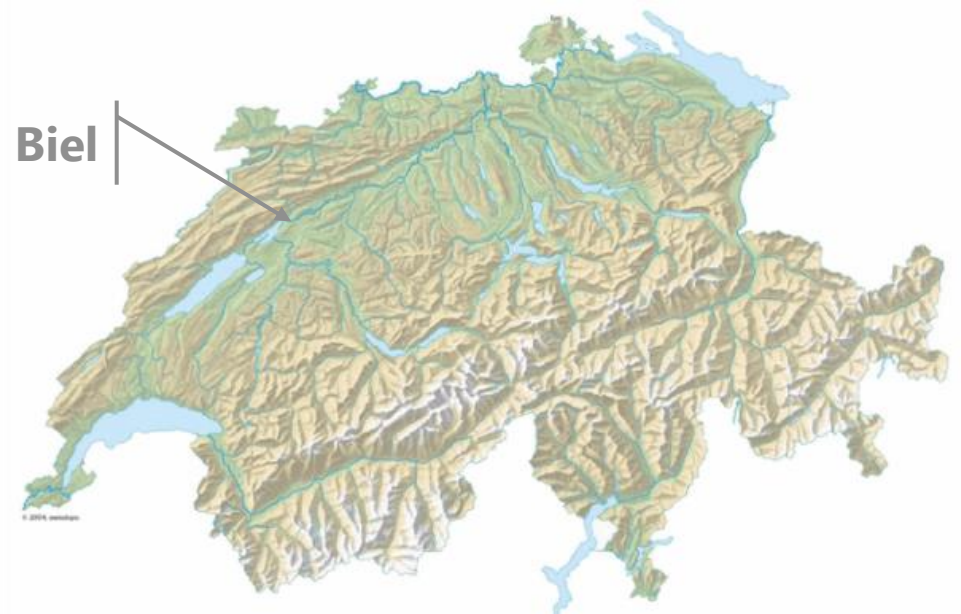
Micromachining with **Femtosecond Laser Technology** from **Posalux**

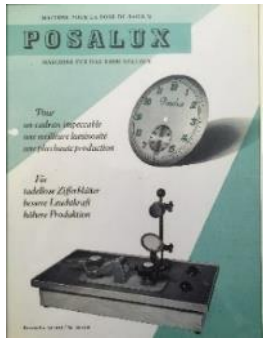
Posalux is a leading Swiss machine manufacturer for high precision "micro machining" within mass production environment

- We are **machine manufacturer** located in the heart of the Swiss watchmaking industry
- Our machines are well known for their **long-lasting quality** and **reliability**
- We strive for **market leadership**

- Subsidiaries in Germany, Italy, Korea, Taiwan, USA
- Worldwide network of sales and service



1943

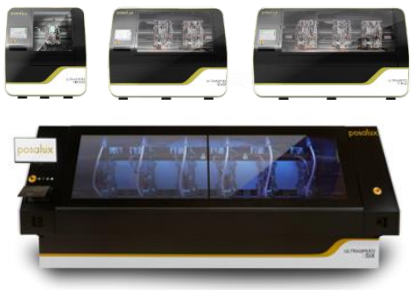


put the **light** (Radium) on Watch dial

posare **lux**

posalux

2022



1961

First
hole drilling
PCB

1977

First CNC
hole drilling
automotive

1997

HP4-EDM
hole drilling
automotive

2013

Femtosecond Laser
hole drilling
automotive

2018

Femtosecond Laser
drilling
electronic
(test industry)

2021

Ultimate
Mono / Duo
drilling / milling
electronic
(test industry)

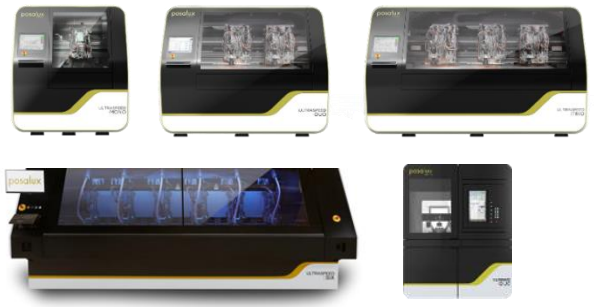
2022

Femtosecond Laser
turning
electronic
(test industry)

Innovation continues…

Femtosecond LASER

- Electronic Test Industry
- Automotive Industry (spray hole drilling)
- Medical
- New, …



Mechanical Micro-Machining

- PCB
- Electronic Test Industry

EDM (Electrical Discharge Machining)

- Automotive Industry (spray hole drilling)

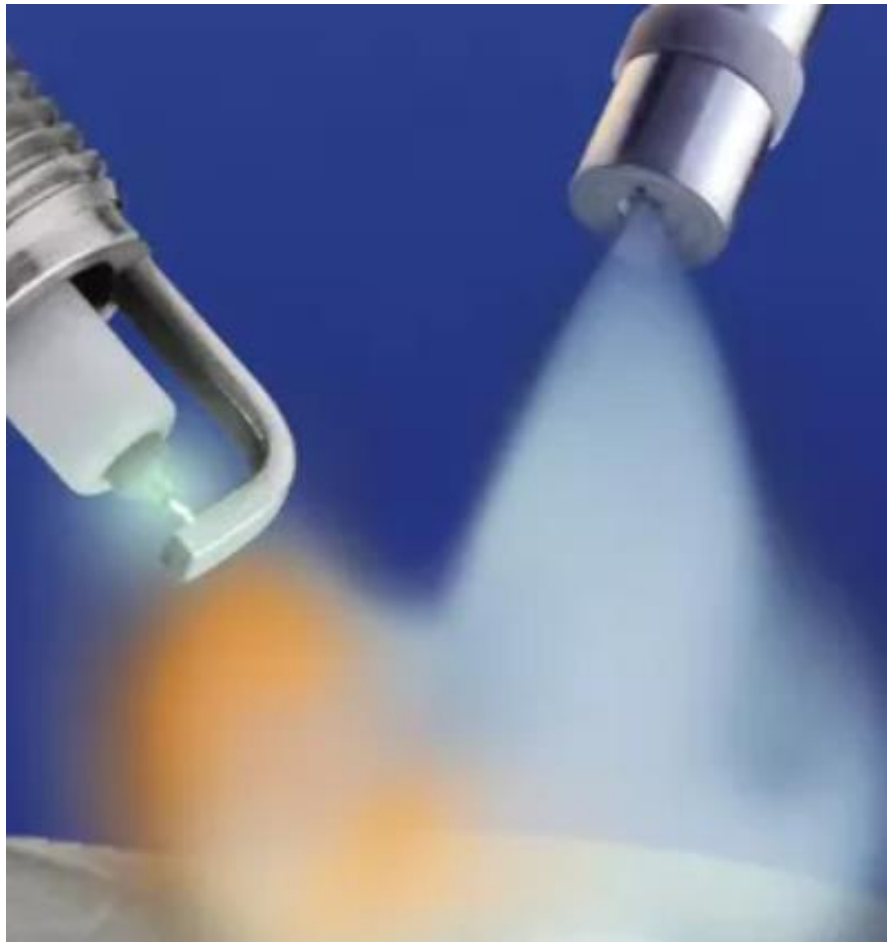
Our capabilities

Our capabilities

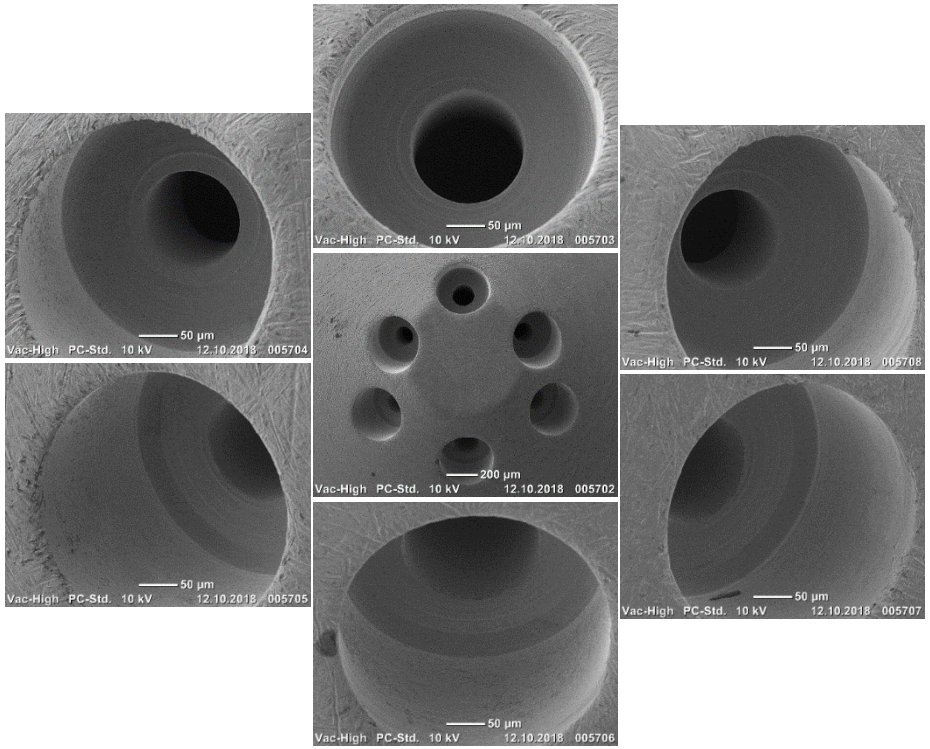
- ✓ **3** mechanical-**axis** XY-stage (300 x 300 mm)
- ✓ **5** mechanical-**axis** (1 cm^3)
- ✓ **Ultrafast laser micromachining** (< 300 fs)
  - ↳ **nIR** "1030 nm" or **green** "515 nm"
- ✓ **3-axis** scanner
  - ↳ F-Theta lenses & dynamic focusing unit
- ✓ **5-axis** scanner
- ✓ Laser **routing**, Laser **micro drilling**, Laser **cutting** on the same machine
- ✓ **Machining-** & **positioning-accuracy** within **± 2 µm**

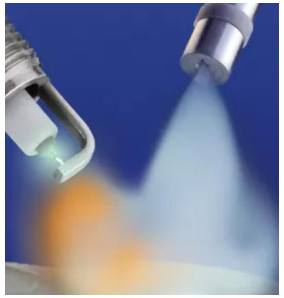
5-axis scanner achievements

Automotive industry

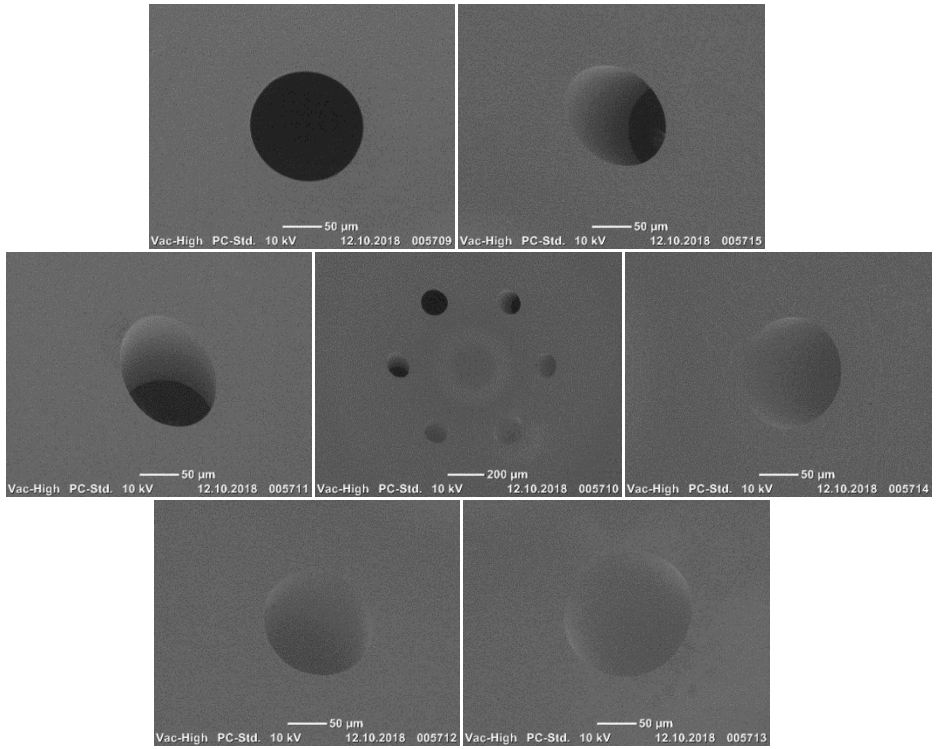


Laser-In





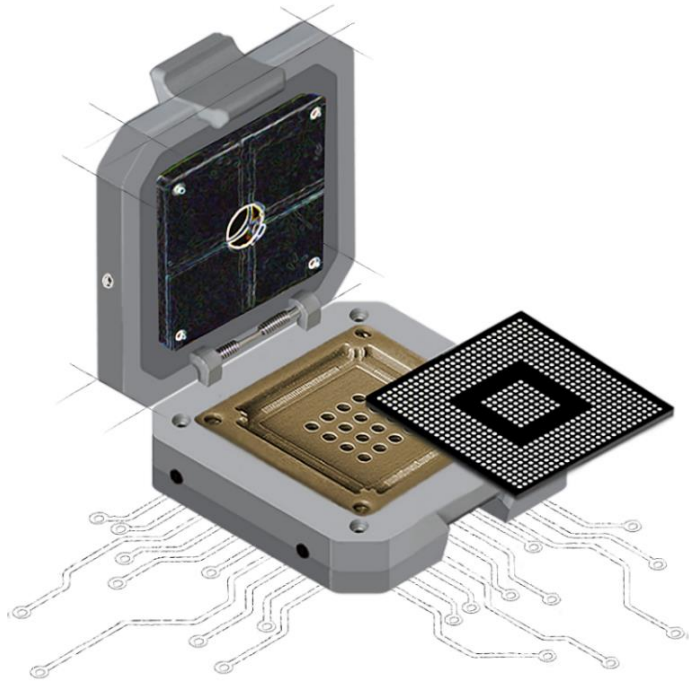
Laser-Out



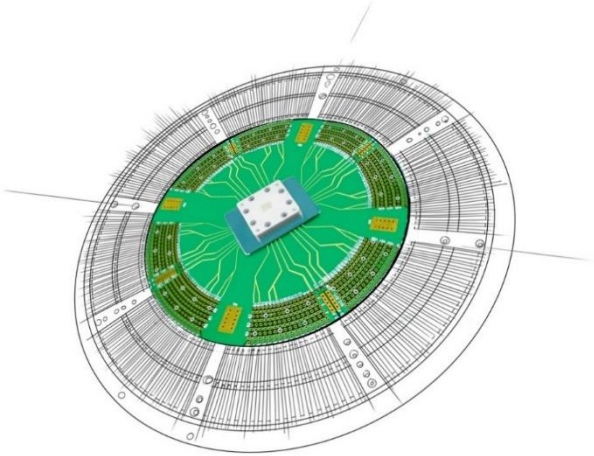
5-axis scanner achievements

Electronics industry

Test Fixtures



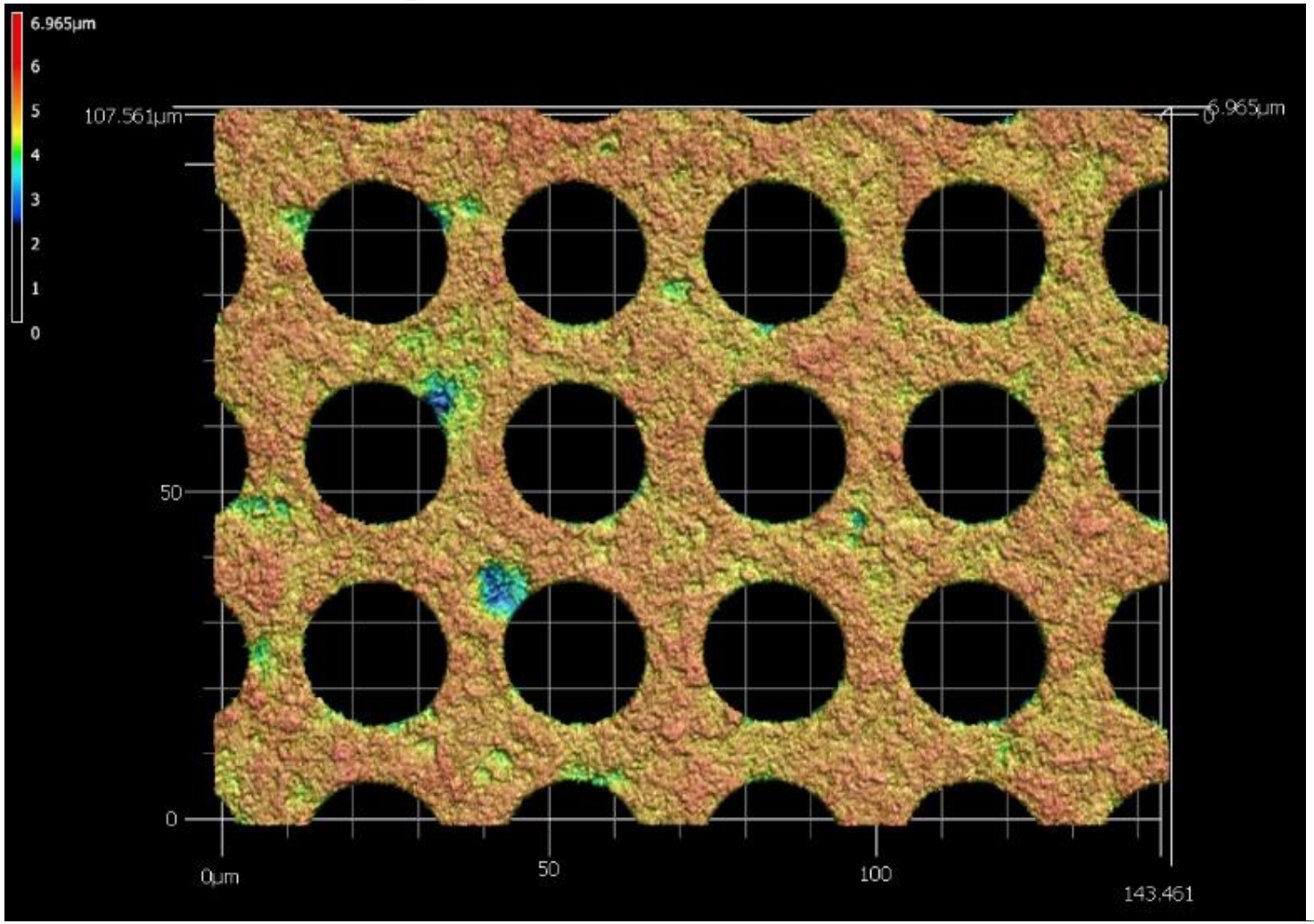
Test Sockets



Semiconductor Probe Cards

Guide plates

(Si_3N_4 - 250 µm thickness)

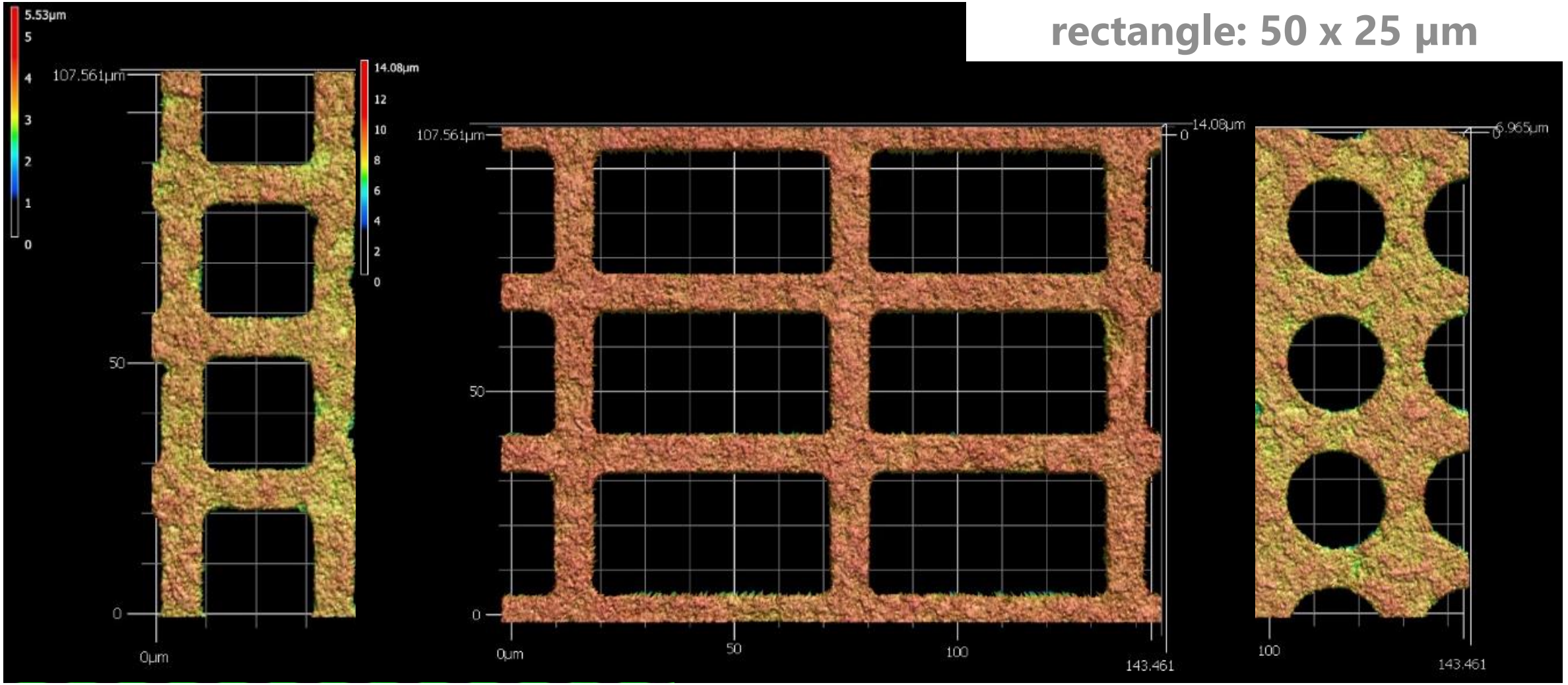


round holes: Ø20 µm

Guide plates

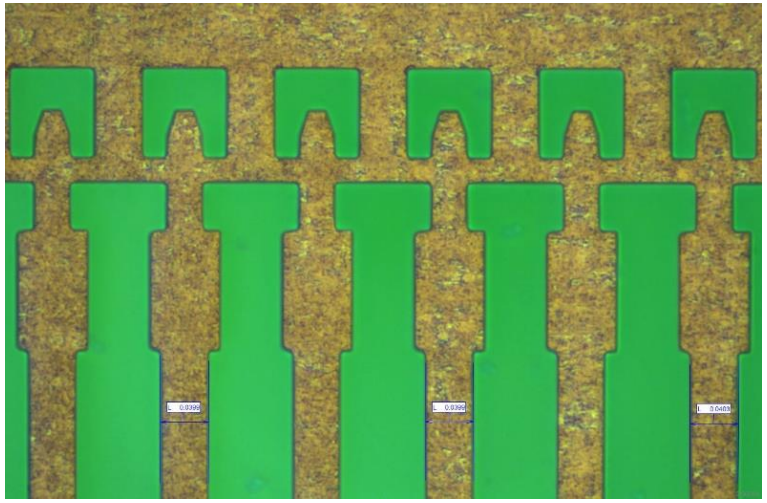
(Si_3N_4 - 250 µm thickness)

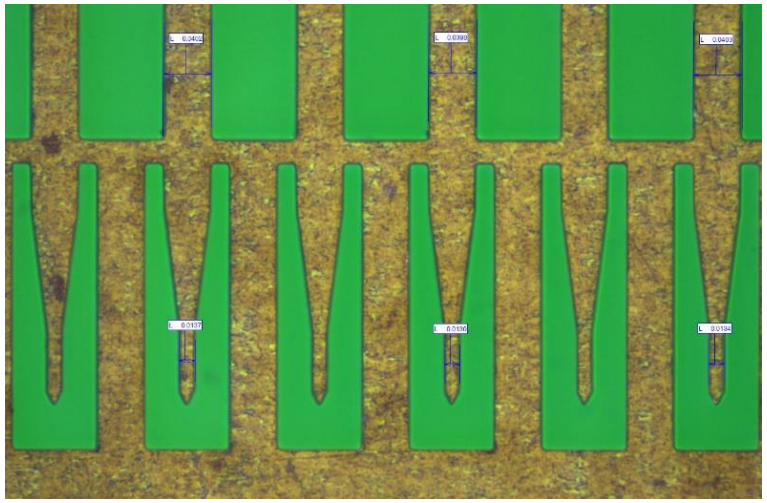
rectangle: 50 x 25 µm

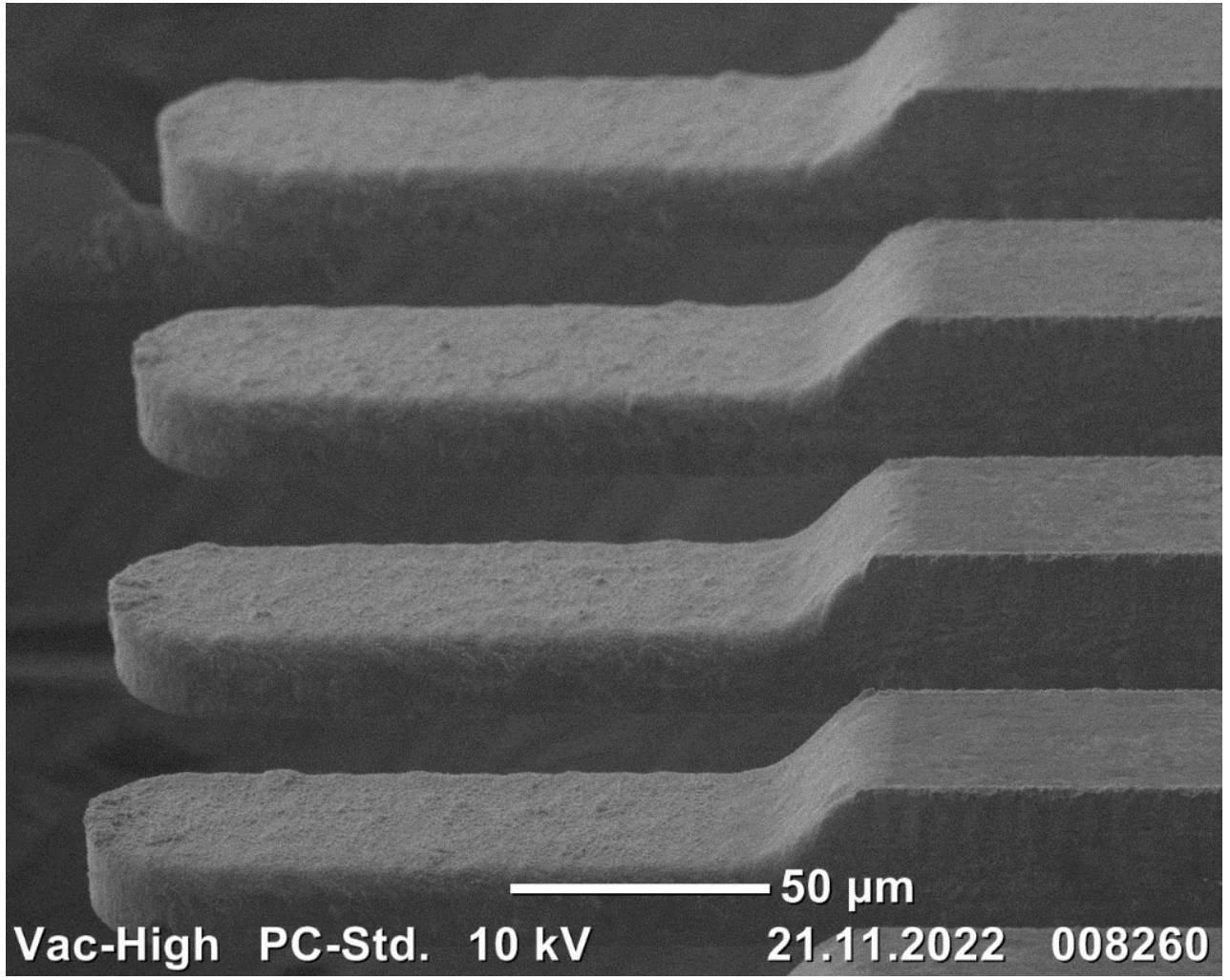


5-axis scanner
achievements

Vertical probes cutting
(~ 40 µm thick foil)

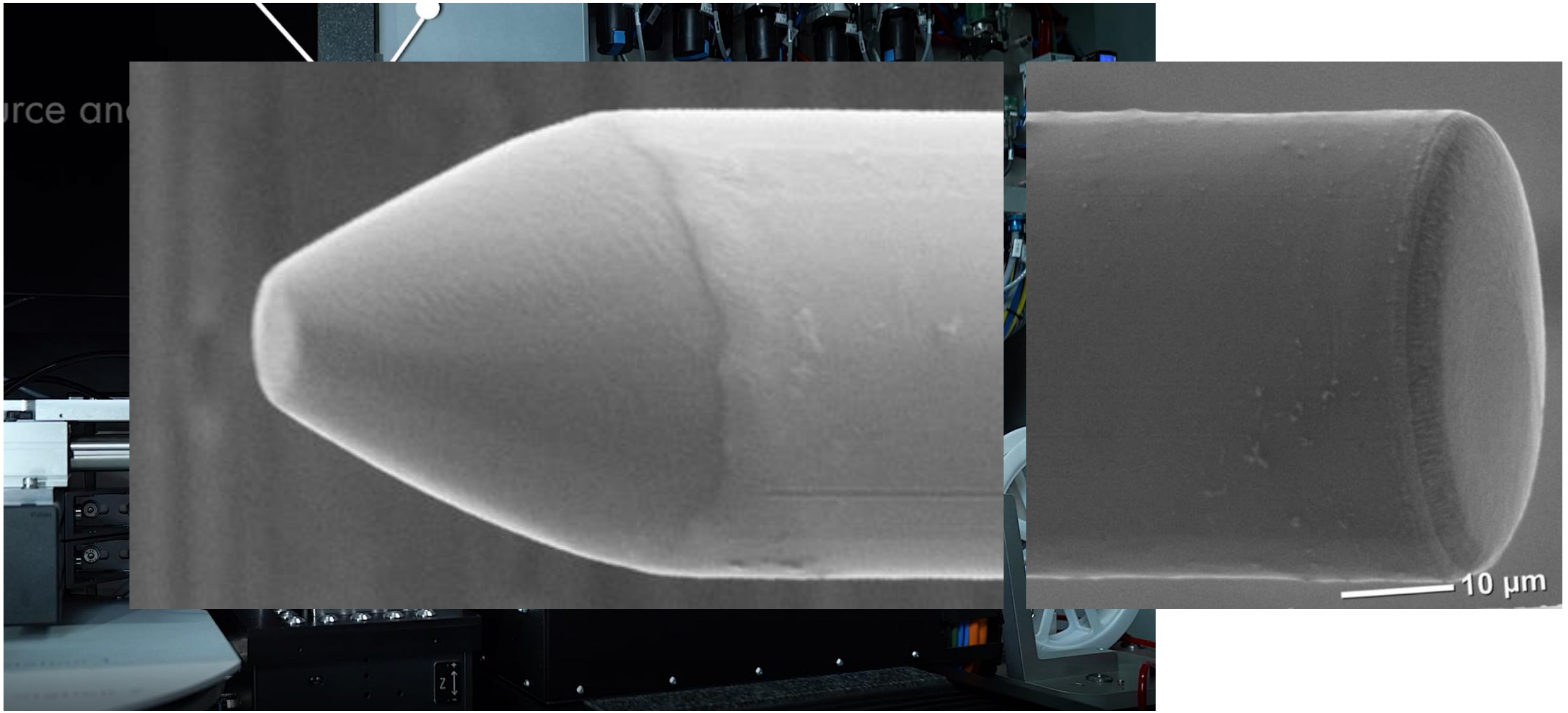






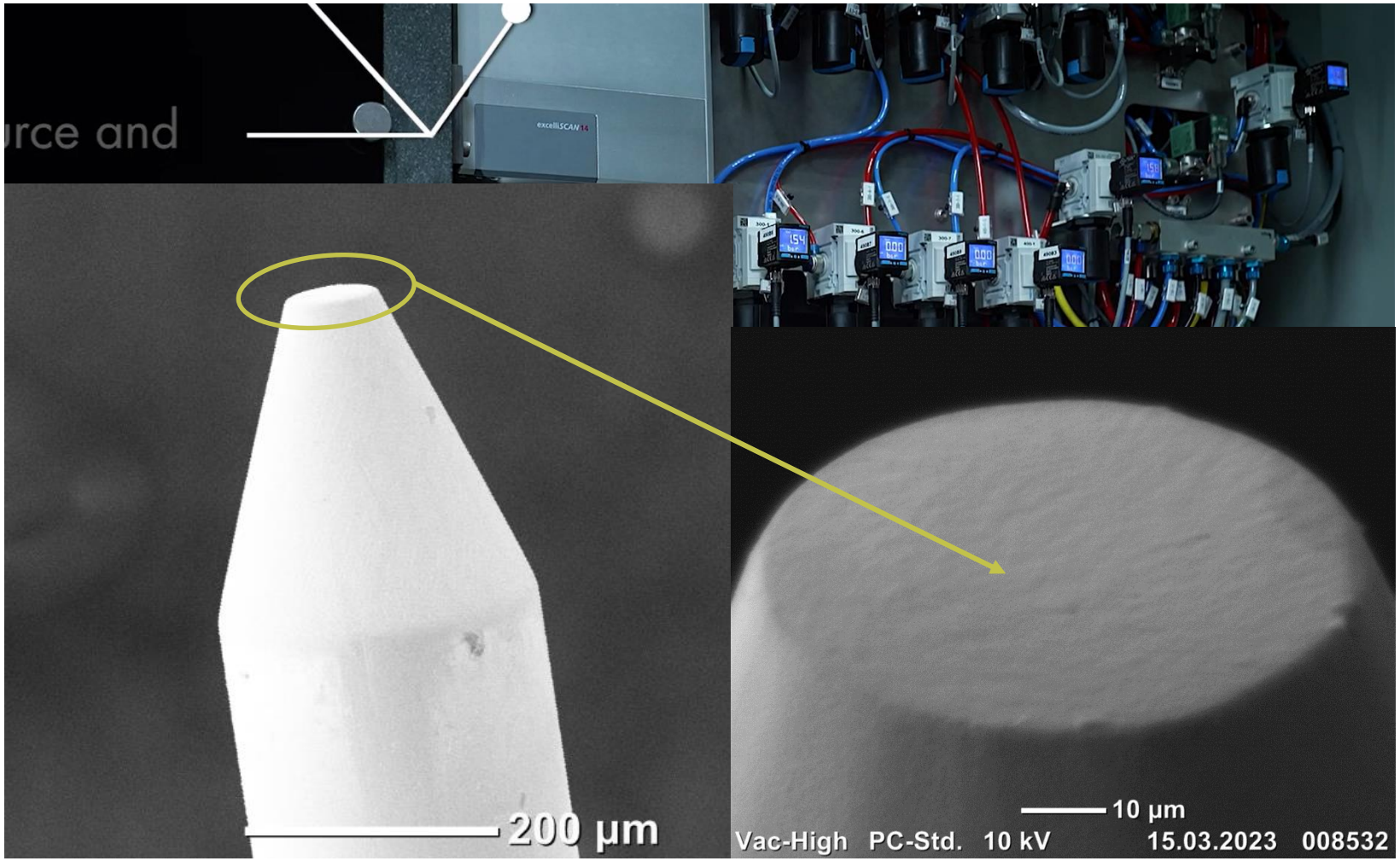
Wire probes turning

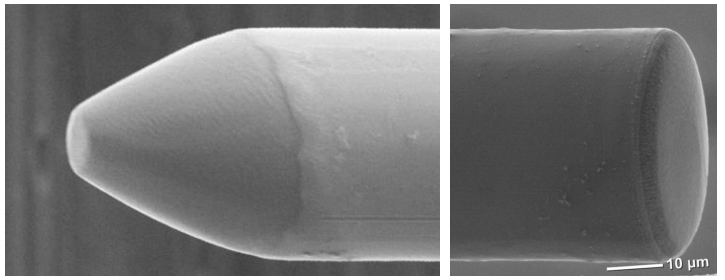
(material supply from wheel - ∅41 µm)



3-axis scanner achievements

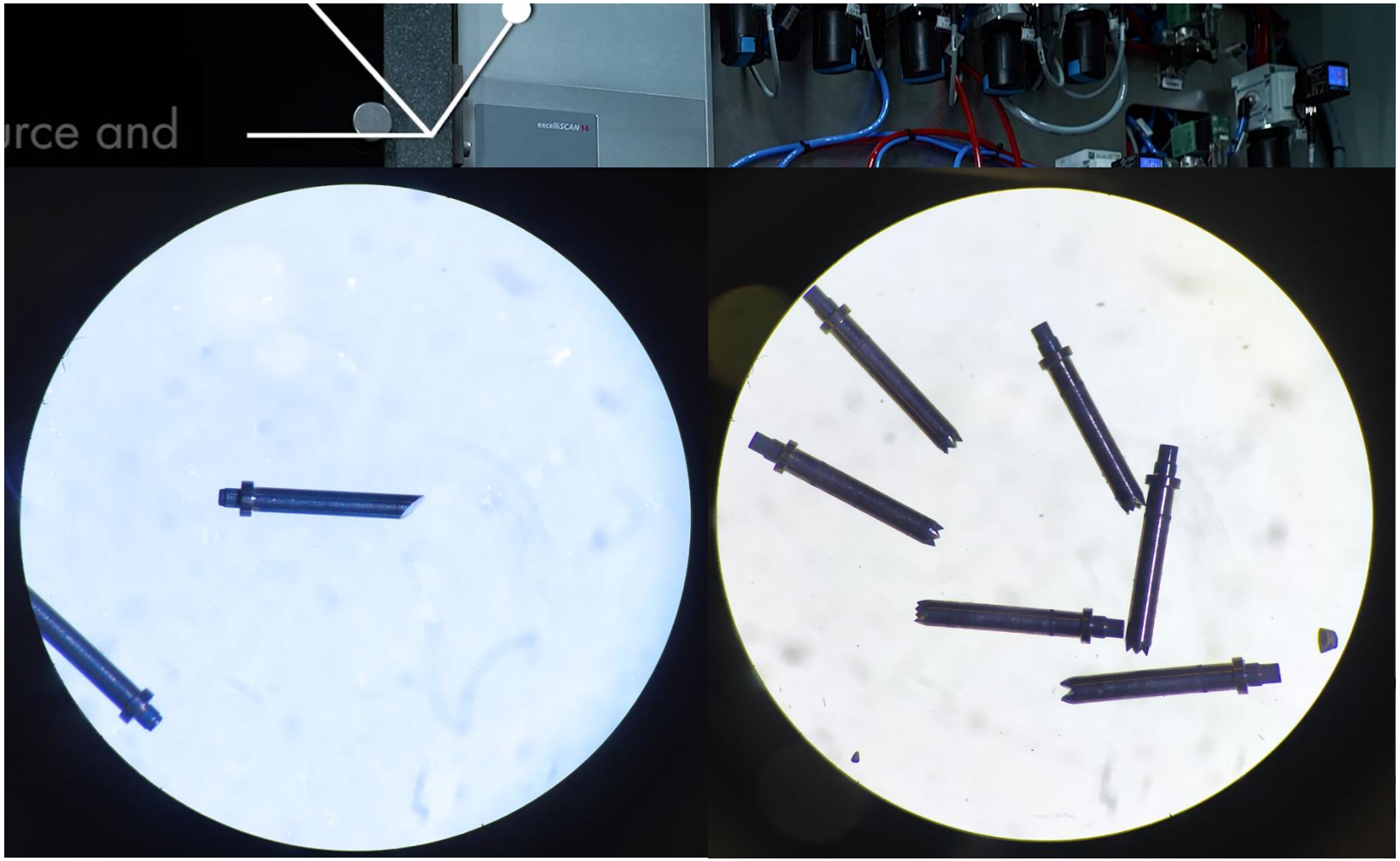
Wire probes turning
(material supply from bar - ∅230 µm)

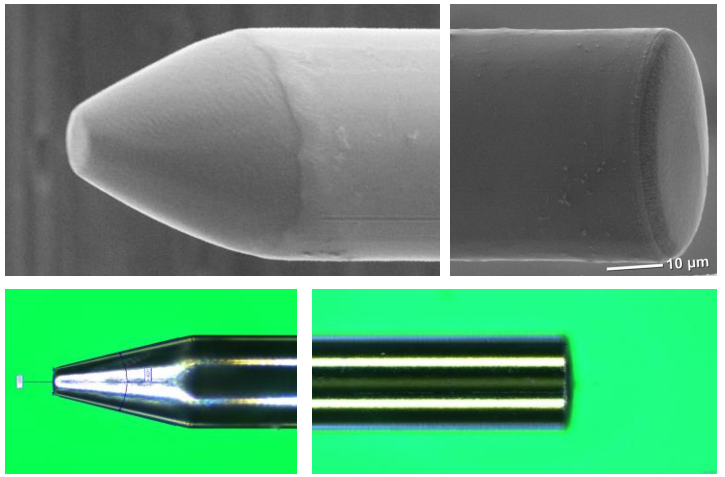




3-axis scanner
achievements

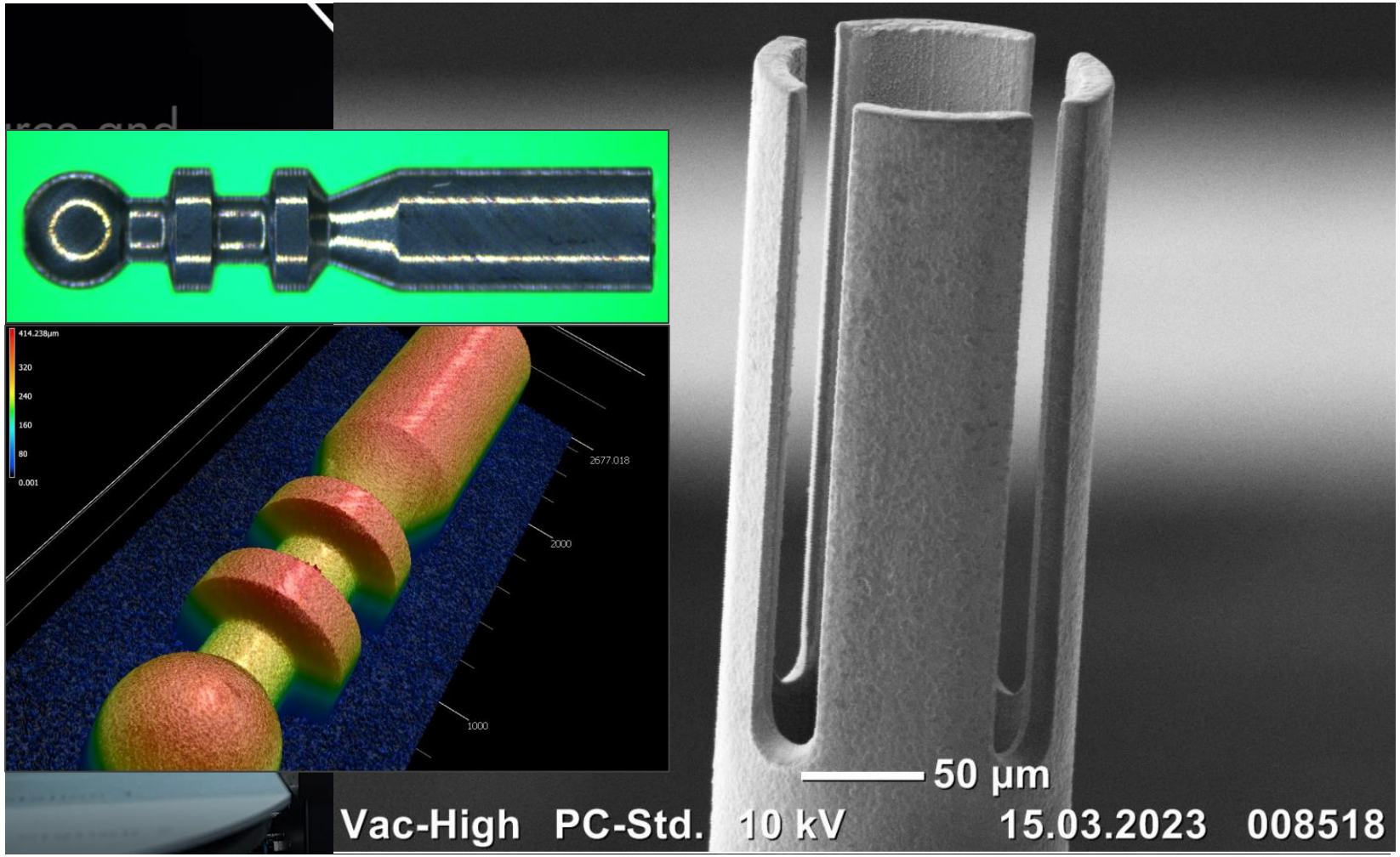
Wire probes turning
(material supply from bar - ∅300 µm)

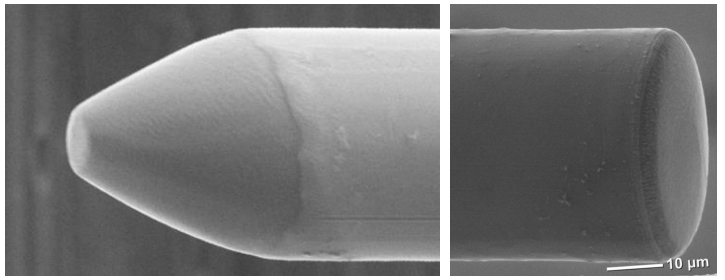


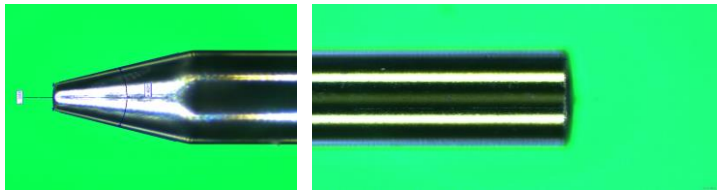


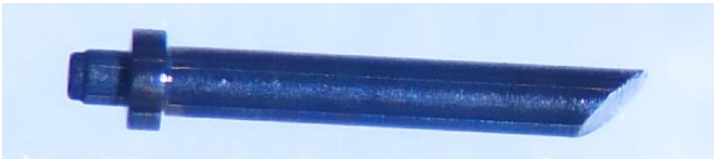
3-axis scanner
achievements

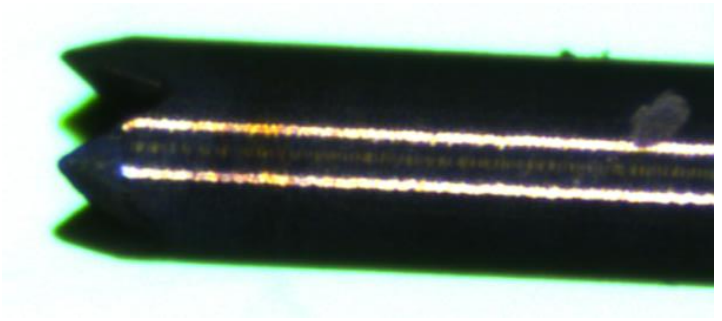
Laser turning
(material supply from bar - ∅500 µm)











Conclusion

What can **we do** for **You?**

- ✓ High accuracy micro-machining: drilling, milling, cutting & turning
- ✓ Enabling products that require micromachining
- ✓ Research and development to open new applications or markets
- ✓ Collaboration to develop new processes

What can **You do** for **us?**

- ✓ Collaboration to develop new processes
- ✓ Providing us with micromachining challenges and applications
- ✓ Industrialize new technologies that can enable “laser micromachining” to reach the next level