neox ◇ Grand Format

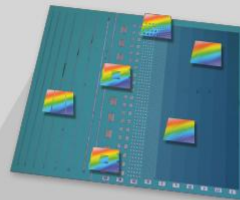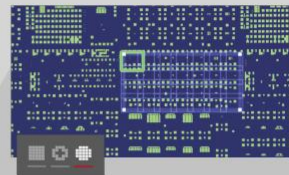**SENSOFAR**

S | wide

S WIDE

Fringe Projection
Technology

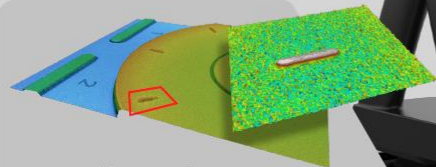## S wide
Surface Metrology

APM module
measurement automation

EMM module
Stitching

Digital zoom
Up to 6X for finer details

Large depth of focus
No Z-stitching

Large
field of view
in one single shot
35 x 29 mm

1 μm
Measurement noise

Telecentric lenses
extremely fast calibration

Color Camera
Full resolution 5 Mpx

Large areas
Up to 300x300 mm

BANKNOTES RECOGNITION

How people with visual impairment know the value of banknotes?

Tactile marks

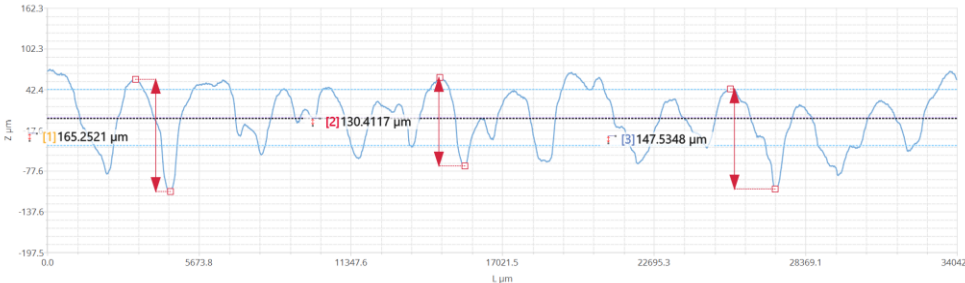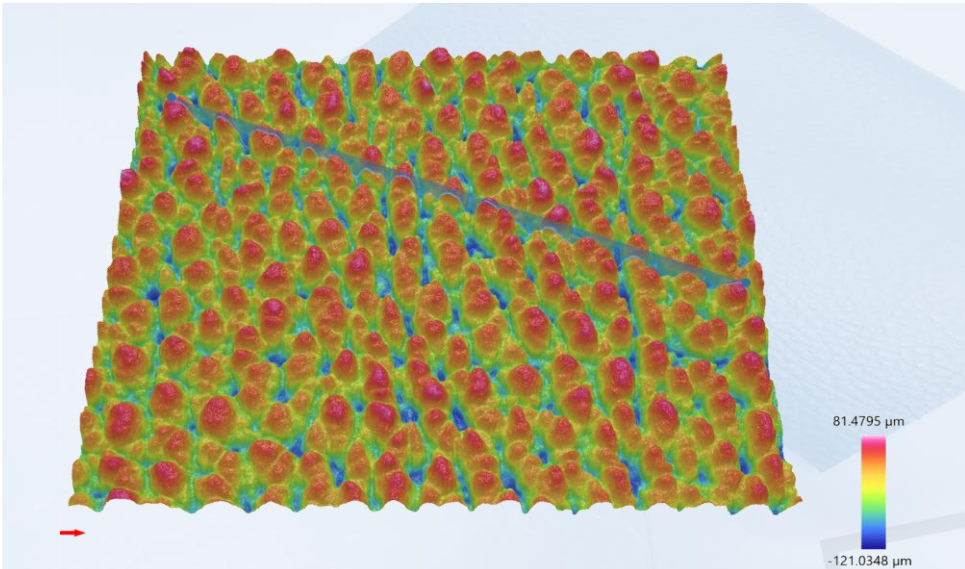Using our S wide Fringe Projection microscope, found tactile marks to be 30 microns in **height**.

CUSTOMIZING LEATHER GOODS

Leather laser engraving

S wide provides detailed visualization of the resulted textured leather to **control the geometry and dimensions** provided by the engraving process
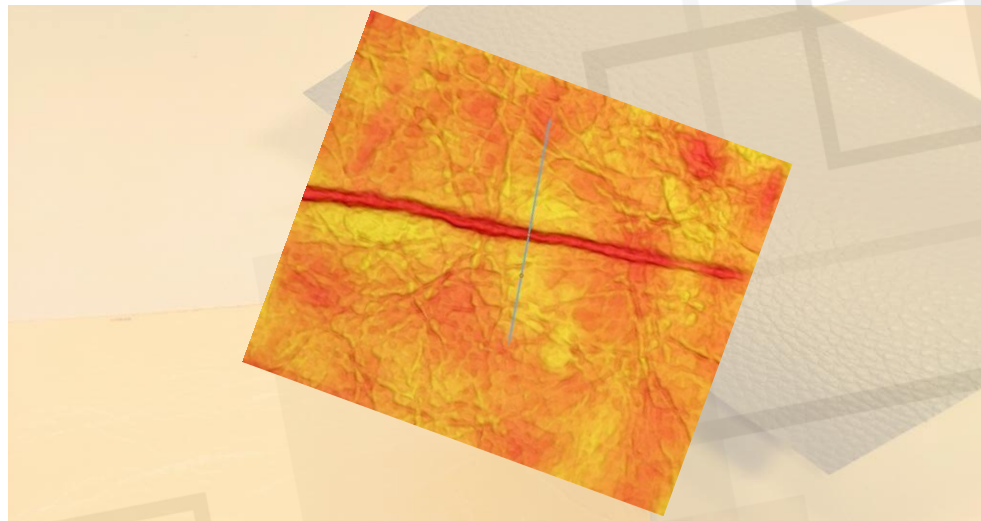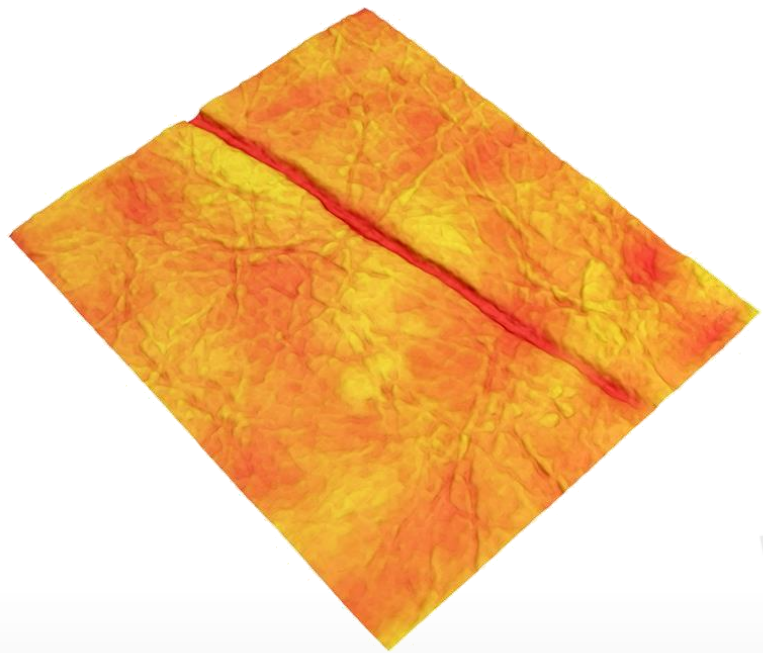
Laser engraving: Cutting edge technology that allows custom designs on leather goods with exceptional precision, repeatability, speed and durability.
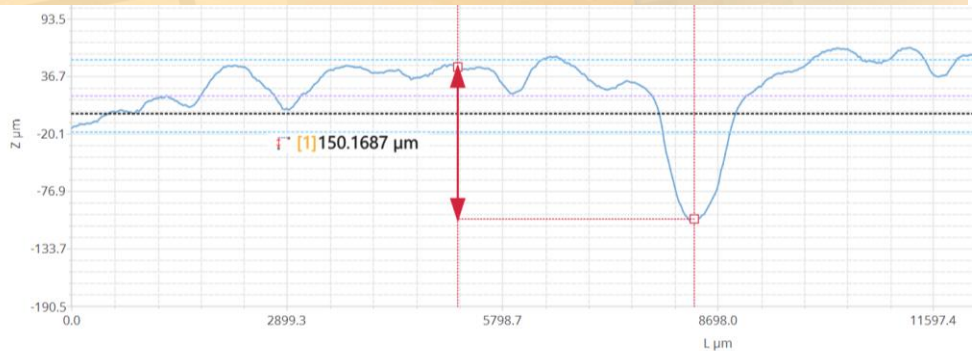
CUSTOMIZING LEATHER GOODS

How designers choose the cloth for their unique designs?

**Based on defects and feels**

SENSOFAR

With the S wide, several leather textures were analyzed for **defects inspection** and **roughness** determination, for further modifications on the fabrication process.

DESIGNING TOILET PAPER

Liquid absorption

The **design and texture** of toilet paper significantly influence their **absorbance capabilities**. Creating patterns on the surface of the paper, increases the surface area available for liquid absorption.
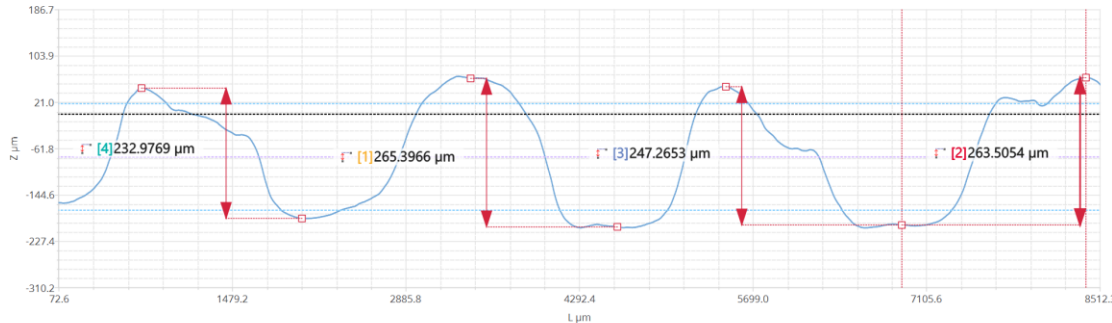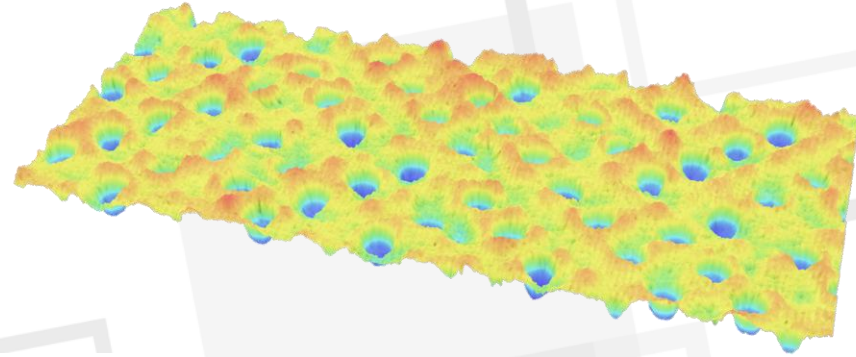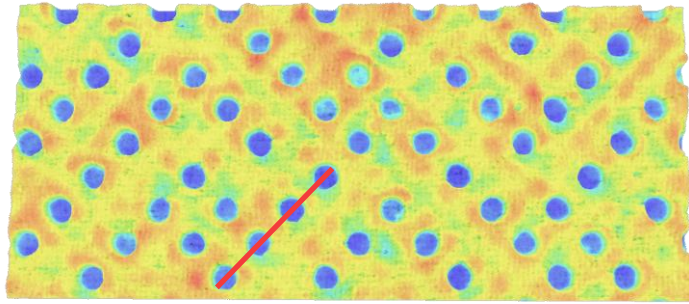
The patterns on the surface of the paper were scanned with the S wide and analysed with SensoPRO.

DESIGNING TOILET PAPER

Liquid absorption: pores recognition

SENSOFAR

SensoPRO allows the **automatic recognition of the pores** and extraction of its dimensions together with statistics

Parameter	Average	St. Dev.	Unit
X	15944.3	8830.56	µm
Y	7058.47	4913.41	µm
Area	158888	359344	µm²
Volume	8.29385e+06	2.04925e+07	µm³
Perimeter	855.411	1737.95	µm
SizeX	201.455	413.439	µm
SizeY	199.345	417.915	µm
Circularity	0.620088	0.535668	µm
MaxLength	220.945	445.99	µm
MaximumHei…	28.8743	43.0435	µm
MaximumHei…	1.53705e+38	1.69567e+38	µm
MeanHeight…	77.526	58.6263	µm
AspectRatio	0.256249	0.393576	
Diameter	200.638	403.078	µm
AreaRatio	1	8.44873e-15	µm²/µm²
Spd	-	-	1/µm²
Svd	8.06649e-07	0	1/µm²
Sp	-	-	µm
Sv	124.628	1.42294e-14	µm
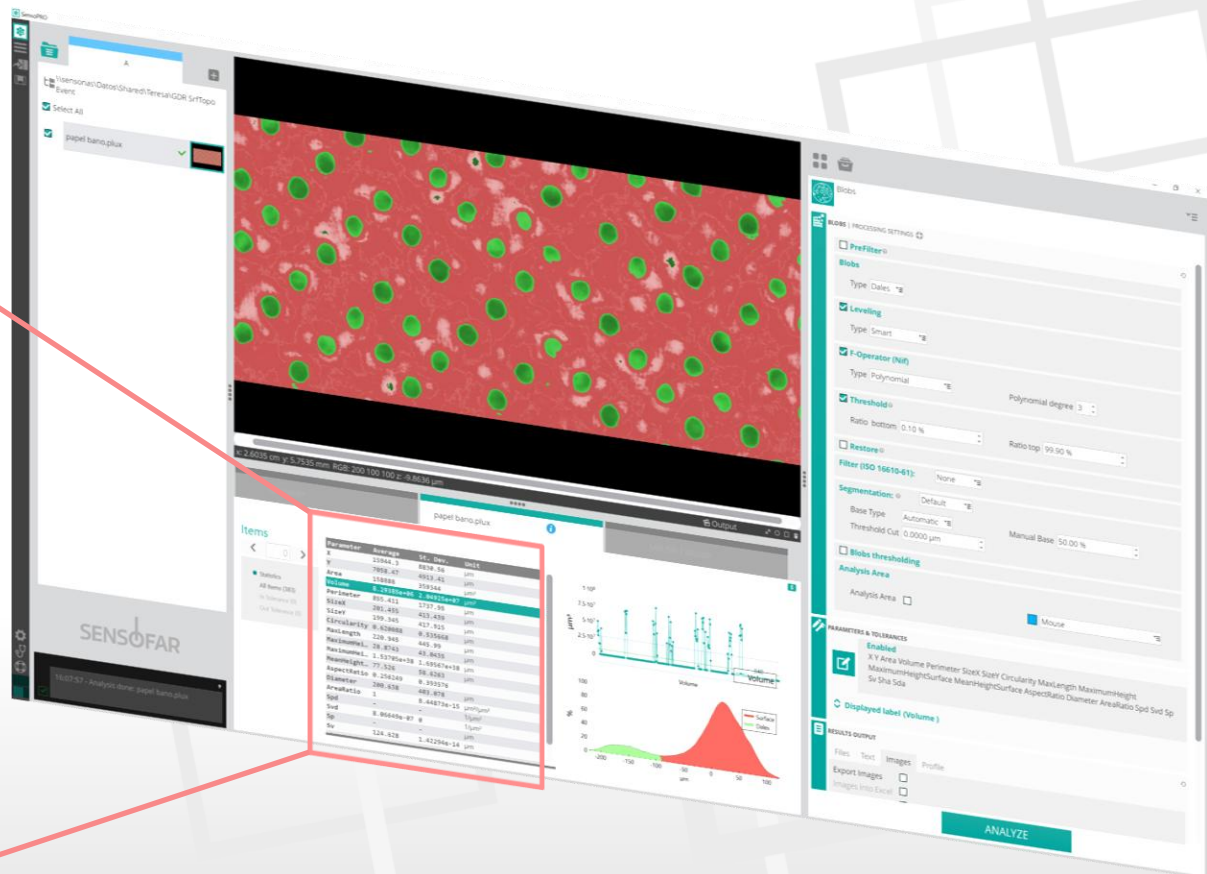
TAKE HOME MESSAGES

SENSOFAR

- The variety of 3D optical profilometers offered by Sensofar, together with the several technologies included, allows the systems to reach and solve a wide range of markets and applications.

- S wide system, using Fringe Projection technique acquires fast measurements of big samples with high data detail.

- S wide provides valuable information of different daily used goods related to touch, such as roughness, defects or features characterization.