

Figure S1. Temporal evolutions of precipitation during entire study period.

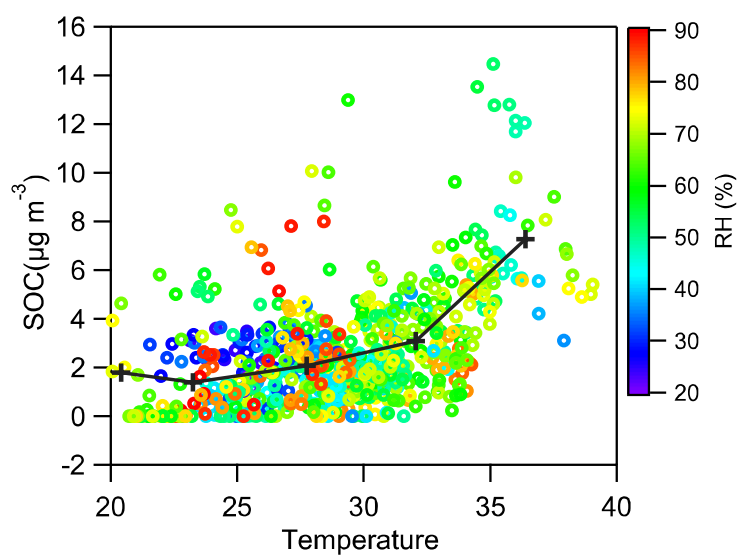


Figure S2. The hourly SOC plotted against temperature and colored with RH during the whole study period.

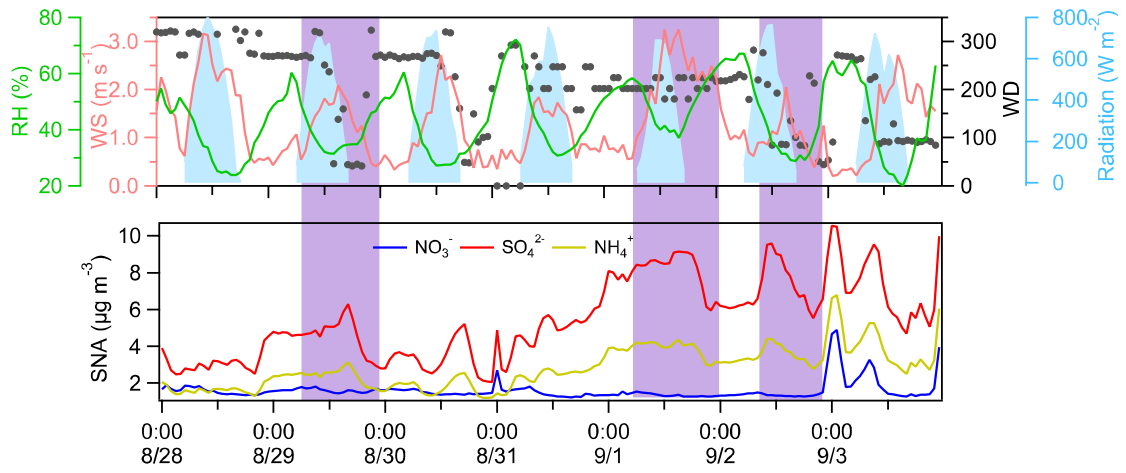


Figure S3. Time series of hourly concentrations of SNA , Cl^- , and meteorological parameters (WS, WD, RH, and Radiation) in S4

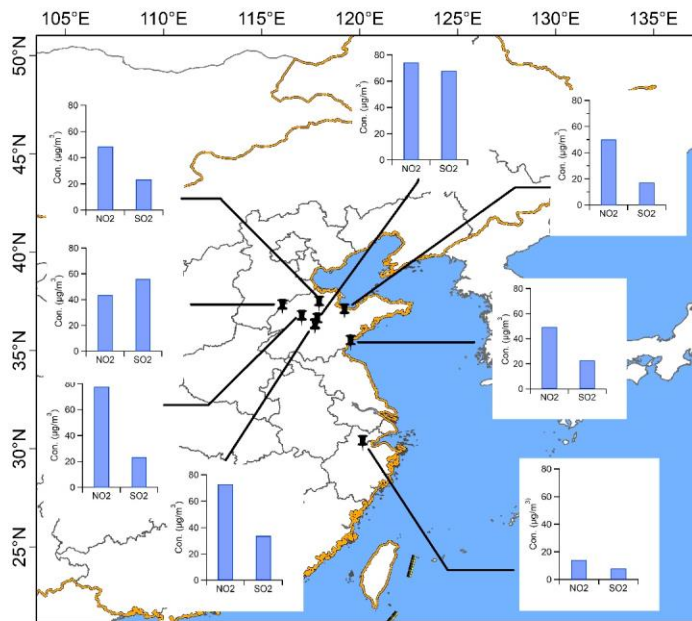


Figure S4. Concentrations of NO₂ and SO₂ in the morning (0:00-5:00AM LST) of 2 September in urban cities of Shandong.

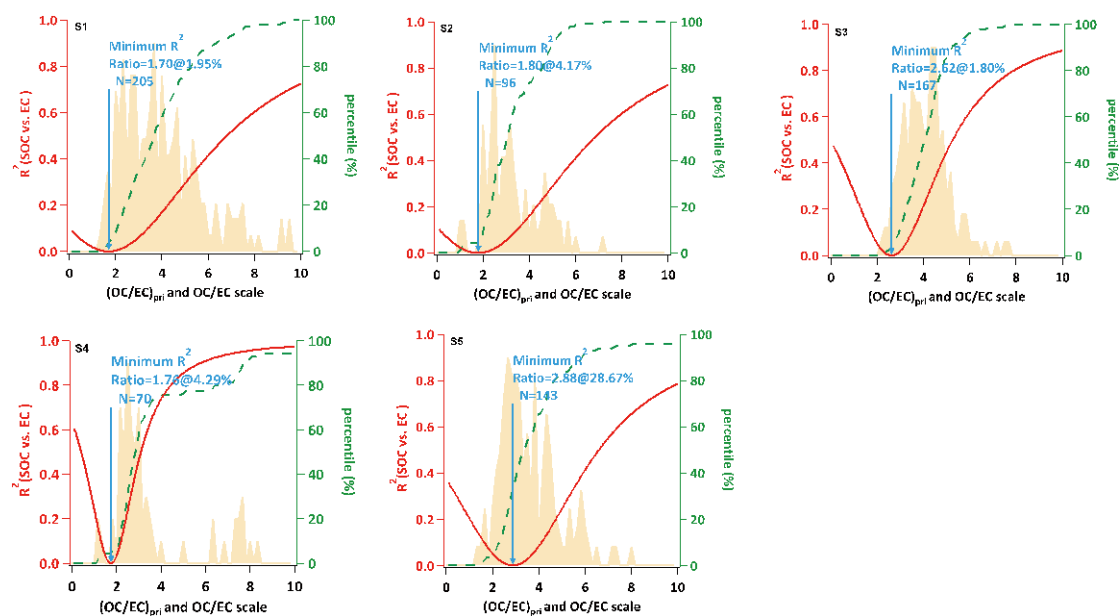


Figure S5. The illustration of minimum R^2 method to calculate $(OC/EC)_{pri}$ for each stage. The red curve indicates the correlation coefficient (R^2) between OC and EC as a function of assumed $(OC/EC)_{pri}$. The shades area in tan is the frequency distribution of the OC/EC ratio for the entire OC and EC data set. The green dashed curve is the cumulative frequency curve of OC/EC ratio.

Table S1. A review of SOC/OC ratios in different urban areas.

City	period	Categories	Method	SOC/OC	Reference
Hangzhou, China	Summer	PM _{2.5}	EC-Tracer method	38%	My study
Hangzhou, China	Winter	PM _{2.5}	EC-Tracer method	40%	(Li et al., 2017)
Hangzhou, China	Annual	PM _{2.5}	EC-Tracer method	53%	(Zhang et al., 2008)
Hangzhou, China	Winter, Spring, Summer, Autumn	PM ₁₀	EC-Tracer method	44.7%, 37.1%, 45.8%, 58%	(Jiao and Qi, 2007)
Suzhou, China	Winter	PM _{2.5}	EC-Tracer method	65%	(Tian et al., 2016)
Nanjing, China	Winter, Spring, Summer, Autumn	PM _{2.5}	EC-Tracer method	30%, 25%, 46%, 39%	(Li et al., 2015)
Beijing, China	Winter, Spring, Summer, Autumn	PM _{2.5}	EC-Tracer method	19%, 27%, 45%, 23%	(Lin et al., 2009)
Tianjin, China	Annual average	PM _{2.5}	EC-Tracer method	61.70%	(Gu, 2010)

Reference

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