

New 157-nm resist based on fluorine-containing polymer has been developed. This resist has over 40% transmittance per 100-nm thickness and the same etch-resistance as 193-nm resists. Fine images with vertical profiles of 200-nm thickness are obtained by contact exposure. Simulations showed that the resolution of this resist with a 157-nm stepper (NA 0.85) has 70-nm L/S and 40-nm isolated-line at a 200-nm thickness. From the results, 157-nm lithography can be accepted as a 70-nm node.