

Supplementary Information

Machine learning in electron beam lithography to boost photoresist formulation design for high-resolution patterning

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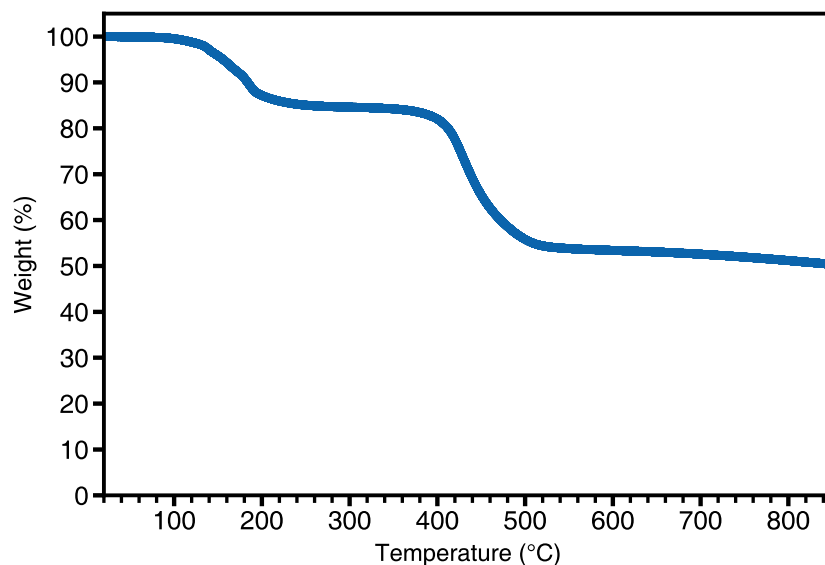


Fig. S1 Thermogravimetric analysis (TGA) curve of the prepared photoresist composition $Zr_6O_4(OH)_4(MAA)_{12}$ under a nitrogen atmosphere. The TGA of $Zr_6O_4(OH)_4(MAA)_{12}$ cluster was performed on a TA instrument, Q5000IR. The thermal decomposition temperature was determined by heating from 22 °C to 850 °C at a rate of 10 °C min⁻¹.

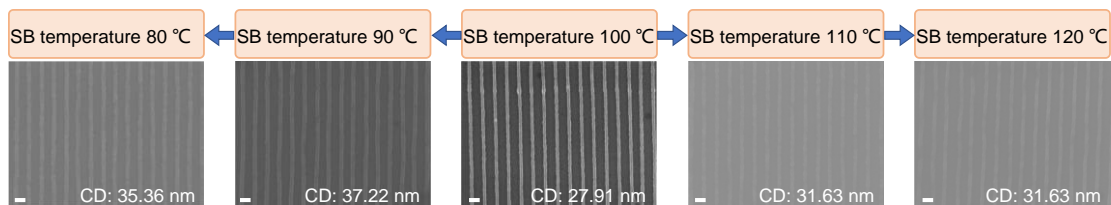


Fig. S2 Determination of appropriate soft bake (SB) temperature. In the SB process, five temperatures of 80 °C, 90 °C, 100 °C, 110 °C and 120 °C were selected, and the line layout was used for electron beam exposure. The photoresist CDs were used as the evaluation indicators, and their values were measured and compared. The suitable SB temperature was determined to be 100 °C. Scale bars denote 100 nm.