Quantum Design

LATIN AMERICA

Raising The Science

Materials Science

Spectroscopy

Cryogenics

Optics

Nanoscience

Sample Synthesis

Biotechnology & Chemistry

Industries

Microscopy

Quantum Technology

Condomínio Empresarial Praça Capital
Av. João Scarparo Netto, 170
Milão 117 – Campinas/SP – Brazil
13.080-655

+55 19 3212.0230
+55 19 992.476.554

qd-latam.com

Heidelberg Instruments

Switzerland

Quantum Design
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SwissLitho is a high-tech company with the vision to change the way nanostructures are made and explored. SwissLitho offers innovative nanofabrication tools mainly based on its unique NanoFrazor technology. The company is proud of its international and interdisciplinary character with employees from 10 different countries.

The NanoFrazor Explore performs with maximum speed, precision and reliability. The technology behind the system is the result of more than 20 years of intensive research and development that started at IBM Research in Zurich and has been extended at SwissLitho. The NanoFrazor Explore is equipped with the most advanced hard- and software to control the heatable NanoFrazor cantilevers in the best possible manner for writing and imaging. Recently, the Explore has received an integrated laser writer extension to speed up patterning of coarse features. Nano- and microfeatures can now be seamlessly and quickly written into the same resist layer using the same software platform in a single fabrication step.

The NanoFrazor Scholar is the entry level NanoFrazor system and is particularly suited for academic research groups looking for an easy way to create high-resolution nanopatterns or devices. The NanoFrazor Scholar is a compact system designed to fit in the smallest lab spaces. It can also be installed in a dedicated glovebox to enable nanolithography of sensitive materials in inert conditions. Like all NanoFrazor tools, the Scholar can pattern features with ultra-high resolution with no need for proximity effect corrections. All the unique NanoFrazor capabilities like in-situ AFM imaging, accurate 3D grayscale lithography, markerless overlay or thermal material conversion are available with the Scholar.

Most common applications:

- Holograms and microlenses
- Spiral phase plates
- 3D photonic molecules
- Single electron transistors
- Photonic crystals, cavities
- Waveguides with low roughness
- High resolution metal structures for metamaterials or optical antennas
- Nanowire and quantum devices using precise overlay
- Nanomagnetic structures for spintronics and artificial spin ice
- Stamps and molds: unique precision with 3D templates for NIL or injection molding

BIG AREAS Industries | Nanoscience
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HEIDELBERG INSTRUMENTS

Key features:

- Direct heated probe writing with resolution below 15 nm
- Direct laser sublimation below 1 µm resolution
- In-situ high speed AFM topography imaging
- Sample size up to 100 x 100 mm²
- Closed-Loop Lithography
- Grayscale patterning with unprecedented resolution and accuracy below 2 nm
- Markerless overlay and stitching using in-situ AFM for accurate alignment
- Superior acoustic and vibration isolation
- No clean room or special laboratory environment required
- Enables numerous unique possibilities that go beyond conventional nanolithography