Measurement of Thin Film Thickness for Nano-Imprint Lithography Based on Near-Field Optics

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Introduction

Measurement method of residual thin film below 100 nm has been required in the process of nano-imprint lithography, to realize this lithography as a next-generation lithography with high reliability.

Measurement principle based on near-field optics





We have proposed a new measurement method based on near-field optics.

Analysis of near-field optical response



Our study revealed that near-field optical responses change upon film thickness and distance to the sample surface. Moreover, it is possible to measure the thin film thickness below 80nm with the resolution about a few nm.

Ref.)S.Minamiguchi, T.Nakao, S.Usuki, S.Takahashi, K.Takamasu JSPE annual meeting in autumn, 187-188, (2006)