

Real-Time Monitoring of Chemical Evolution in Vapor-Deposited Zn-based Hybrid EUV Resists

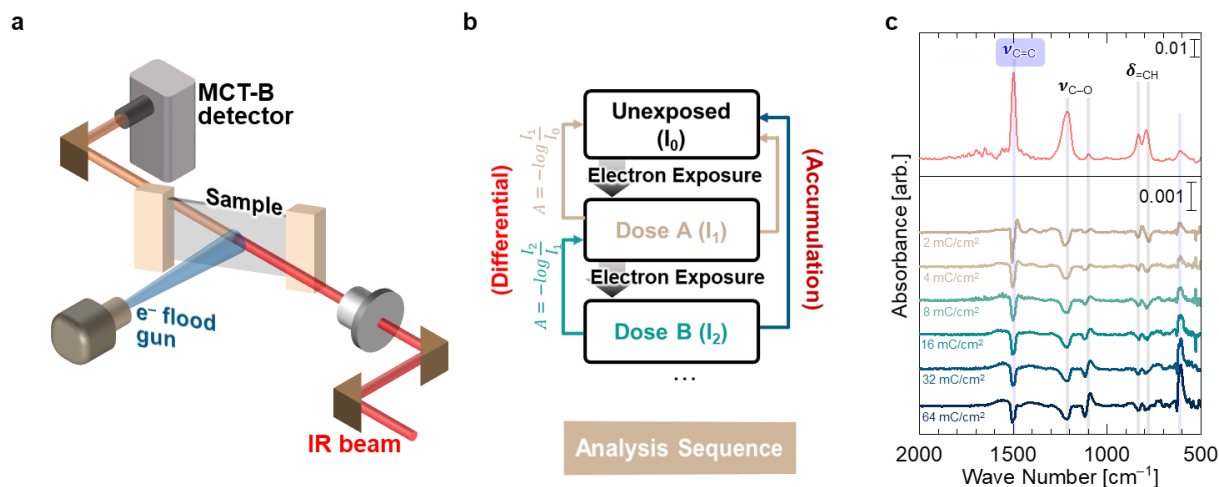


Figure 1. (a) Schematic illustration of *in-operando* FTIR (transmission mode) combined with an electron flood gun for real-time monitoring of chemical evolution under electron-beam exposure. (b) Analysis sequence used to obtain differential and accumulated spectra in the *in-operando* FTIR study. (c) FTIR spectra of as-deposited resist films (top), and differential spectra after each exposure dose referenced to the preceding spectrum (bottom).

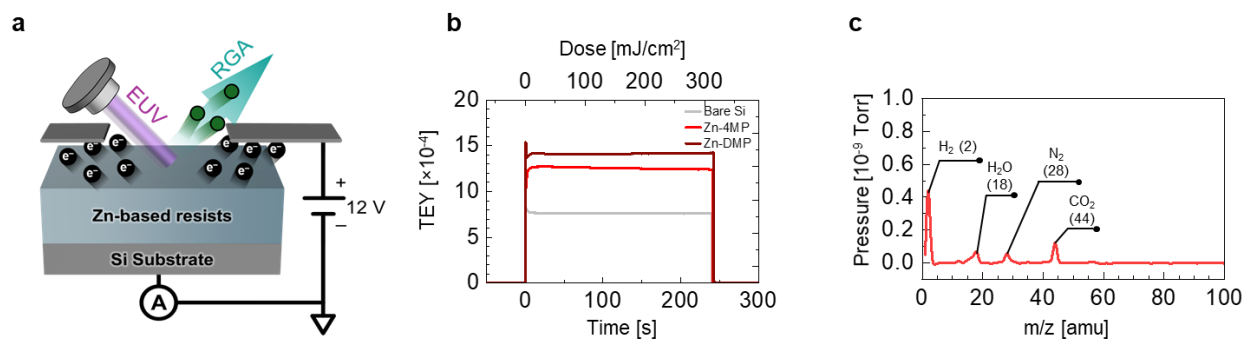


Figure 2. EUV-induced electron emission and outgassing behavior of Zn-based hybrid resists. (a) Schematic of the total electron yield (TEY) measurement in conjunction with the RGA setup. (b) TEY of Zn-based resists compared with a bare Si substrate versus exposure time. (c) RGA spectra recorded during EUV exposure.