



XeDraw 2

XENOS Pattern Writer XeDraw 2 – Update your Scanning Electron Microscope or FIB system to a next generation nanolithography tool !

Attached onto your existing or to be SEM or FIB, the XeDraw 2 writer system will turn it into a state-of-the-art nanolithography-tool. Enjoy 4 essential advantages:

Writing speed

Pixelrates up to 10 MHz can be realized with the XeDraw 2 system. Thanks to intelligent writing algorithms, the limited deflection bandwidth of current FIBs or SEMs is taken into account.

Optimized data transmission via USB and settling time calculation are matched to the writing speed in order to provide all advantages of fast writing.

Intelligent and versatile writing primitives

In competing systems, curved structures like circles, rings or ellipsoids will be written by a polygonal approximation of the structures. Arising problems are due either to poor approximation or huge amounts of data that have to be processed and that often result in undesirable blanking between the polygonal parts of the structures.

The XeDraw 2 implements a polynomial scan logic of 3rd order that can generate and write those polynomials and thus improved in comparison with our competitors. Circles, rings or ellipsoids can therefore be written by concentric single pixel rings (with spline interpolation). Thus, maximum writing speed and approximation quality can be achieved with minimum data overhead and transmission time. Moreover, the sinusoidal shape of the deflection signals consumes much less deflection bandwidth than raster scanning of polygonal parts of the structures. Furthermore, the XeDraw 2 writing algorithm symmetrically uses the bandwidth of X- and Y- axis.

Extreme flexibility

The system can be configured to suit your needs perfectly. The DSP kernel will be booted at startup via the USB link, therefore kernel updates are merely a cut and paste operation on the controlling PC.

Latest digital electronics, user friendly software and first class accessories

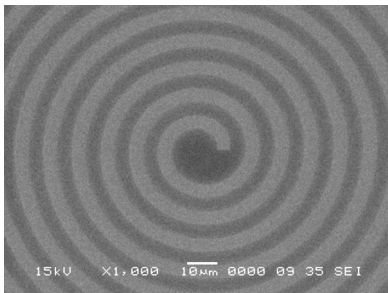
The complete deflection signal generation is implemented in a fast digital signal processor (DSP) with 16/32 bit per axis. Especially the field correction does not use bandwidth limiting multiplying analog DACs, but is built fully digitally, working up to maximum writing speed without any distortions in the resulting deflection signal.

The exposure clock is generated linearly with 1 kHz increments.

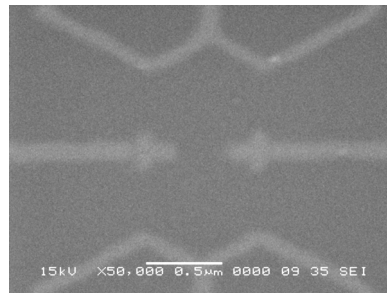
Our CAD and control software ECP has been written by experienced lithography users. This makes ECP a user friendly and lithography user specific system. ECP is available either based on Linux or Windows, and the CAD part can be used at liberty within the workgroup.

A set of different specimen stages is available to complete the system.

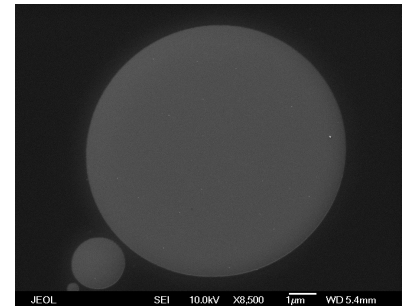
Intelligent and versatile writing primitives



Spiral structure exposed with
XeDraw and JEOL JSM-6480
into PMMA (70 nm) on Si

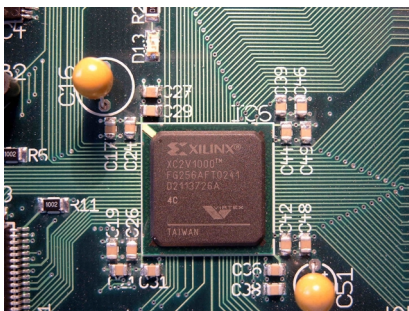


Structure exposed with
XeDraw connected to JEOL JSM-6480
into PMMA (70 nm) on Si

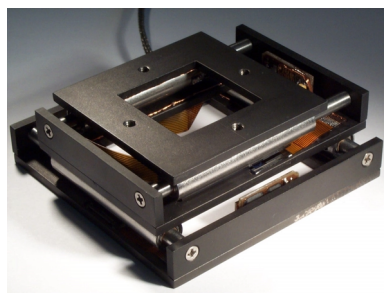


Circles exposed with
XeDraw and JEOL JSM-7000F
into PMMA (80 nm) on Si

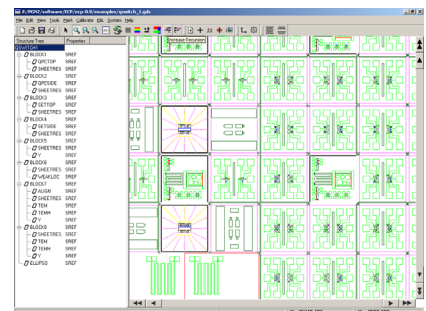
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High-end electronics
DSP and Gate Arrays



Ultra compact piezo stage, 100 nm resolution
20 or 30 mm travel



ECP CAD and control program

Further Information

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