

Supplementary Materials:

Table S1. The concentration of speciated IVOCs.

Compound	Concentration	bins	Group
1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	15.82±3.84	B12	halogenated compounds
1-Nonanol	5.81±1.96	B12	oxygenated compounds
Benzene, 1,2,4-trichloro-	5.01±3.58	B12	halogenated compounds
C12	35.14±25.83	B12	alkanes
Methane, bis(2-chloroethoxy)-	17.04±0	B12	halogenated compounds
Naphthalene	158.93±156	B12	PAHs
Pentasiloxane, dodecamethyl-	1.47±1	B12	siloxanes
Phenol, 2,4-dichloro-	3.66±3.6	B12	halogenated compounds
C13	66.54±50.09	B13	alkanes
Cyclohexasiloxane, dodecamethyl-	11.38±8.45	B13	siloxanes
Hexachlorocyclopentadiene	1.79±1.48	B13	halogenated compounds
Naphthalene, 2-methyl-	43.65±41.23	B13	PAHs
Nonanoic acid	65.88±20.7	B13	oxygenated compounds
Phenol, 2,4,5-trichloro-	2.88±2.56	B13	halogenated compounds
1-Undecanol	10.65±5.24	B14	oxygenated compounds
Acenaphthylene	2.18±3.41	B14	PAHs
C14	60.96±48.04	B14	alkanes
Dimethyl phthalate	11.68±8.32	B14	phthalates
Naphthalene, 2-chloro-	7.64±8.06	B14	halogenated compounds
n-Decanoic acid	12.41±11.52	B14	oxygenated compounds
o-Nitroaniline	4.05±1.35	B14	nitrogen-containing compounds
Phenol, 2,4,6-trichloro-	2.95±1.86	B14	halogenated compounds
Acenaphthene	3.59±3.73	B15	PAHs
Benzene, 1-methyl-2,4-dinitro-	4.45±1.71	B15	nitrogen-containing compounds
C15	30.79±23.49	B15	alkanes
m-Nitroaniline	13.57±3.41	B15	nitrogen-containing compounds
Undecanoic acid	19.84±17.3	B15	oxygenated compounds
Azobenzene	9.06±6.31	B16	nitrogen-containing compounds
Benzene, 1-chloro-4-phenoxy-	1.51±2.85	B16	halogenated compounds
C16	23.45±17.28	B16	alkanes
Diethyl Phthalate	2.36±1.55	B16	phthalates
Dodecanoic acid	8.22±4.74	B16	oxygenated compounds
Fluorene	4.74±2.38	B16	PAHs
p-Nitroaniline	4.52±0	B16	nitrogen-containing compounds
Benzene, 1-bromo-4-phenoxy-	2.31±2.17	B17	halogenated compounds
Benzene, hexachloro-	0.48±0.49	B17	halogenated compounds
C17	18.89±13.9	B17	alkanes
Pentadecane, 2,6,10,14-tetramethyl-	8.29±6.19	B17	alkanes
Phenol, pentachloro-	0.72±0.22	B17	halogenated compounds
Anthracene	0.6±1.73	B18	PAHs
C18	14.89±11.27	B18	alkanes
Hexadecane, 2,6,10,14-tetramethyl-	7.56±6.35	B18	alkanes
Phenanthrene	5.79±4.34	B18	PAHs
Tetradecanoic acid	7.92±11.29	B18	oxygenated compounds
C19	4.79±6.94	B19	alkanes
Pentadecanoic acid	5.73±3.32	B19	oxygenated compounds

C20	3.43±3.87	B20	alkanes
Dibutyl phthalate	11.96±14.95	B20	phthalates
n-Hexadecanoic acid	50.27±78.07	B20	oxygenated compounds
C21	2.58±2.81	B21	alkanes
Fluoranthene	0.73±0.56	B21	PAHs
Pyrene	0.46±0.46	B21	PAHs
C22	2.72±4.28	B22	alkanes
Octadecanoic acid	3.64±2.14	B22	oxygenated compounds

Table S2. The concentration of speciated SVOCs.

Compound	Concentration	Bins	Class
Benzyl butyl phthalate	0.09±0.04	B23	phthalates
C23	4.56±10.75	B23	alkanes
Benz[a]anthracene	0.32±0.31	B24	PAHs
C24	9.64±22.9	B24	alkanes
Bis(2-ethylhexyl) phthalate	3.74±4.56	B25	phthalates
C25	8.41±20.73	B25	alkanes
Chrysene	0.31±0.28	B25	PAHs
C26	9.82±23.97	B26	alkanes
C27	8.27±17.84	B27	alkanes
Di-n-octyl phthalate	0.41±0.42	B27	phthalates
Benzo[b]fluoranthene	0.38±0.34	B28	PAHs
Benzo[k]fluoranthene	0.29±0.18	B28	PAHs
C28	6.35±14.39	B28	alkanes
C29	6.56±12.19	B29	alkanes
C30	6.08±13.6	B30	alkanes
C31	5.41±10.26	B31	alkanes
Benzo[ghi]perylene	0.45±0.11	B32	PAHs
C32	2.67±5.36	B32	alkanes
Dibenz[a,h]anthracene	1.17±1	B32	PAHs
C33	1.7±2.93	B33	alkanes
C34	1.5±2.44	B34	alkanes
C35	0.91±1.26	B35	alkanes
C36	0.55±0.63	B36	alkanes

Table S3. The correlation coefficients of volatile bins distribution with temperature, relative humidity, and O₃.

	O ₃ (μg m ⁻³)	Temperature(°C)	Relative Humidity (%)
B12	-0.29435	0.349131	-0.07357
B13	-0.05853	0.390858	0.118873
B14	0.133181	0.418604	0.194536
B15	-0.11098	0.51634	0.217318
B16	0.40647	0.23762	0.635699
B17	0.077111	0.403617	0.526654
B18	-0.18712	0.068422	0.157087
B19	-0.38339	0.181627	-0.18726
B20	-0.36705	-0.49587	-0.40378
B21	-0.00338	0.355574	0.037737
B22	0.478203	-0.12399	0.229875
B23	0.528445	0.071562	0.264346
B24	0.506123	0.040164	0.257279
B25	0.41248	-0.10437	0.258181
B26	0.41849	-0.07386	0.248326
B27	0.31348	-0.17272	0.205697
B28	0.236068	-0.18653	0.178398
B29	0.096025	-0.32404	0.069093
B30	0.078671	-0.27593	0.104513
B31	-0.02649	-0.35267	0.054204
B32	-0.04272	-0.20937	0.113027
B33	-0.07848	-0.35865	0.129658
B34	-0.11866	-0.34249	0.201598
B35	-0.2465	-0.4028	0.178758
B36	-0.22969	-0.37121	0.23129

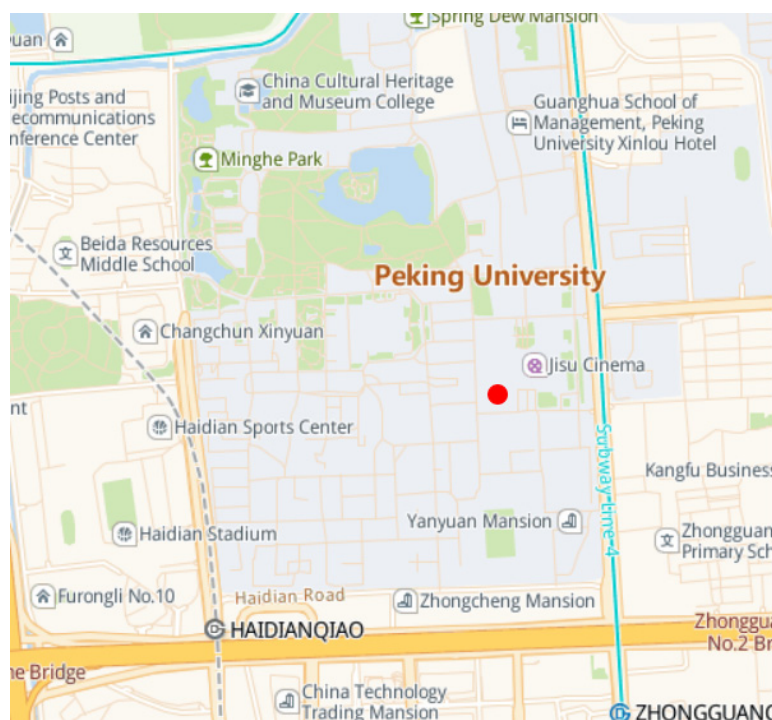


Figure S1. The location of the sample site.

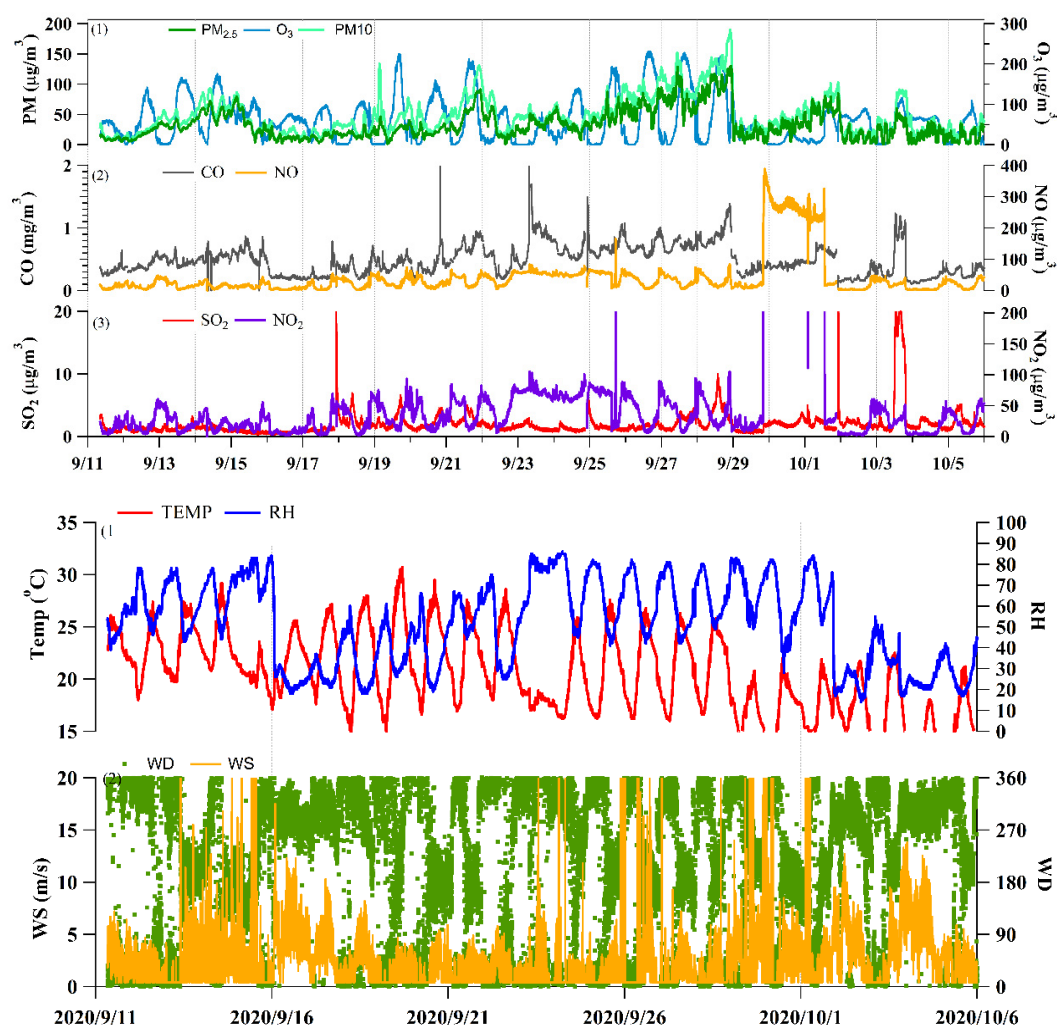


Figure S2. Gaseous pollutants and meteorological conditions during the observation period.

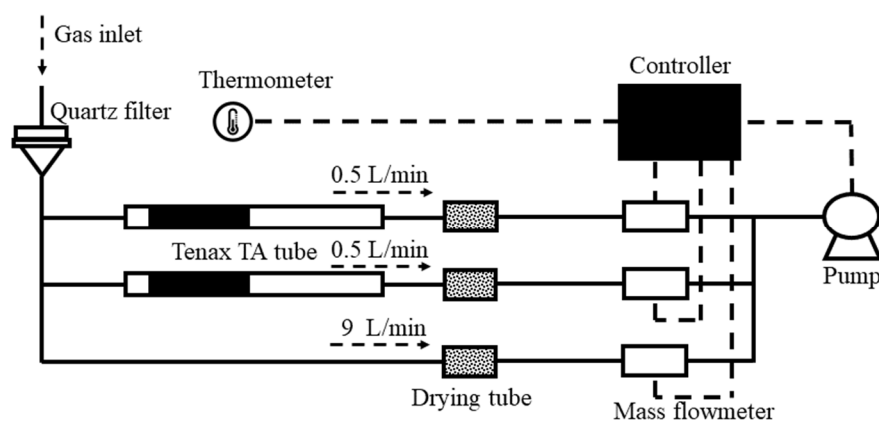


Figure S3. Schematic diagram of gas and particle phase sampling device.

As shown in Figure S3, ambient samples pass through the gas inlet (inert steel pipe) at a total flow rate of 10 L/min to a quartz 47 mm filter (Whatman®- Sigma-Aldrich), which was used to collect particulate constituents, and then split into three paths, two of which pass through two adsorption tubes (Gerstel 6 mm OD, 4.5 mm ID glass tube filled with ~290 mg Tenax TA) at a flow rate of 0.5 L/min for the collection of gaseous constituents, together with a bypass flow rate of 9 L/min.