

ABSTRACT

Particle-optical Apparatus and Process for the Particle-optical Production of Microstructures

The invention relates to a particle-optical apparatus for particle-optical mask projection. According to the invention, an energy filter (5) is used, by means of which particles which are inelastically scattered in the mask plane (4) are separated from the particles which are elastically scattered in the mask plane. Particles from a selected energy range are then used for the particle-optical imaging of the mask in the final image plane (10). The energy filter is then preferably an imaging energy filter, the mask plane being coincident with the input image plane of the energy filter or being imaged in it. The output image plane of the energy filter is then imaged, reduced in scale, by a following imaging system (8, 9), on the wafer arranged in the projection plane (10).

In an embodiment example of the invention, beam deflection systems can be provided in addition, by means of which the particle beam is deflectable in the mask plane, also onto out-of-axis regions, so that different regions of the mask plane can be imaged in the image plane at successive times.

Figure 1