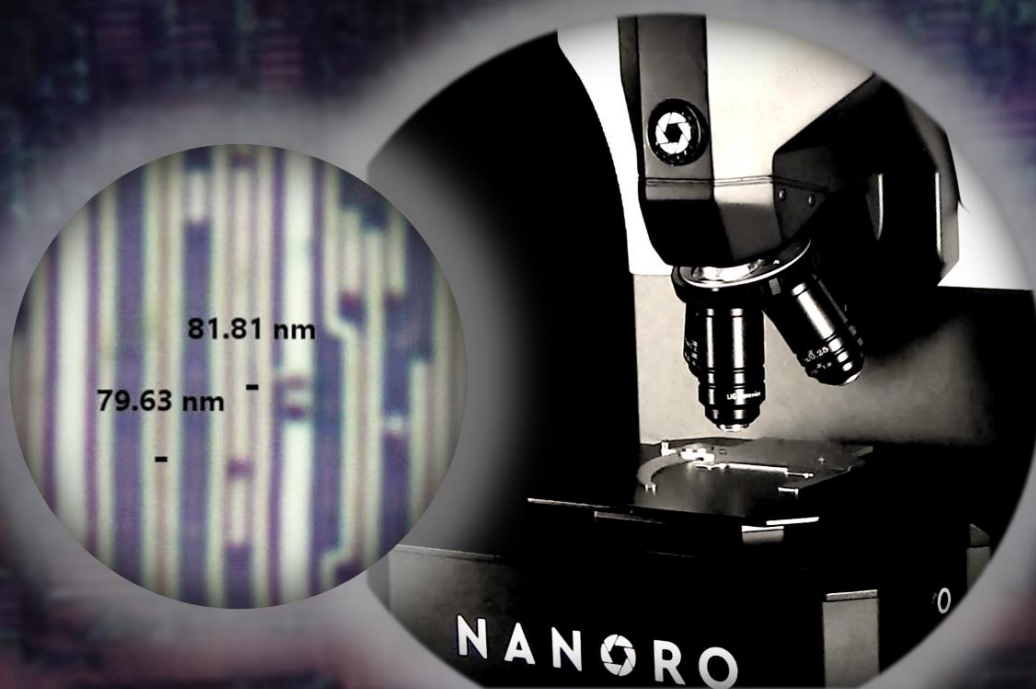


REDEFINE THE LIMITS OF OPTICAL MICROSCOPY WITH THE
NANORO TECHNOLOGY



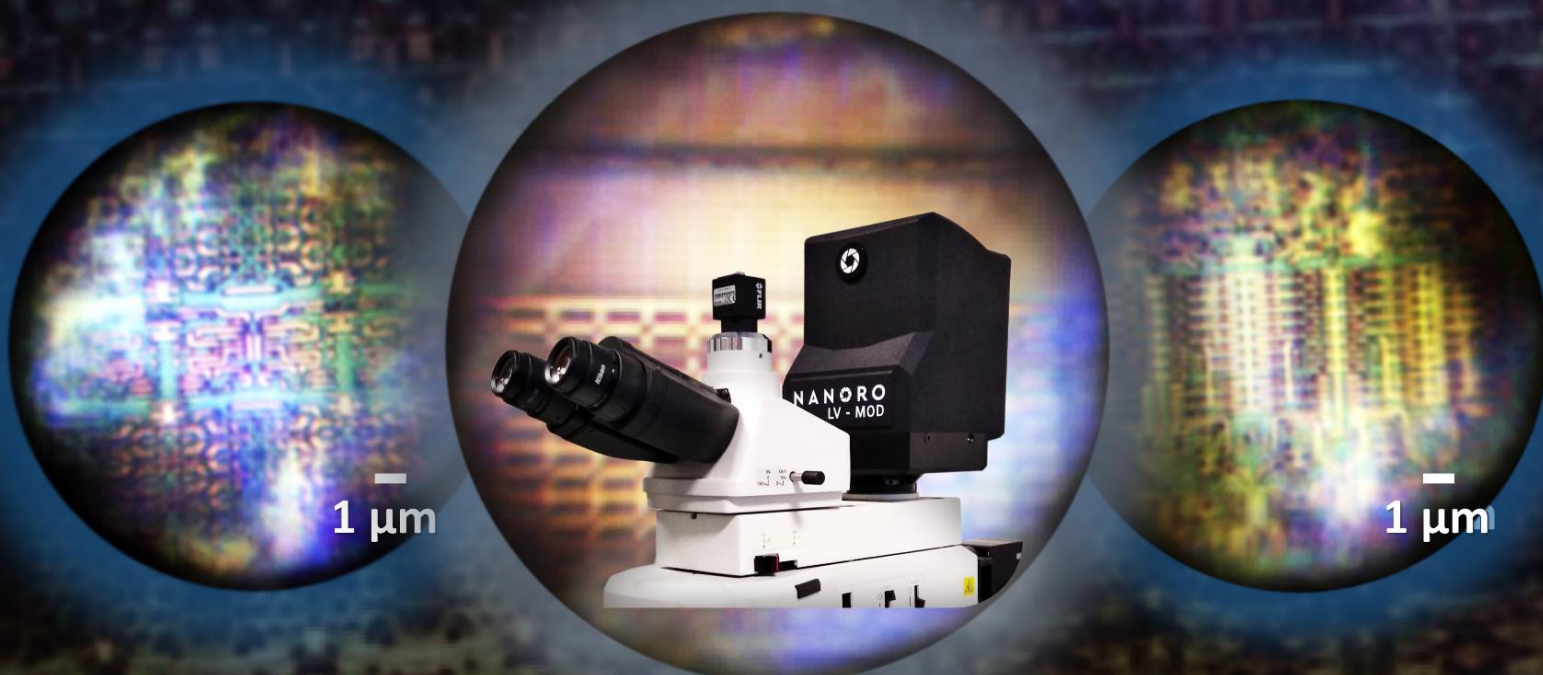
NANORO-M

SMAL LENS

LV-MOD

N A N O R O

SUPER-RESOLUTION WHITE LIGHT MICROSCOPY



FULL LIG-NANOWISE CATALOGUE PRODUCTS AT:

WWW.LIG-NANOWISE.COM



NIKON METROLOGY
STRATEGIC PARTNER

LIGNANOWISE

LIG-NANOWISE PRODUCTS

- **SMAL AIR lens**

SMAL (Super-resolution Microsphere Amplifying Lens) AIR are super resolution lens for imaging with no immersion medium

- **SMAL IMMERSION lens**

Super Resolution lens with a longer working distance than SMAL AIR. Oil or water can be used as immersion medium

- **NANORO M**

Scanning Super Resolution Optical Microscope providing large or localized scan with sub diffraction limit resolution using optimal illumination system for SMAL lens

- **NANORO Software**

Developed by our team to enhance the super resolution using microsphere imaging to its fullest

- **LV-MOD**

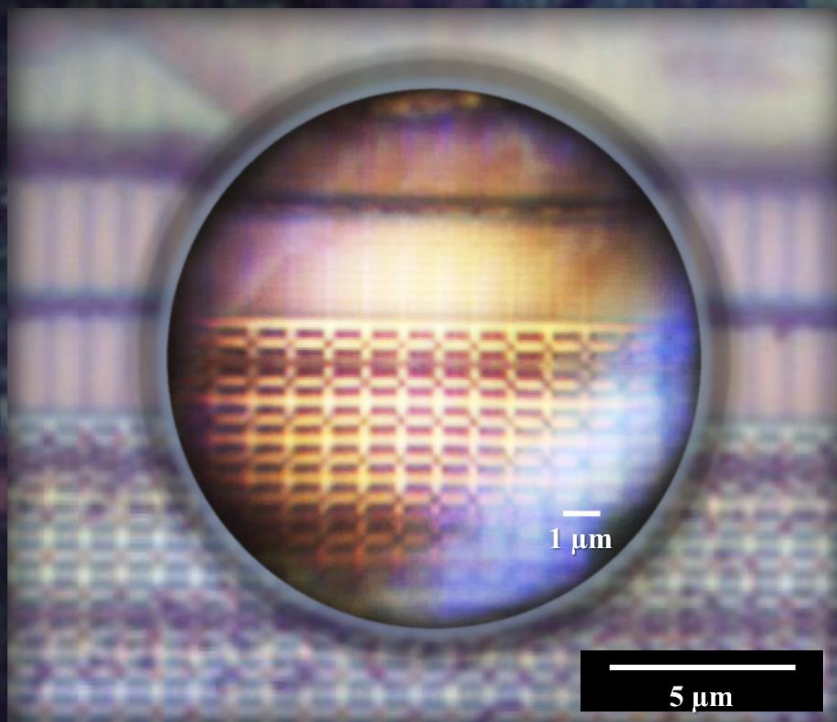
External illumination module allowing the optimal utilisation of SMAL on Nikon LV100 and LV150 microscope

SMAL AIR LENS

For the first time, super resolution is achieved in white light without any immersion medium and no specific preparation requirement.

SMAL (Super-resolution μm

Microsphere Amplifying Lens) are super resolution optical microscope lenses integrating microsphere technology.

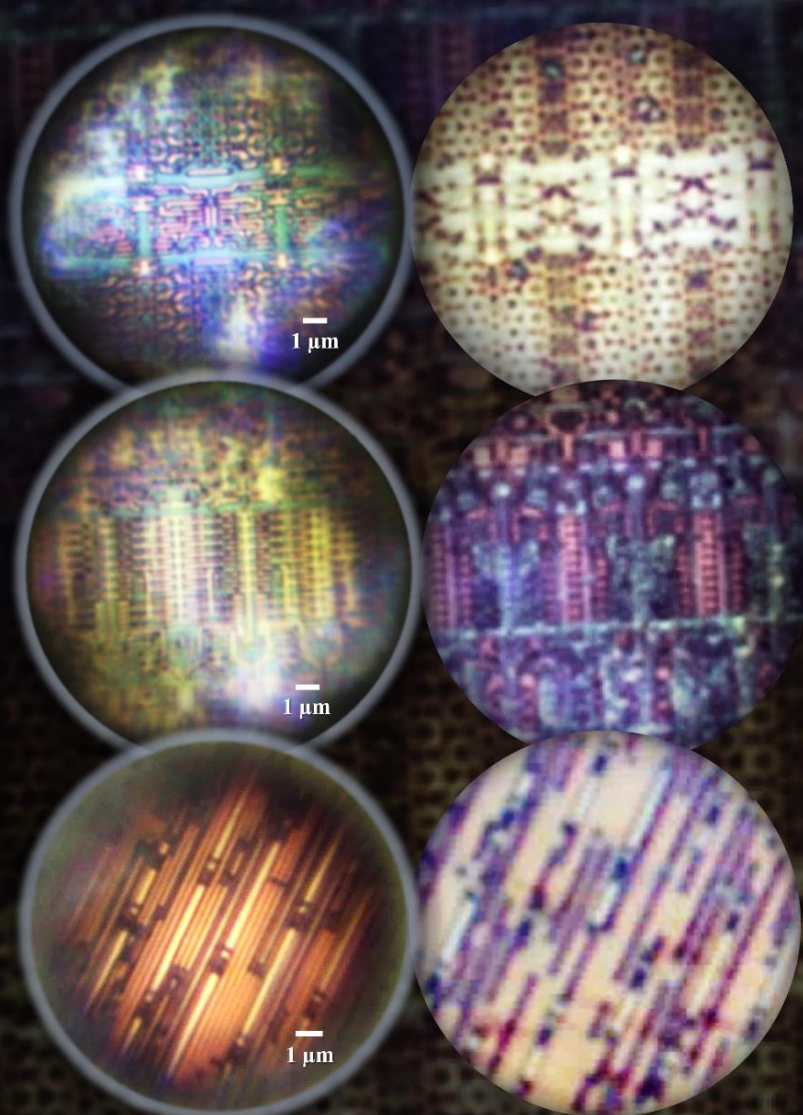


Sub-diffraction limit resolution

200x magnification

No immersion medium

Non destructive



Top large image:

Rectangular image: Semi-conductor sample imaged with a 100x standard AIR objective Lens

Circular image: : Same semi-conductor sample imaged with the AIR SMAL lens

Series of 6 circular images:

Right images : Semi-conductor sample imaged with a 100x standard AIR objective Lens

Left images : Same semi-conductor sample imaged with the AIR SMAL lens

NANORO M

The **NANORO M** microscope was constructed around the unique optical properties of the microsphere and for an optimal use of the **SMAL** Lenses.

The Nanoro M microscope is equipped with the **Aerotech stage ANT95XY-050-PL1**.

This stage allows wide range of motion (up to 50mm). With a resolution of 5 nm and a repeatability of ± 75 nm, this stage is ideal for an extremely smooth motion and very accurate scan.

With its optical block mounted on a **Marzhauser** linear stage. The Nanoro M allows a vertical approach and withdraw (60mm in high speed) of the objective lenses as well as an accurate fine focus (100nm step).

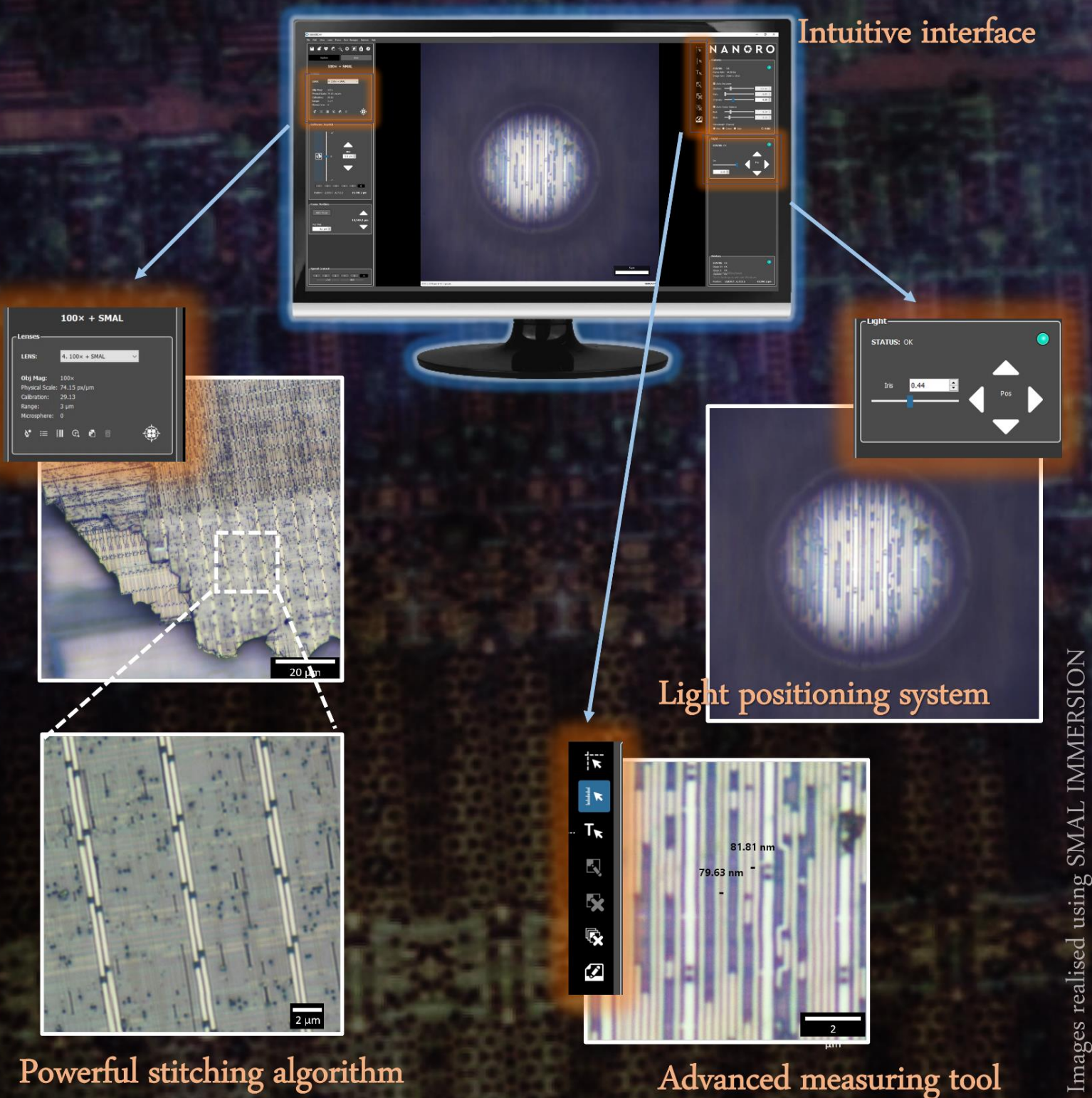


Driving the Nanoro M is done via a **Marzhauser joystick** which allows a perfect smooth motion in X, Y, Z direction at adjustable speed.

The particularity of the Nanoro M is its **microsphere illumination system**. Equipped with a white LED source, the microsphere illumination is driven via the **Nanoro Software** to adjust the position and the size of the illumination allowing the best condition for the use of microsphere for super resolution microscopy.

NANORO SOFTWARE

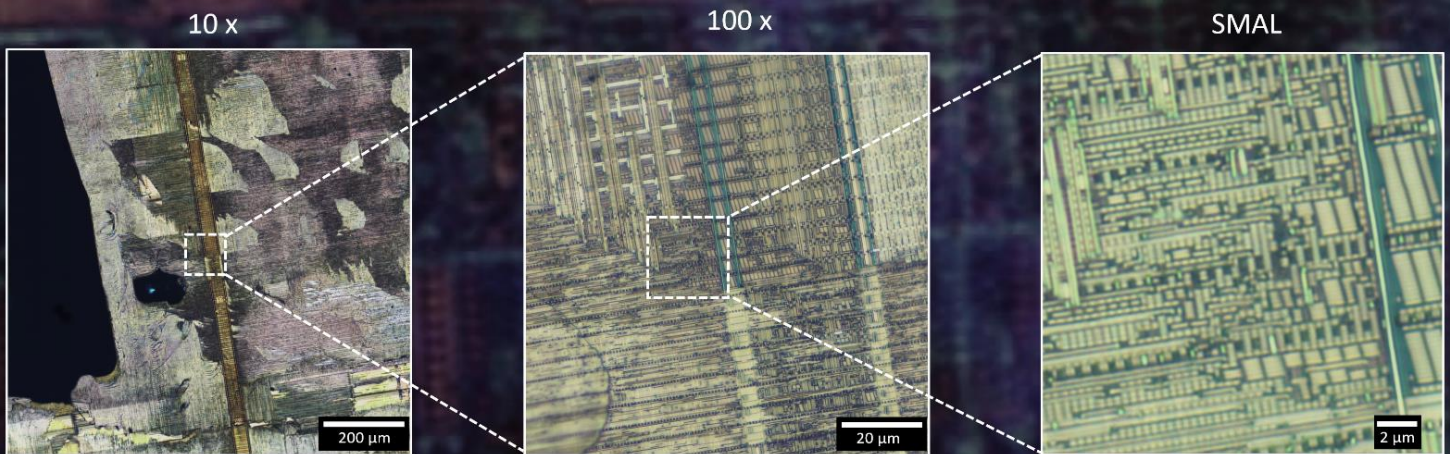
The **NANORO M** is a reflected light-microscope equipped with a **FLIR digital camera**. The image acquisition is performed using our **NANORO software**. This software was developed specifically for the use of microsphere for microscopy to provide the functionalities show bellow:



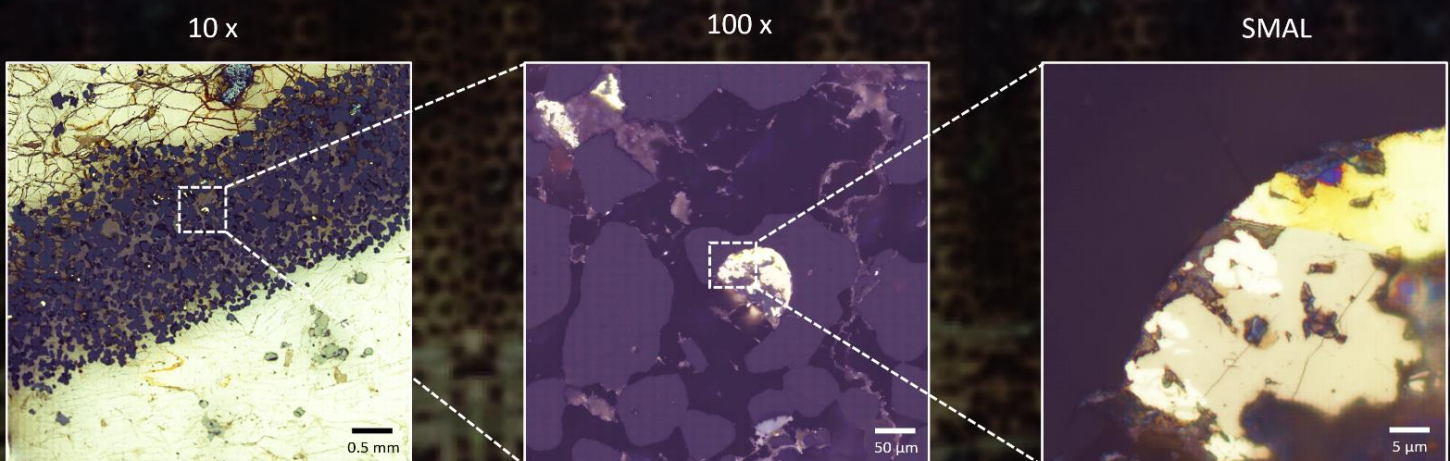
EXPLORING THE NANO-WORLD WITH SMAL

The NANORO M is the ideal tool to explore from a large area to the smallest details of a sample with a resolution below 100 nm.

- **Semi-conductor : Inside a microprocessor chip**

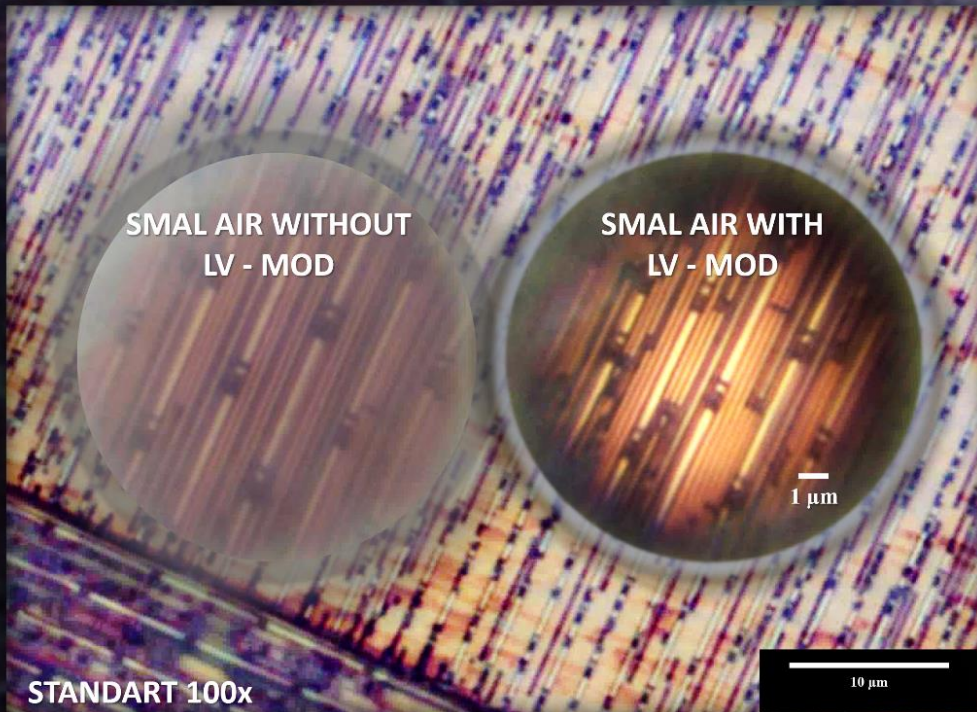


- **Geology – mineral analysis : Imaging platinum-group mineral grains in volcanic stone**



LV-MOD

In partnership with **NIKON METROLOGY**, we have developed an external illumination module allowing the **SMAL** lenses to be used on the **Nikon LV-100 and LV-150** microscope. The **NANORO LV-MOD** provides the perfect illumination required for a full microsphere imaging experience.



The **NANORO LV-MOD** is compatible with both **SMAL AIR** lens and **SMAL IMMERSIOM** lens.

Contact us to upgrade your Nikon Microscope to Super-Resolution.



Technical Specification

SMAL AIR lens:

- Magnification: 200x
- Resolution: 80 nm
- Focal distance: 200 nm
- Working distance: 100 nm

SMAL IMMERSION lens:

- Magnification: 220x – 230x
- Resolution: 100 nm
- Focal distance: around 5 microns
- Working distance: 500 nm

NANORO M:

- Reflected white light optical microscope
- Scan range: 5 cm to few microns
- Scan resolution: 5 nm
- Focus resolution: 100 nm
- Digital Camera CMOS
- All automatic / driven by Joystick and NANORO Software

LV-MOD:

- White light illumination
- All automatic / driven by NANORO Software
- Compatible with NIKON LV 100 and LV 150

PARTNERS



NANORO



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NANORO-M

SMAL LENS

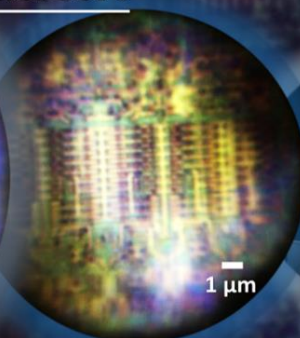
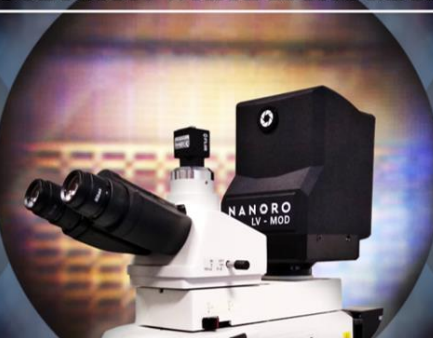
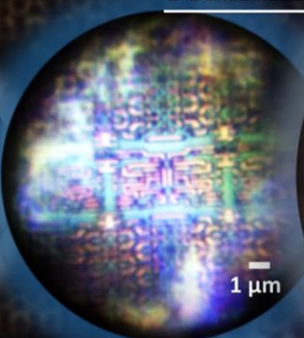
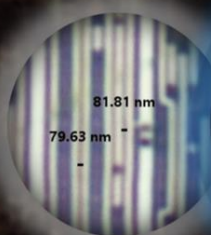
LV-MOD



NANORO

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