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*Supplement of*

## **Temporal variations in the hygroscopicity and mixing state of black carbon aerosols in a polluted megacity area**

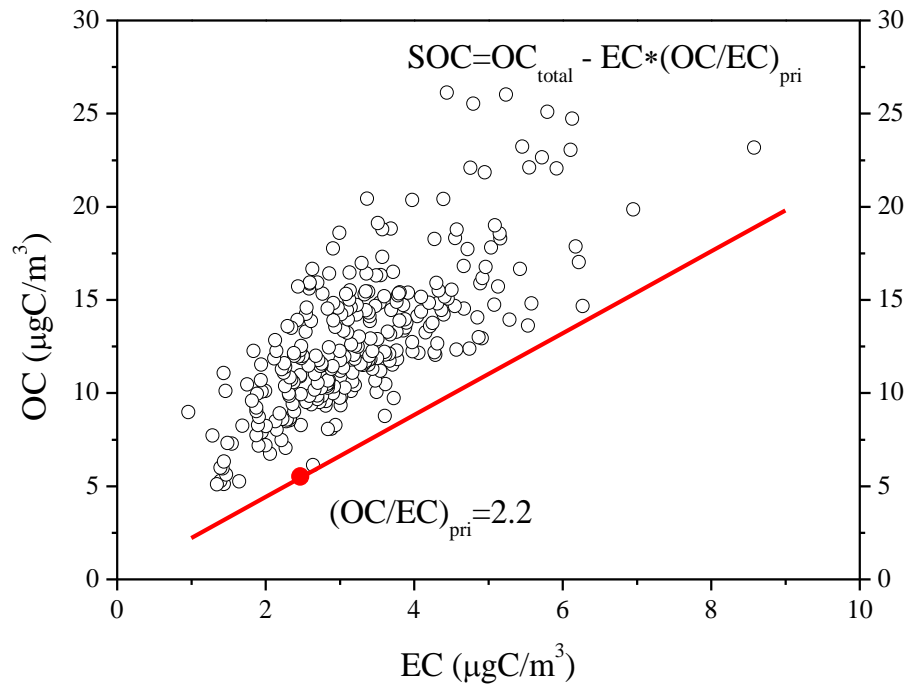
**Kangning Li et al.**

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1 **Supplementary information**

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5 **Figure S1.** The scattering plot for the measured OC and EC concentration. The red  
6 line represents the minimum value of OC/EC ratio.

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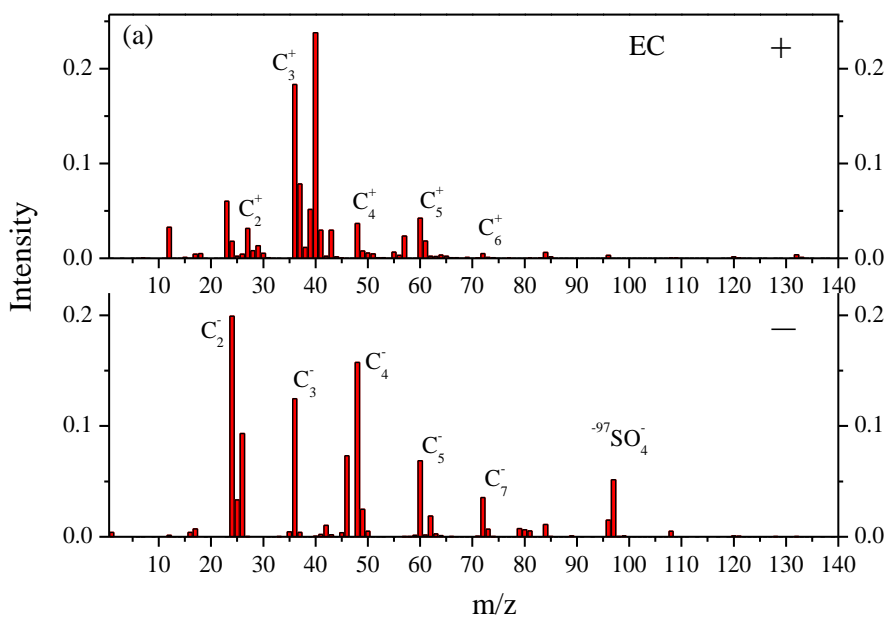
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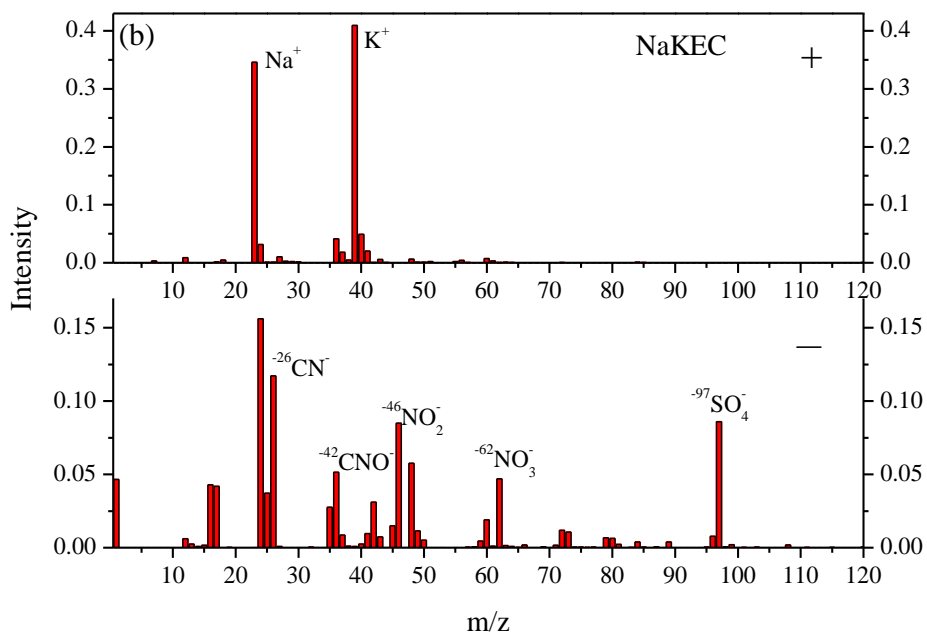
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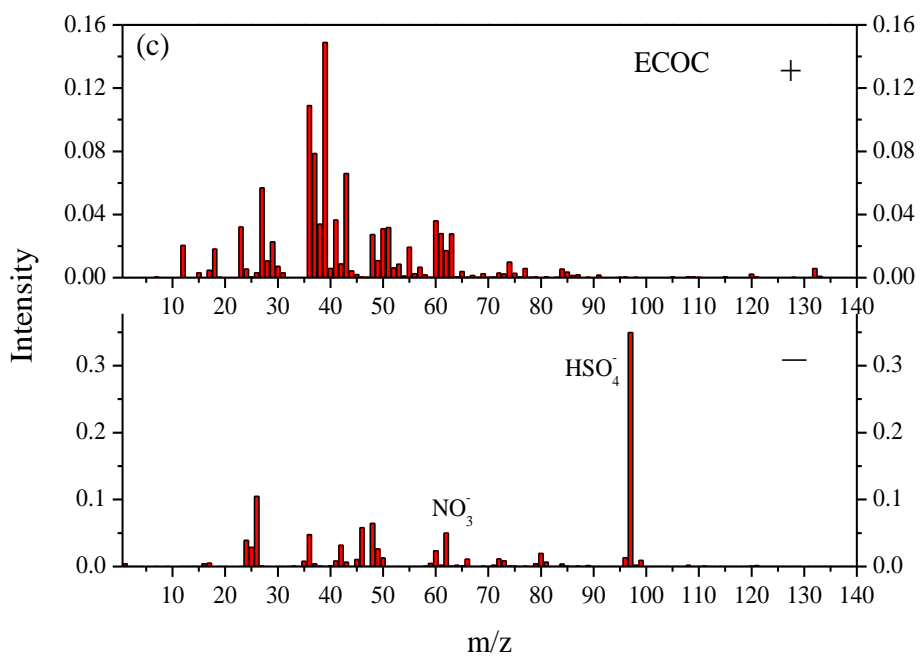
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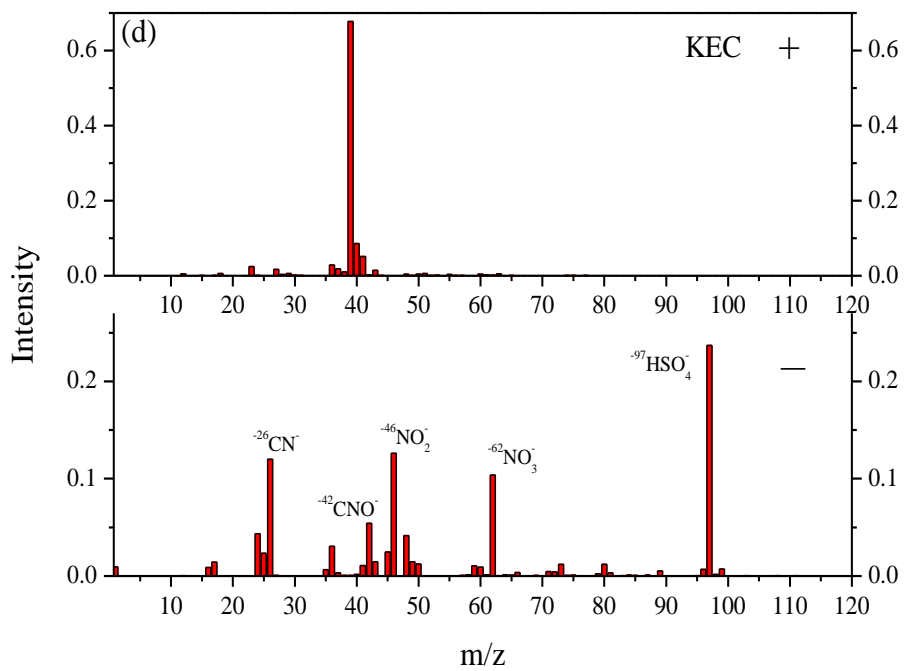
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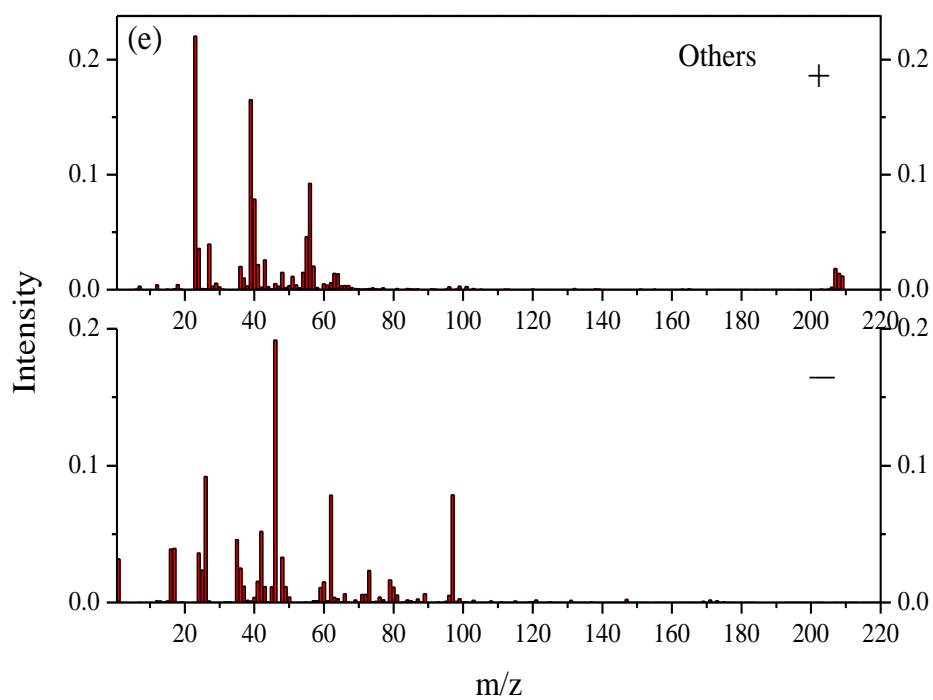
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18 **Figure S2.** Averaged mass spectra of different types of BC-containing particles: (a)  
19 EC; (b) NaKEC; (c) ECOC; (d) KEC; (e) Others (the unit for the intensity is  
20 arbitrary).

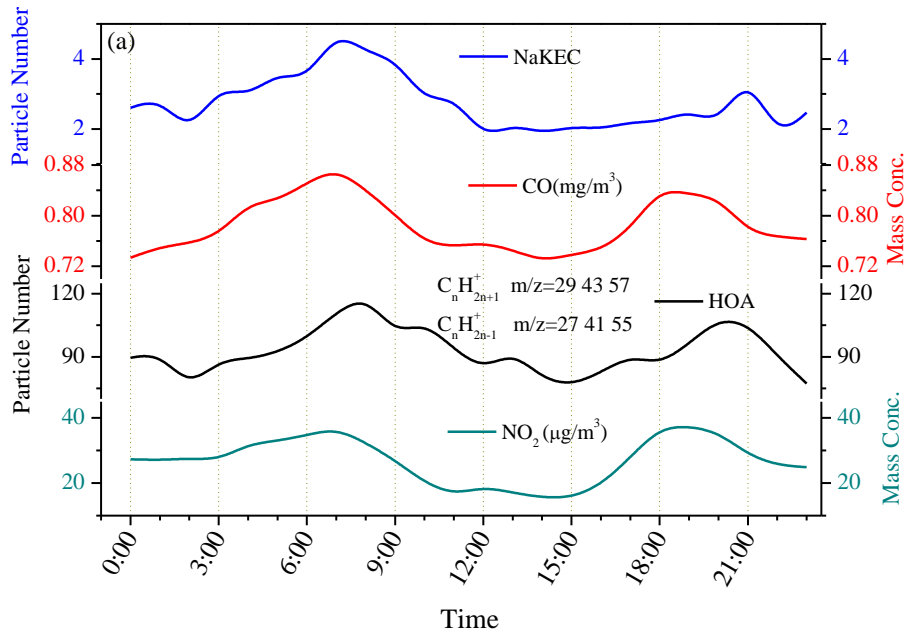
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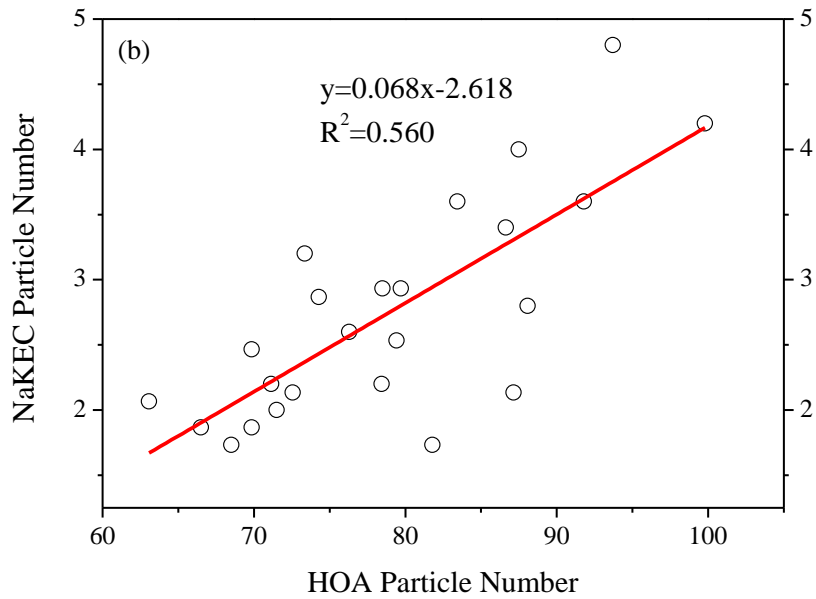
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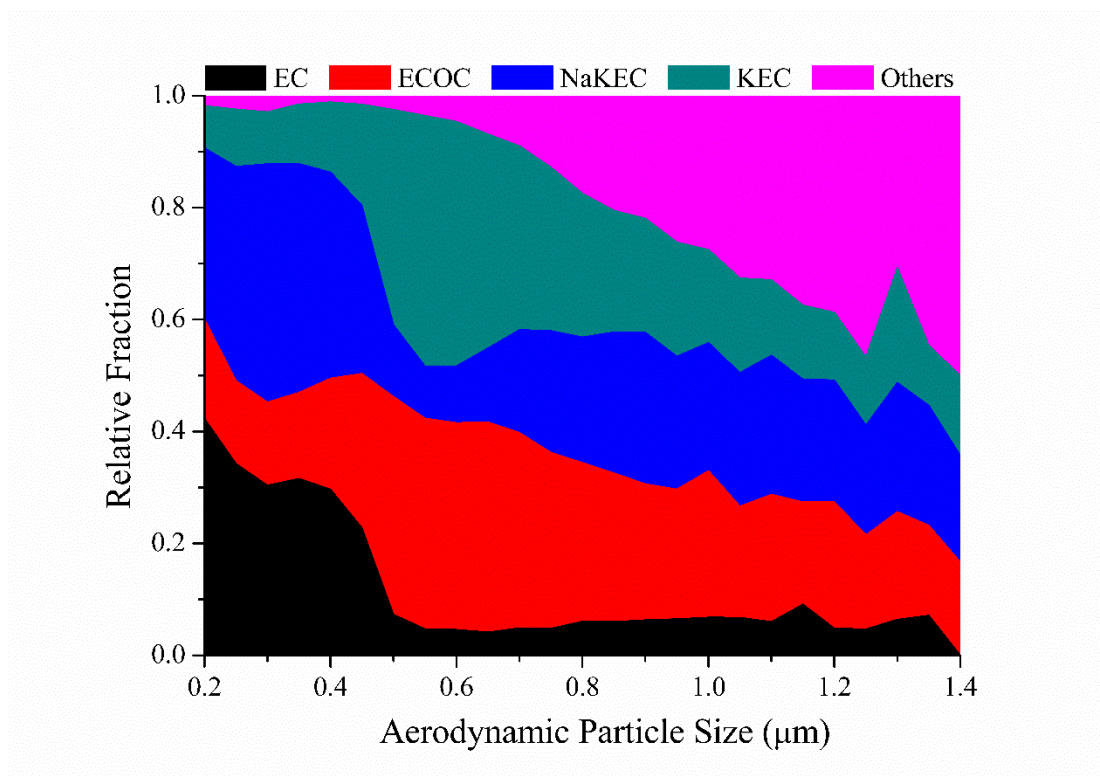
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28 **Figure S3.** (a) Diurnal variation of NaKEC and HOA particle number sampled by  
 29 SPAMS, as well as CO and NO<sub>2</sub> concentrations; (b) Correlation between NaKEC and  
 30 HOA particles.

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33 **Figure S4.** Relative fractions of five particle types as a function of particle size  
34 measured by SPAMS.

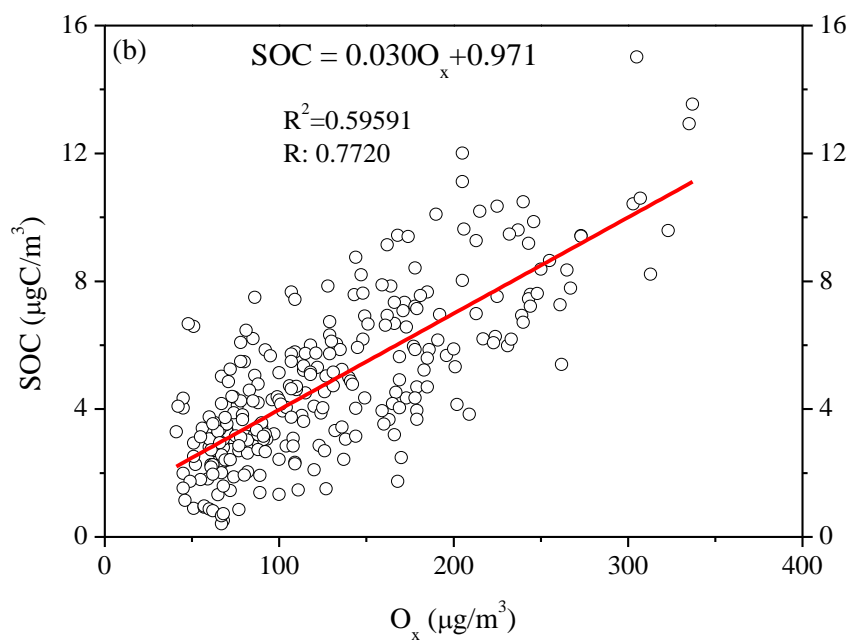
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**Figure S5.** Linear correlation between SOC and  $O_x$  concentration.