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(54) Title: DIFFUSER-LESS GRAY-TONE LITHOGRAPHY PROCESS, MASK DESIGN, AND FABRICATION METHOD

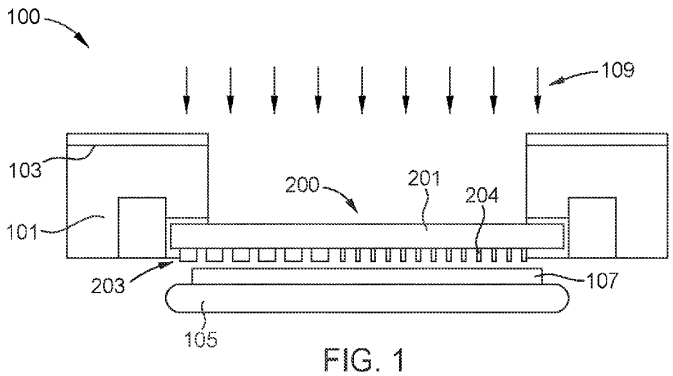

FIG. 1

(57) Abstract: The present disclosure generally relates to mask designs and fabrication for gray-tone lithography. More specifically, embodiments described herein relate to masks designed with a specific pitch to avoid the need for a diffuser. In some embodiments, a mask is provided. The mask includes a substrate and a gray-tone pattern grating disposed on the substrate. The gray-tone pattern grating is defined by a plurality of structures disposed on the substrate. The structures include an absorber layer disposed on the substrate. The gray-tone pattern grating has a pitch of less than or equal to an exposure wavelength of light to pass through the structures. The pitch is defined as a distance between a centers of adjacent structures of the plurality of structures.

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