

**A METHOD, PROGRAM PRODUCT AND APPARATUS FOR MODEL BASED
SCATTERING BAR PLACEMENT FOR ENHANCED DEPTH OF FOCUS IN
QUARTER-WAVELENGTH LITHOGRAPHY**

ABSTRACT

A method of generating a mask having optical proximity correction features. The method includes the steps of: (a) obtaining a desired target pattern having features to be imaged on a substrate; (b) determining a first focus setting to be utilized when imaging the mask; (c) determining a first interference map based on the target pattern and the first focus setting; (d) determining a first seeding site representing the optimal placement of an assist feature within the mask relative to a feature to be imaged on the basis of the first interference map; (e) selecting a second focus setting which represents a predefined amount of defocus relative to the first focus setting; (f) determining a second interference map based on the target pattern and the second focus setting; (g) determining a second seeding site representing the optimal placement of an assist feature within the mask relative to the feature to be imaged on the basis of the second interference map; and (h) generating an assist feature having a shape which encompasses both the first seeding site and the second seeding site.