HM-005'

Technical Report

Electronic Materials Laboratory
Yokkaichi Research Laboratories
Japan Synthetic Rubber Co., Ltd.

Simulation study for pattern shortening
- Effect of exposure conditions -

Conditions

Simulator: **PROLITH/2 Ver.4.0**

Wave length: **365nm**
Substrate: **Bare-Si**
Photoresist: **PFR IX825G**

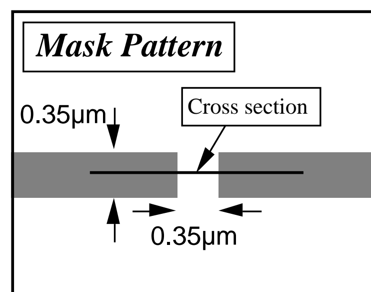

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Figure 1: Effect of Numerical Aperture
Figure 2: Effect of Partial Coherence
Figure 3: Effect of Resist Film Thickness

According to these simulated results, it was suggested that lower numerical aperture and smaller film thickness result in smaller pattern shortening.

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PFRseries

Figure 1 : Effect of NA

Simulated cross section profiles of IX825G
=0.60, Thickness=1.07μm

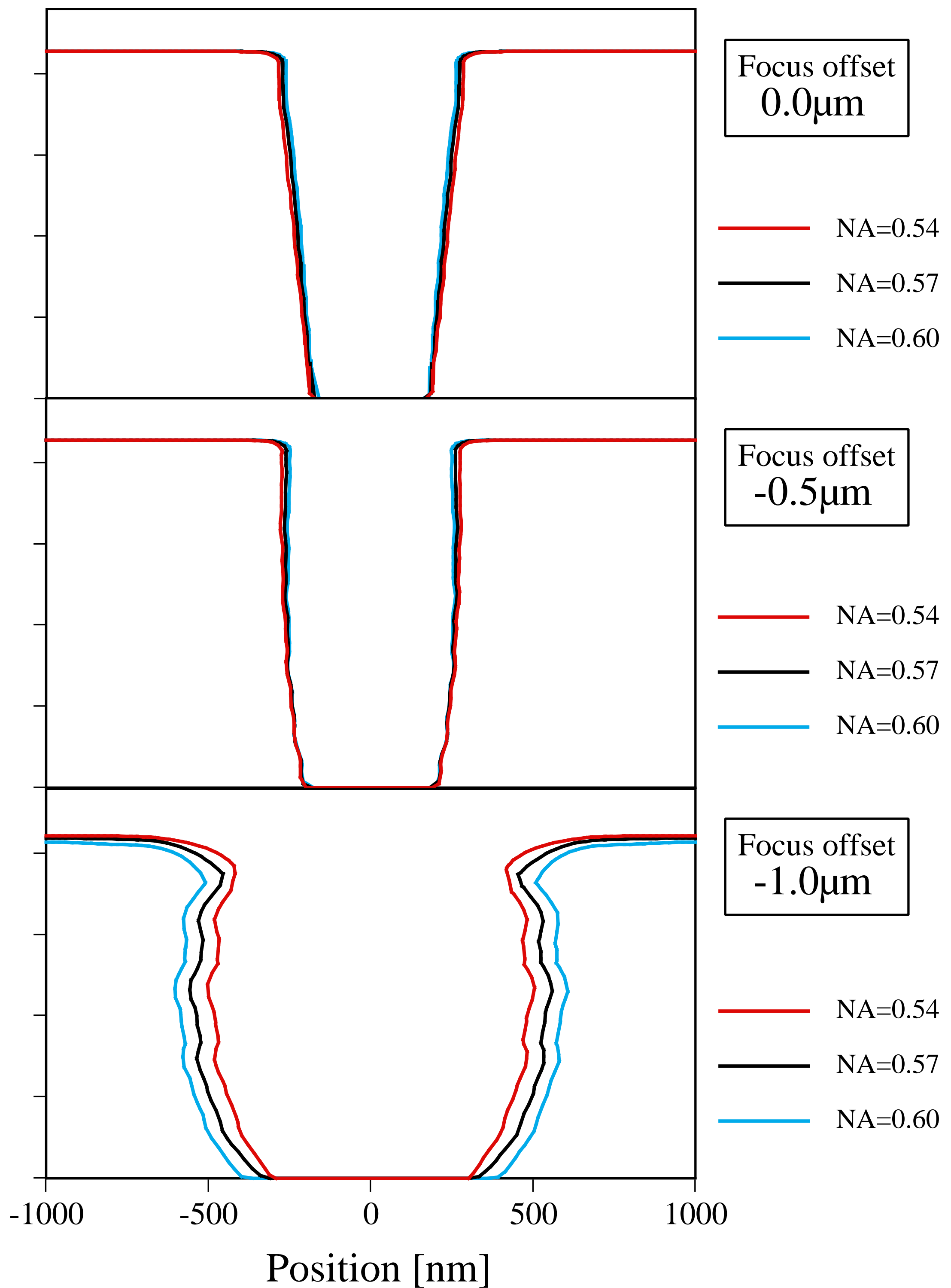

Figure 2 : Effect of

Simulated cross section profiles of IX825G
NA=0.57, Thickness=1.07μm

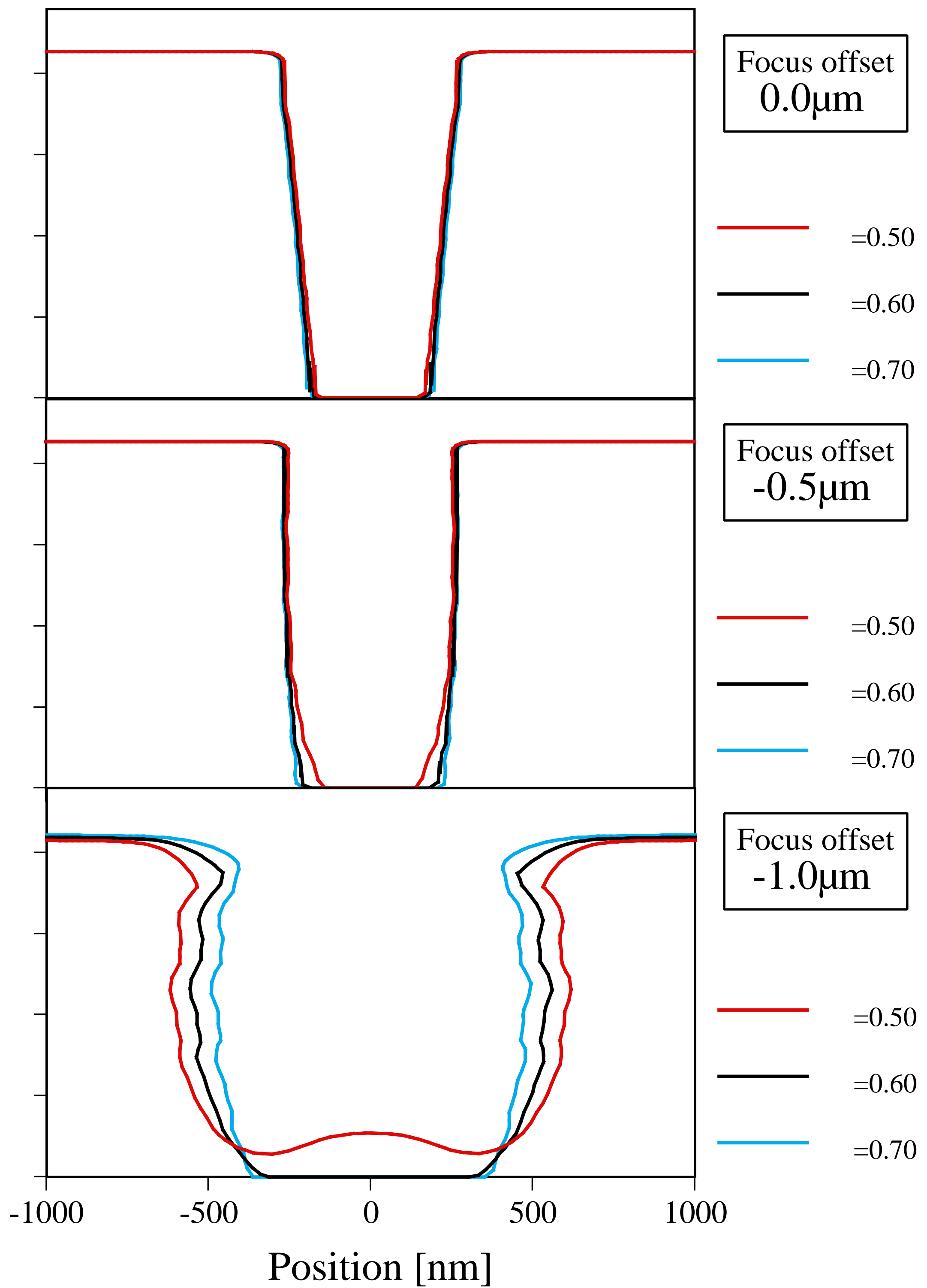

Figure 3 : Effect of Thickness

Simulated cross section profiles of IX825G

NA=0.57, =0.60