3D Fabrication by Moving Mask Deep X-ray Lithography (M^2DXL) with Multiple Stages

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Abstract

The final goal of this study is to establish a technology to realize 3-dimensional (3D) microstructures with free shaped walls by synchrotron radiated deep X-ray lithography. In this paper, we presented two important advancements toward the goal. (1) A reverse approach using Fourier transformation technique to define the optimum X-ray mask movement pattern was improved and applied to a V-grooved microstructure fabrication. (2) A new X-ray exposure system that combines moving mask deep X-ray lithography technique (M^2DXL) and multiple stages was developed and the system performance was confirmed.

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