Supplementary Information for

Characterizing the volatility and mixing state of ambient fine particles in summer and winter of urban Beijing

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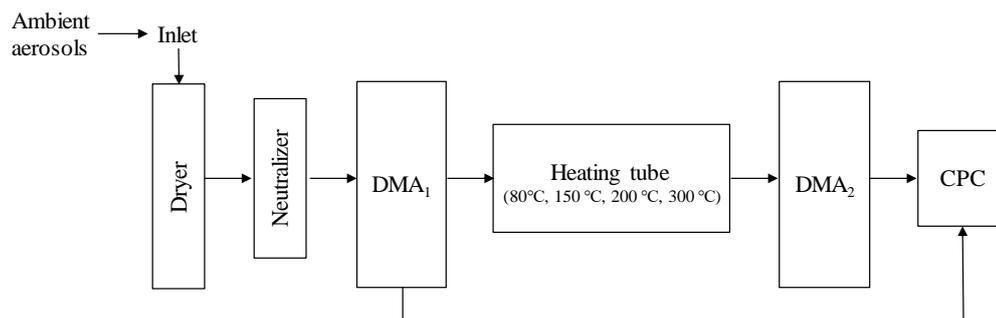
Figure S1. A schematic diagram of the volatility tandem differential mobility analyzer (VTDMA).
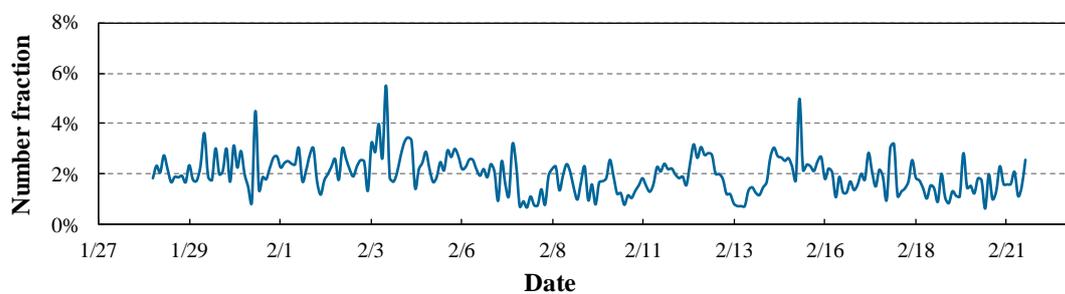
Figure S2. Temporal variation of number fractions of completely vaporized particles during the winter periods.
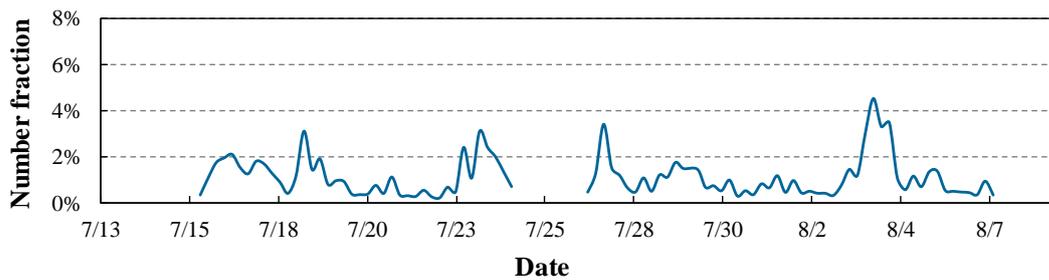
Figure S3. Temporal variation of number fractions of completely vaporized particles during the summer periods.
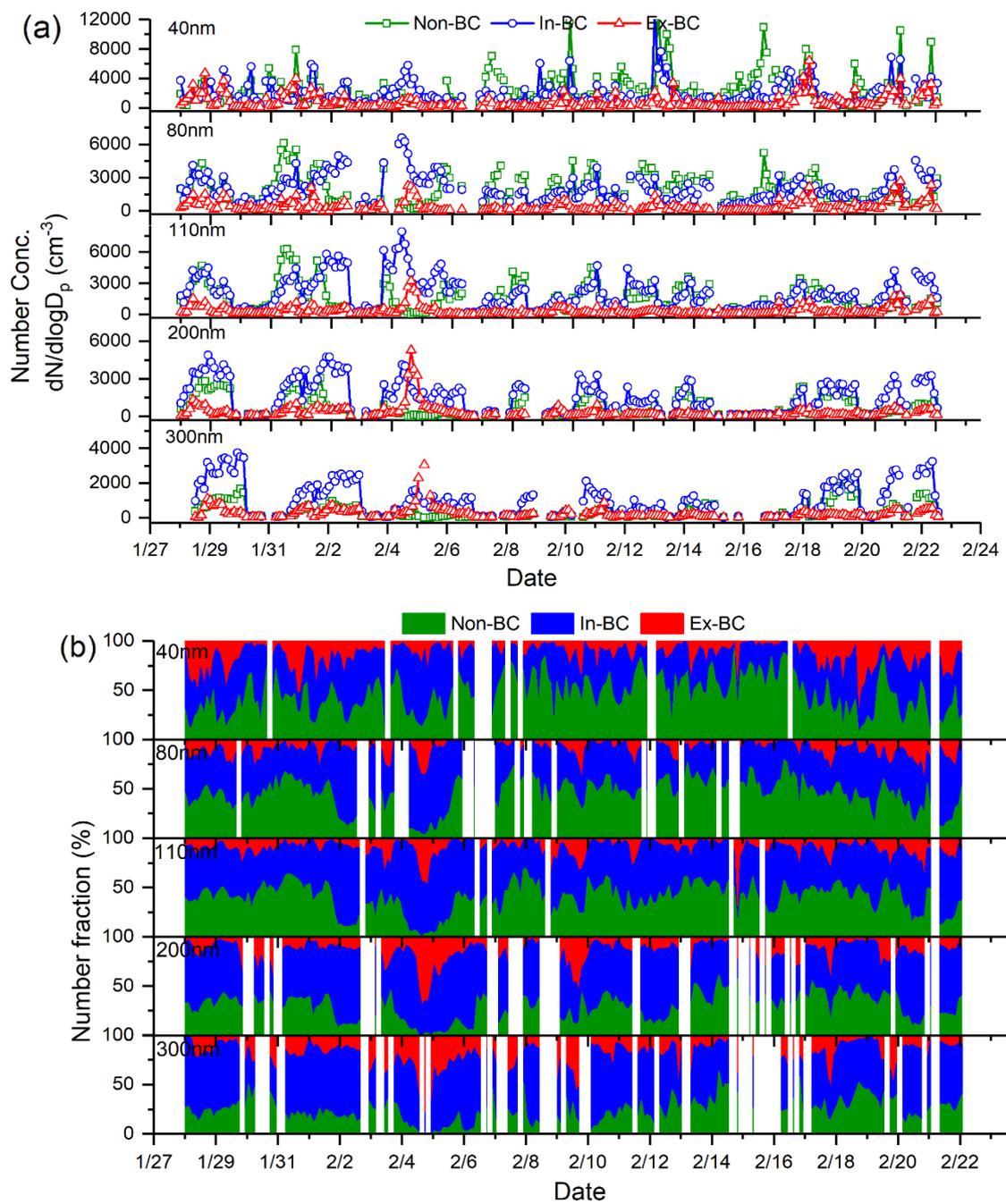
Figure S4. Temporal variation of **(a)** number concentrations and **(b)** number fractions of Non-BC (in green), In-BC (in blue), and Ex-BC (in red) in the range of 40-300 nm particles during the winter periods.
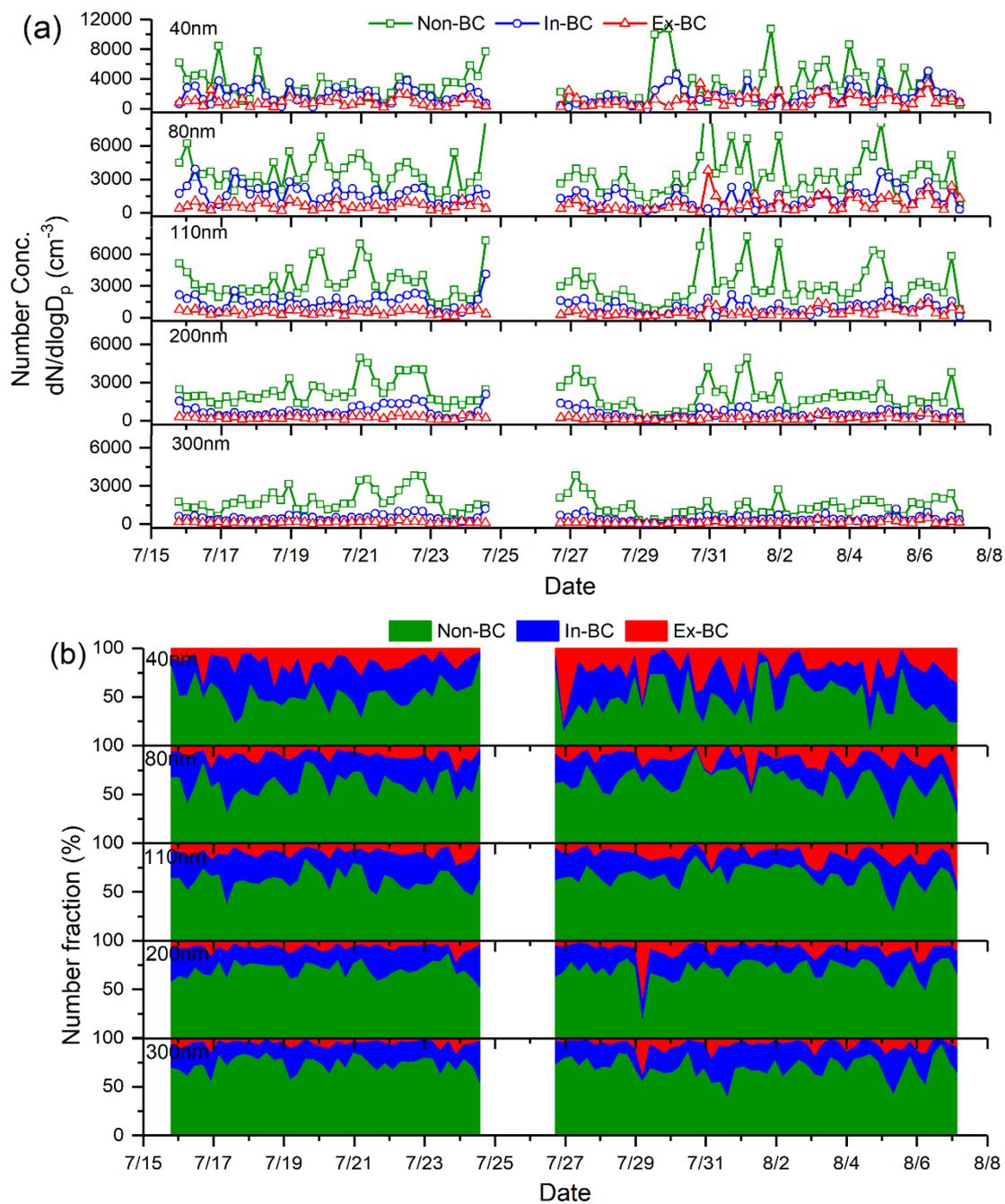
Figure S5. Temporal variation of **(a)** number concentrations and **(b)** number fractions of Non-BC (in green), In-BC (in blue), and Ex-BC (in red) in the range of 40-300 nm particles during the summer periods.
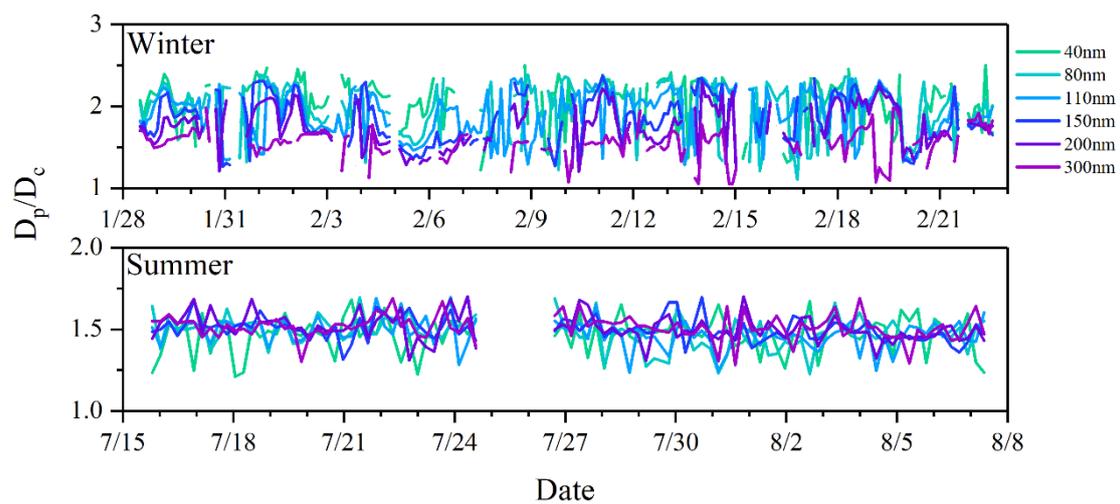
Figure S6. Time series of the size-dependent D_p/D_c ratio during the winter and summer periods.