NEW

Orage

Extended performances with our new Ga FIB column

UHV Compatible

ORSAY PHYSICS
TESCAN ORSAY HOLDING

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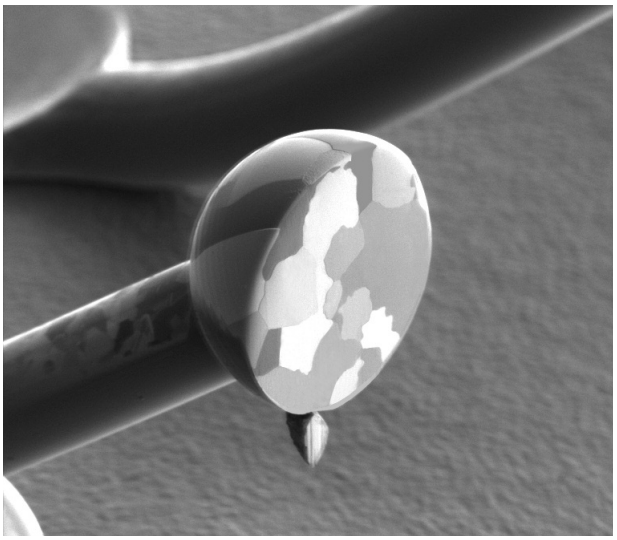
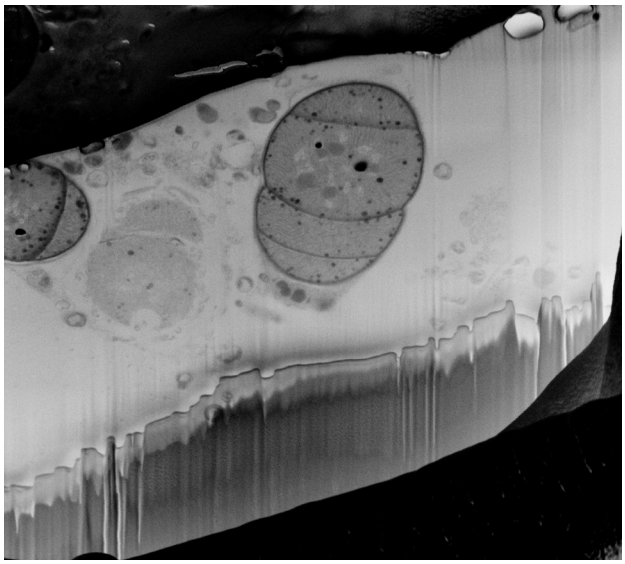
Extended performances with our new Ga FIB column

Orage is our very last Ga FIB column released. While keeping the well-proven performances of Cobra, Orage extends the panel of applications thanks to both an optimized design for **low energy work** and a sharply focused beam even for high currents.
The addition of a **piezo-controlled motor source** gives an **excellent FIB characteristic reproducibility** and **ease-of-use** regardless of energy or current applied.

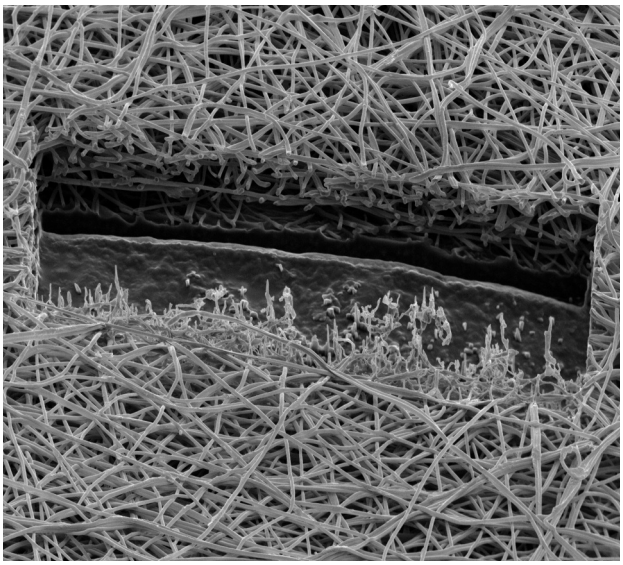
Key Features				
Source	LMIS (Liquid Metal Ion Source)			
Ion Species	Ga^+			
Energy Range	500 eV - 30 keV			
Probe Current	1 pA - 100 nA			
Working Distance	12 mm			
Optional UHV Configuration	Maximum bakeout temperature is 120 °C			
Ion Beam Guaranteed Performances at 30 keV / WD = 12 mm				
Beam Current	1 pA	10 pA	50 pA	100 pA
Ultimate Resolution	2.5 nm	5 nm	8 nm	12 nm



Cross-section of Al bonding wires obtained with Orage FIB and TESCAN LYRA3 SEM (FOV = 250 µm)



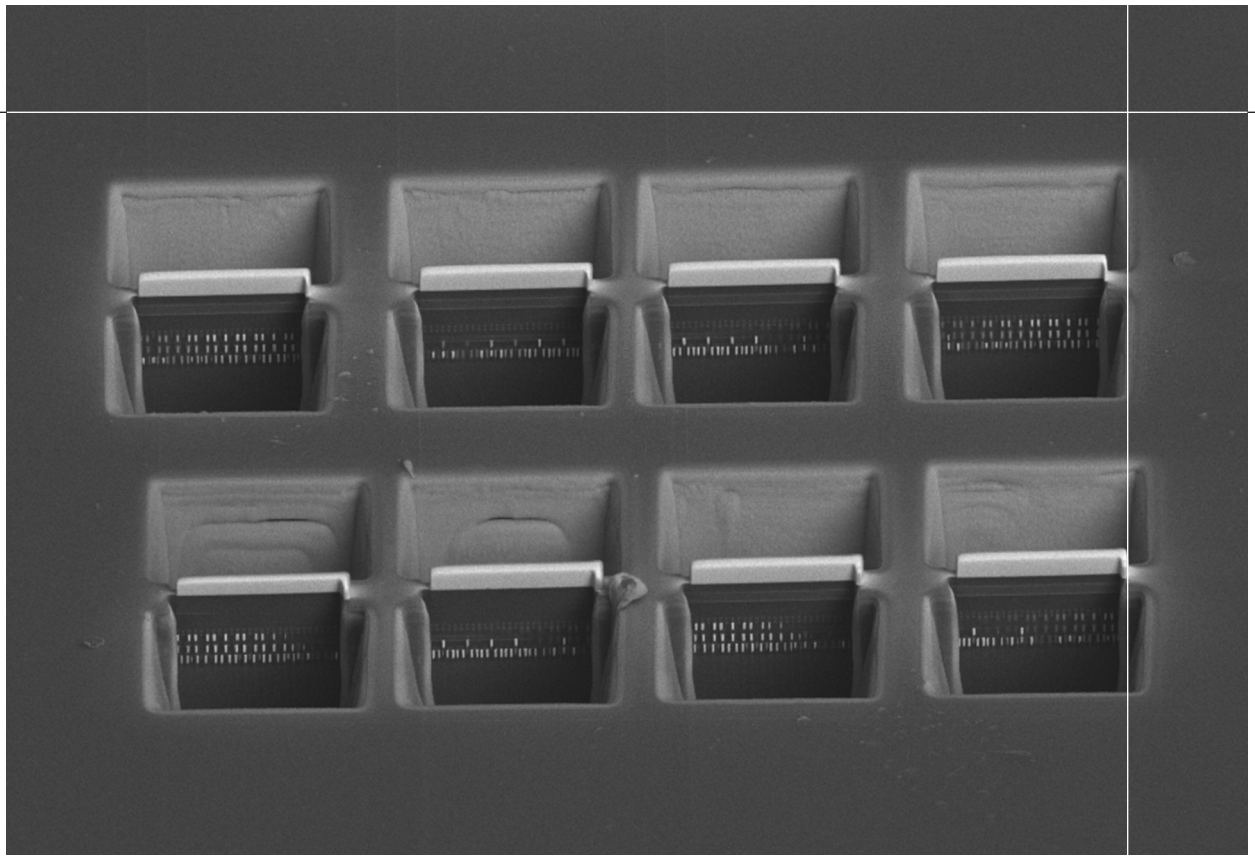
Cross-section of resin-embedded cyanobacteria using Orage FIB coupled with TESCAN LYRA3 SEM (FOV = 20 µm)



Cross-section in polymer nanofibers using Orage FIB coupled with TESCAN LYRA3 SEM (FOV = 50 µm)

Main characteristics

- Piezo-driven motorized source for fully automation and a higher reproducible positioning
- LMIS inserted in a cartridge for easy and fast refill and maintenance
- Pneumatic valve isolating the gun from the bottom part of the column for easy replacement and maintenance of the source
- 30 piezo-controlled apertures for higher reproducibility and performances
- Fully integrated electrostatic beam blanker and Faraday Cup for precise current measurements

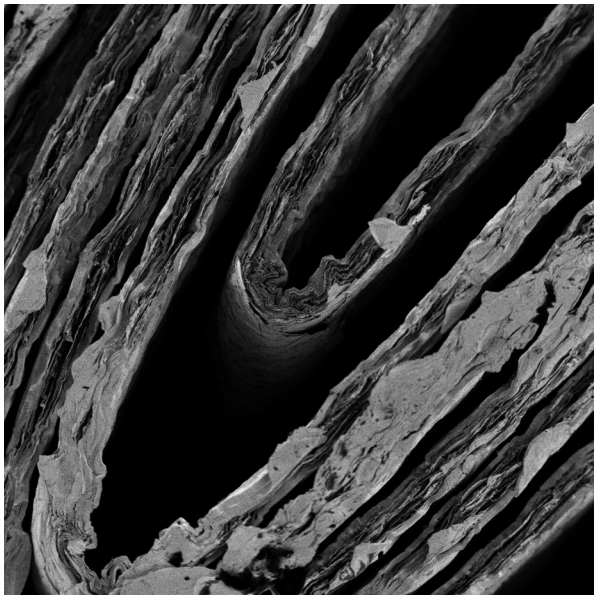


Serial preparation of TEM lamellae using Orage FIB coupled with TESCAN LYRA3 SEM (FOV = 90 µm)

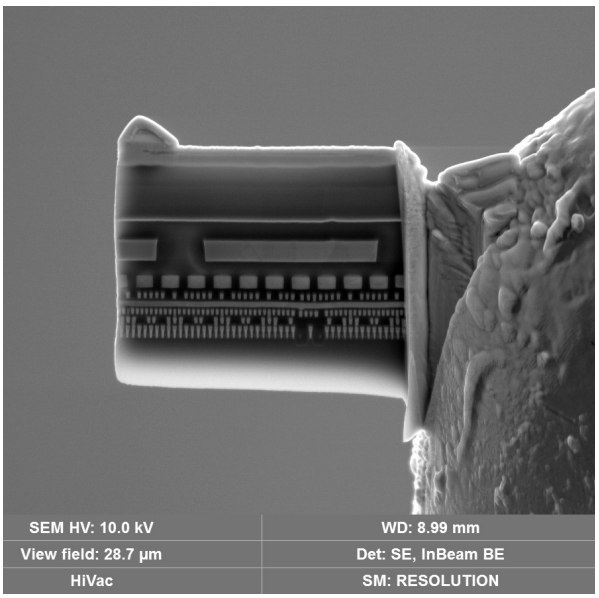
Description

Orage FIB column allows to keep an **ultra-fine resolution in a wide range of possible currents.** The use of this very advanced Ga FIB column is facilitated due to its one-click gun auto-alignment process sufficient to start the system with a minimum effort.

Decreasing the beam energy reduces the amorphization of TEM lamellae production, which matches with the semiconductor technology evolution. The beam energy reduction is even more improved thanks to both an optimized design of the condenser lens and the **piezo-controlled source.**



Observation of carbon sheets using Orage (FOV = 500 µm)



TEM lamella preparation using Orage

The **high current mode** increased until 100 nA enables a faster milling and a huge time saving keeping the sharpest beam.

Orage is easily adaptable on any vacuum chambers as it is also **available in a UHV configuration** and so bakeable up to 120°C.

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