

Title (en)  
PHOTOLITHOGRAPHIC MASK

Title (de)  
PHOTOLITHOGRAPHISCHE MASKE

Title (fr)  
MASQUE PHOTOLITHOGRAPHIQUE

Publication  
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Application  
**EP 01996769 A 20011114**

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Abstract (en)  
[origin: WO0241076A2] According to the invention, auxiliary openings (2) are allocated to the openings (1) on a mask which are to be transferred onto a wafer. Said auxiliary openings have a phase shifting characteristic of preferably between 160 DEG and 200 DEG in relation to the openings (1), as well as a cross-section which is less than the limit dimension (31) for the printing of the projection device, so that the auxiliary openings (2) themselves cannot be printed onto the wafer. At the same time, however, they strengthen the contrast of the aerial image of an associated insulated or semi-insulated opening (1) on the wafer in particular. According to one form of embodiment, the distance of the auxiliary openings (2) from the opening (1) is greater than the resolution limit of the projection device, the opening being less than the coherence length of the light used for projection. The effect of the auxiliary openings consists of the phase-related use of the optical proximity effect. If the auxiliary openings (2) are arranged in a preferred direction, this effect can be used on quadratic openings (1) on the mask to produce elliptic structures (1') on a wafer. The result is a considerable widening of the process window for the projection of substrate contacting planes onto a wafer.

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IPC 8 full level  
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