

MASKLESS LITHOGRAPHY SYSTEMS AND METHODS UTILIZING SPATIAL LIGHT MODULATOR ARRAYS

ABSTRACT OF THE DISCLOSURE

A maskless lithography system that writes patterns on an object. The system can include an illumination system, the object, spatial light modulators (SLMs), and a controller. The SLMs can pattern light from the illumination system before the object receives the light. The SLMs can include a leading set and a trailing set of the SLMs. The SLMs in the leading and trailing sets change based on a scanning direction of the object. The controller can transmit control signals to the SLMs based on at least one of light pulse period information, physical layout information about the SLMs, and scanning speed of the object. The system can also correct for dose non-uniformity using various methods.

Figure 11