

Figure 1. The schematic of process flow followed in this study. During the (a) MALD process, alternating half-cycles of TMA and HQ are repeated for a given number of times in order to deposit the hybrid resist composition. (b) The MALD inorganic-organic hybrid thin films are then subjected to (c) e-beam exposure. (d) The exposed MALD thin film is then developed in a diluted TMAH-based developer solution for 60 s to acquire the desired patterns.

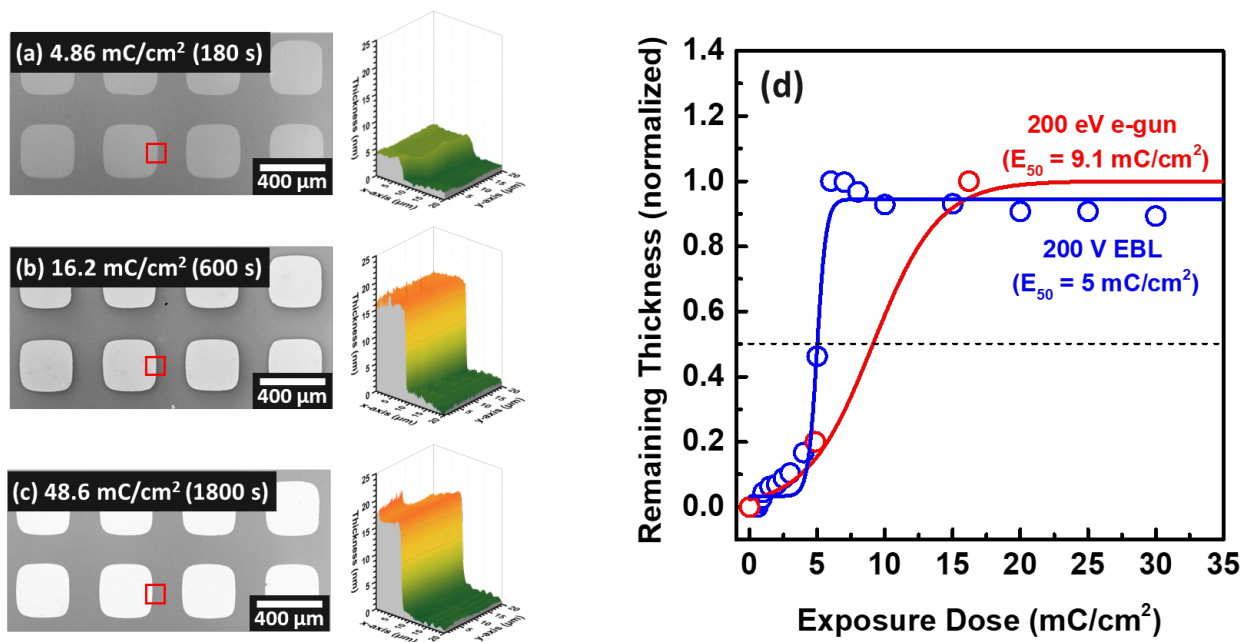


Figure 2. The optical images and height profiles of 300×300 μm patterns achieved at 200 eV electron energy using different exposure dose of (a) 4.86 mC/cm², (b) 16.2 mC/cm², and (c) 48.6 mC/cm². (d) The dose curve of MALD TMA-HQ hybrid resist obtained via 200 eV electron exposure and 200 eV EBL. The post-development thickness was measured using AFM.