Welcome to Advanced Nanolithography
Beyond Speed Limits ...

XENOS Semiconductor Technologies GmbH

Product Sheet

XENOS 701 ISF (FIB)

The focused ion beam system **XENOS 70 ISF** is a powerful modular multipurpose UHV- FIB system for:

- Focussed ion beam implantation
- FIB lithography
- FIB assisted gas deposition
- FIB assisted reactive gas etching
- Microcutting

This system employs a eutectic alloy liquid metal ion source. Ions used for implantation include Ga, Si, Be, Au. As an option, a source preparation system can be provided, which allows for the preparation of liquid metal ion sources from a wide variety of elements. Ion acceleration voltages between 10 kV and 70 kV can be used.

The system is especially prepared for nanometer resolution FIB processing. This includes a fine beam size (beam diameter FWHM < 10 nm at 70 kV). Passive and active antivibration mechanics are employed to stabilize the work stage and the work chamber.

For in situ observation of ion beam processing the system is equipped with a scanning electron beam column. The **XENOS 70 ISF** is equipped with a high speed pattern generator which allows FIB patterns to be written at speeds up to 5 MHz. The beam position is controlled with 16 bit accuracy in the writing fields, allowing the beam to be positioned precisely down to 1 nm.

KEY SPECIFICATIONS:

- **Acceleration Voltage:** 10 - 70 kV, changeable in steps of 100V
- **Ion Probe Ga^+:** < 10 nm at 1 pA using room temp. Ga source
- **Probe Position Stability:** long term drift: less than 0.1 µm/hour
- **Ion Source:** single element and alloy sources can be used
- **Mass Filter:** ExB type
- **Electron Beam System:** option for in-situ FIB pattern inspection
- **Stage Position Determination:** laser interferometer system (Resolution: 2.5nm)

PC controlled system with high speed pattern generator providing CAD for FIB pattern design, FIB delineation control including distortion corrections, CAD with wide variety of implemented shapes including dots, lines, rectangles, trapezoids, triangles, parallelograms, arrays of any single shape, third order polynomials for pattern data creation, pattern data edition, batch processing data creation and edition

FIB Control:

Pattern delineation schedule, employing fast pattern transfer of arrays, mark detection and automatic position correction, distortion measurement and correction, dynamic focus and stigmation, real time stage positional compensation, scanning gain and rotation compensation, stage position control

XENOS Semiconductor Technologies GmbH - Im Bainken 10, D-72127 Kusterdingen, Germany
ph: +49 (0) 7071 32416 - fax: +49 (0) 7071 32436 - email: info@xenos-semi.com - www.xenos-semi.com