Supplementary material

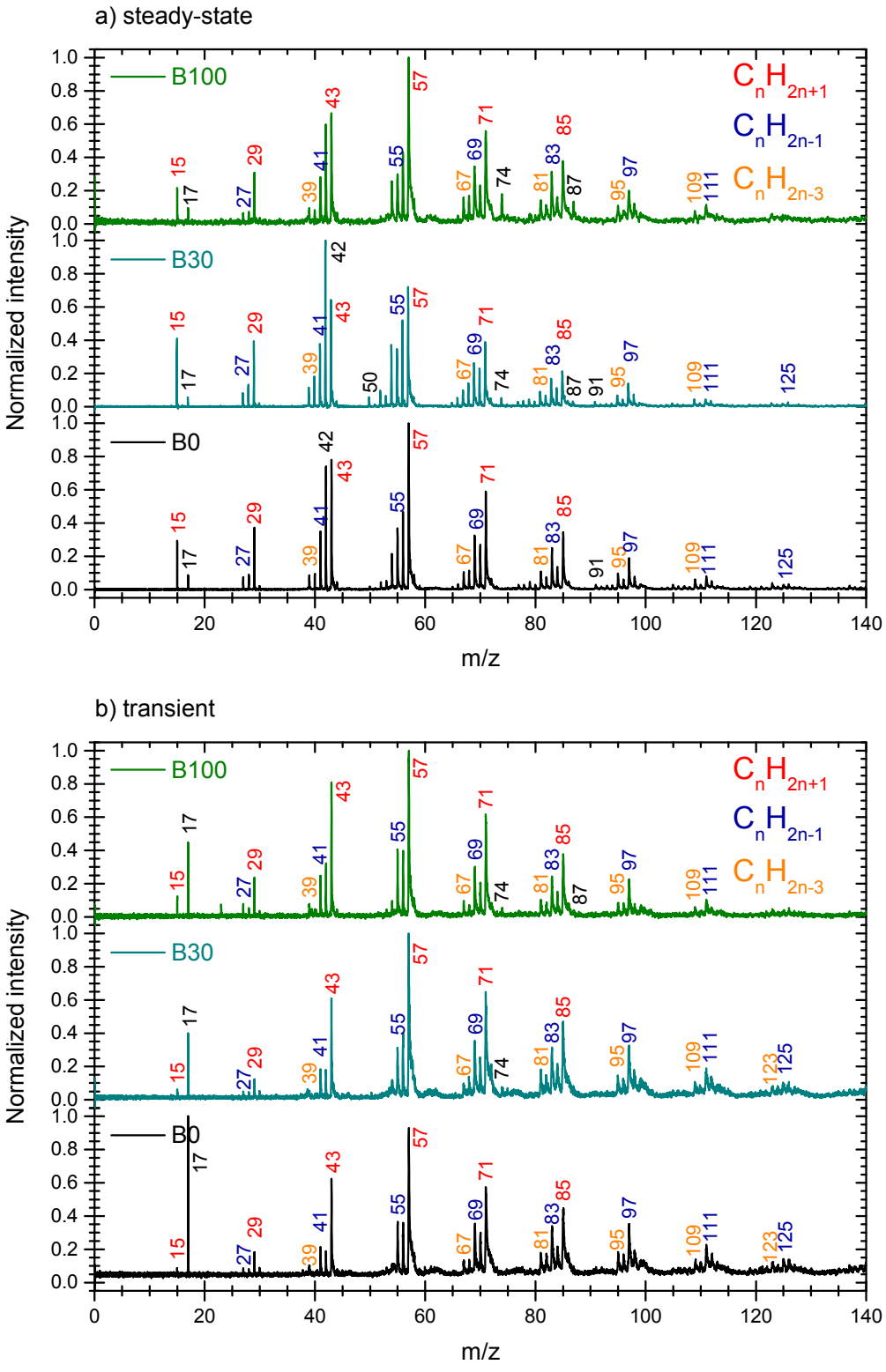

Figure S1. L2MS spectra obtained with SPI at 118 nm for particles emitted in a) steady-state, and b) transient conditions, using B0, B30, and B100.

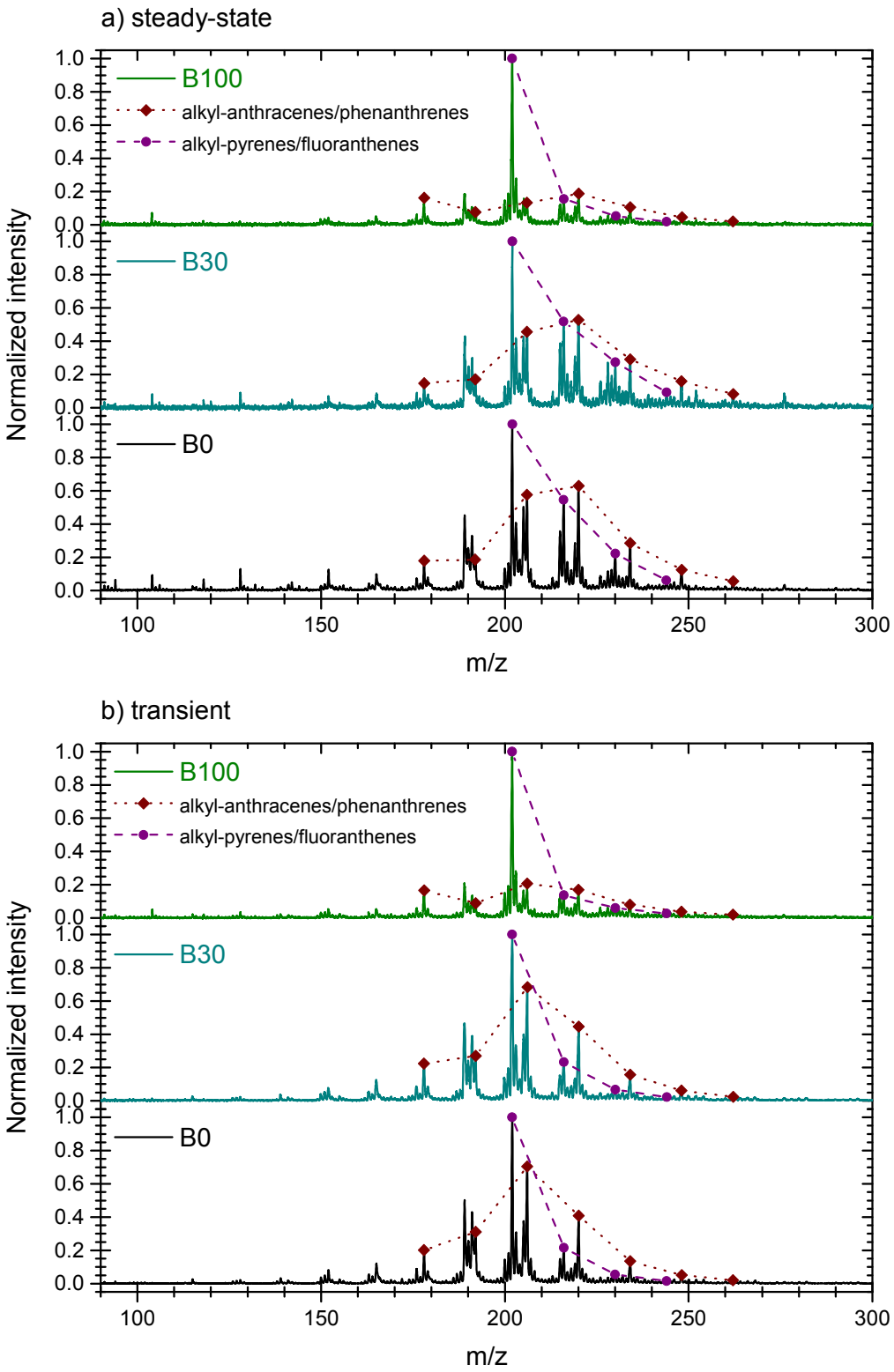

Figure S2. L2MS spectra obtained with R2PI at 266 nm for particles emitted in a) steady-state, and b) transient conditions, using B0, B30, and B100.

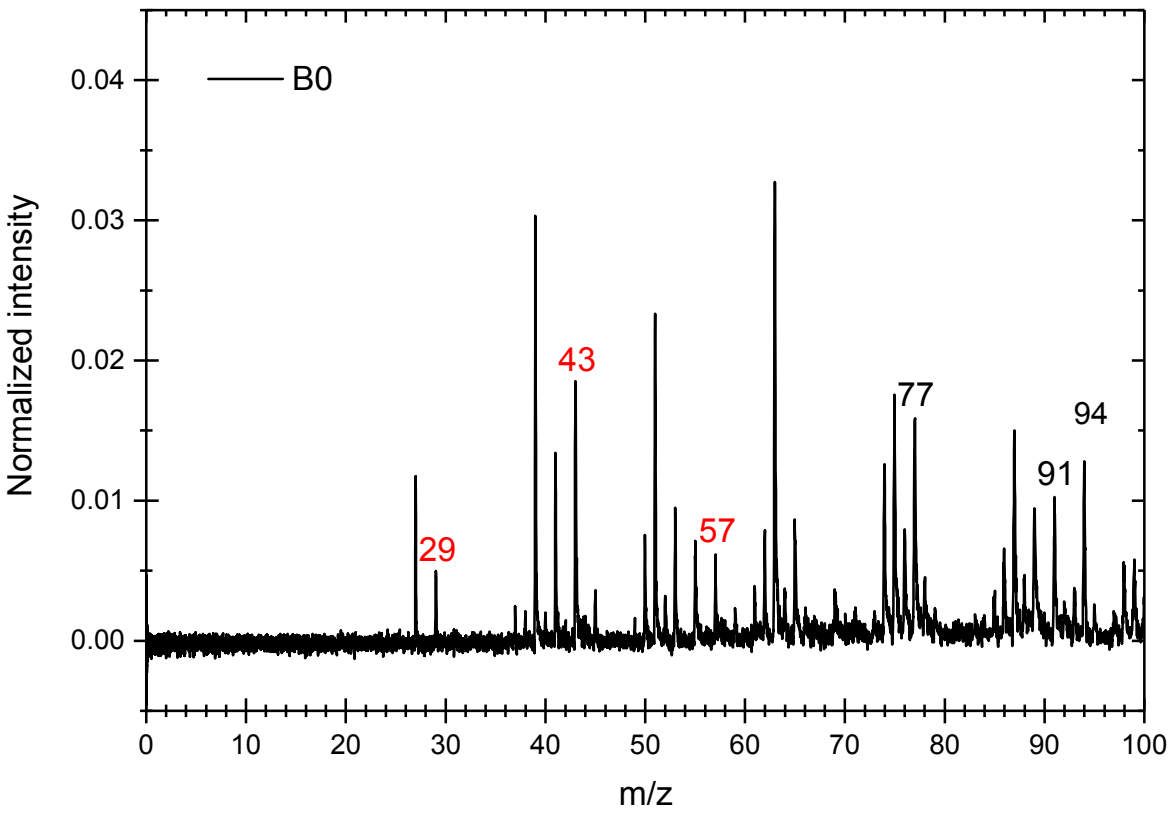

Figure S3. Details of the mass spectrum obtained with R2PI at 266 nm for B0 in transient condition. Red and black numbers are associated with alkyl and aromatic fragments from alkyl-PAHs, respectively.

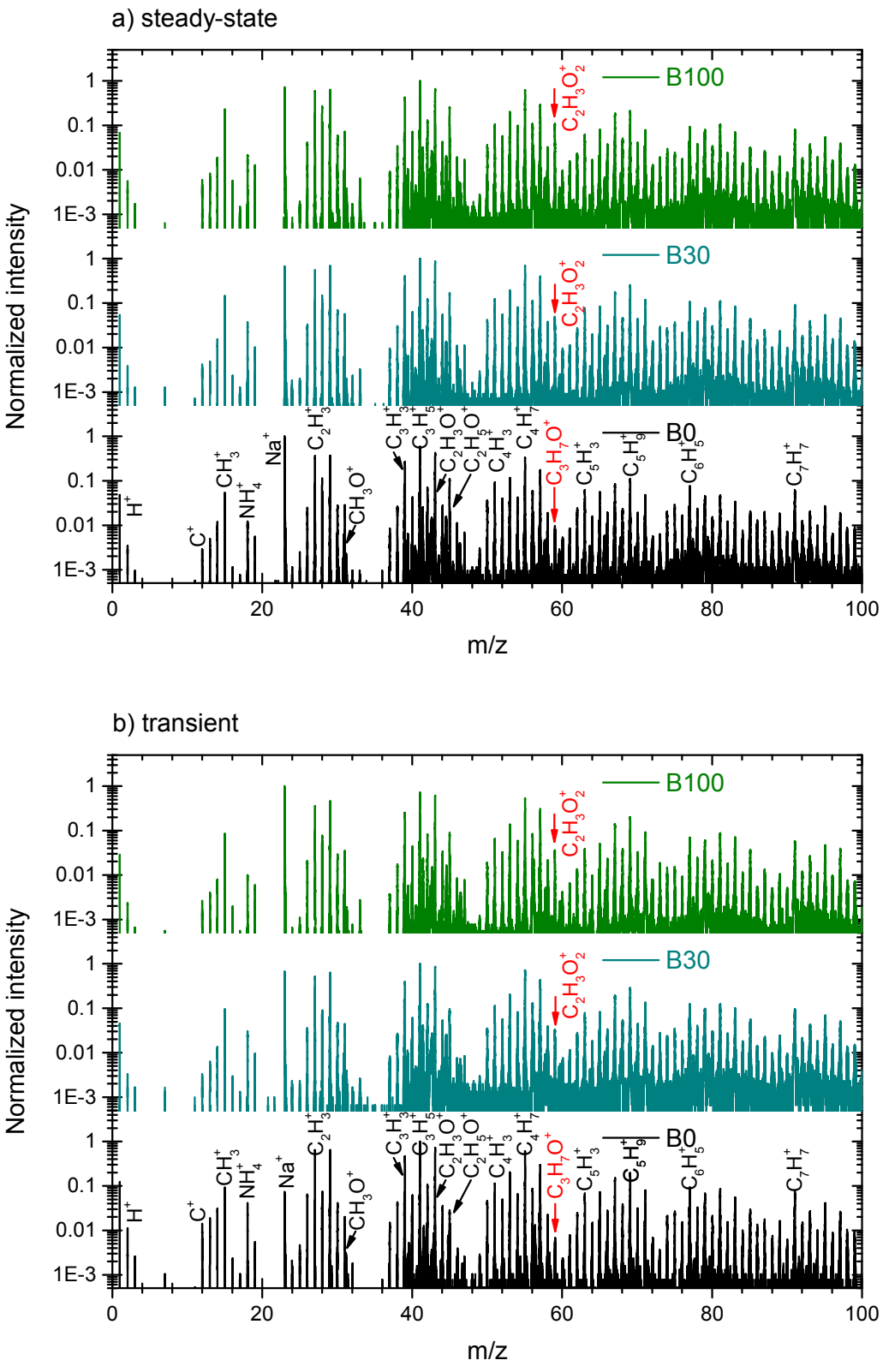

Figure S4. Positive polarity SIMS spectra of particles emitted in a) steady-state and b) transient conditions, using B0, B30, and B100. Assignments of fragment ions are indicated for the B0 mass spectrum, they are identical in B30 and B100 spectra. Specific diesel/biodiesel difference at *m/z* 59 ($C_2H_3O_2^+$) is highlighted by a red arrow.

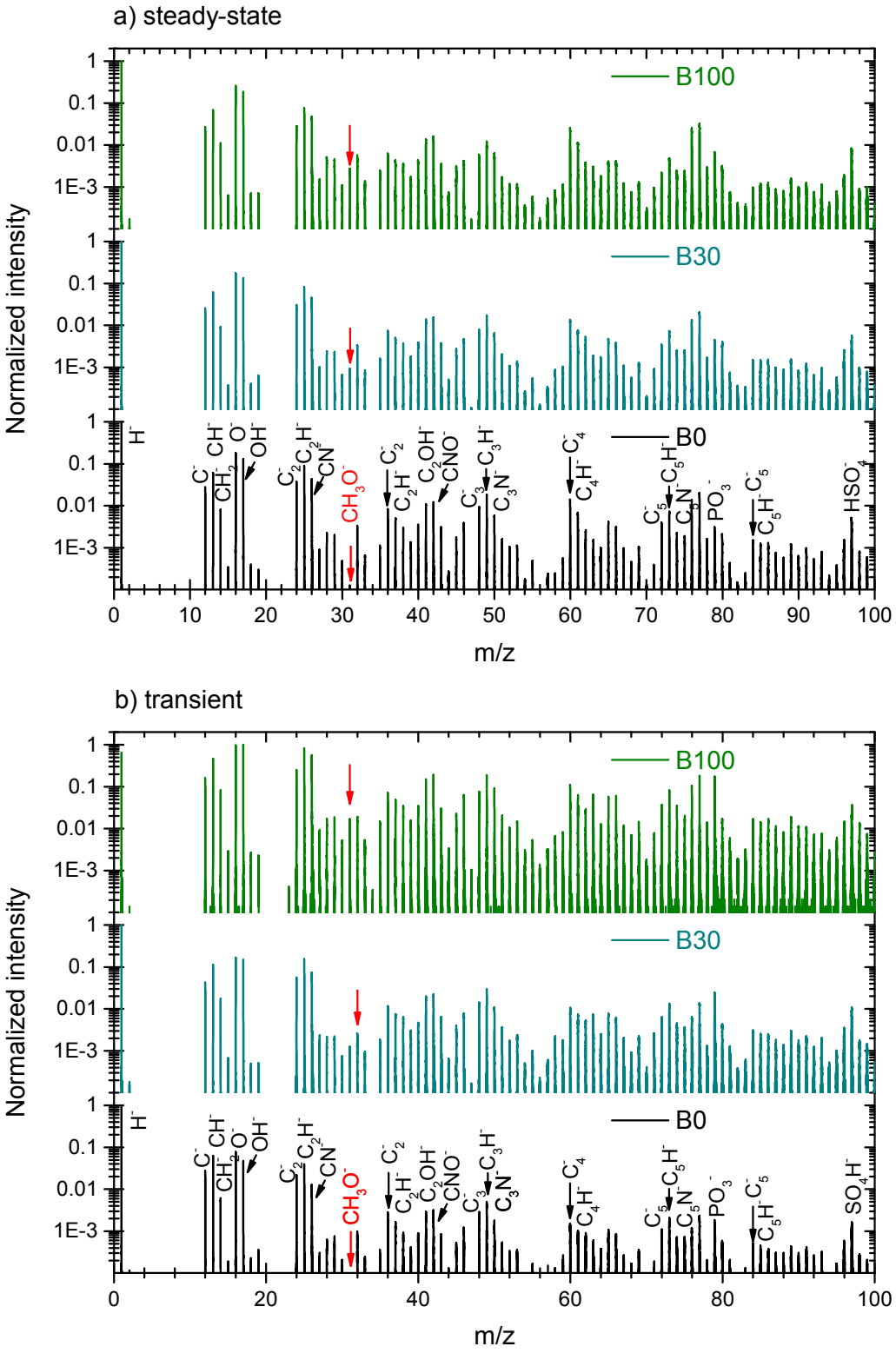

Figure S5. Negative polarity SIMS spectra of particles emitted in a) steady-state and b) transient conditions, using B0, B30, and B100. Assignments of fragment ions are indicated for the B0 mass spectrum, they are identical in B30 and B100 spectra. Specific diesel/biodiesel difference at *m/z* -31 (CH_3O^-) is highlighted by a red arrow.