Supplement of

Development, characterization and application of an improved online reactive oxygen species analyzer based on dithiothreitol assay

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Figure S1. Online and offline DTT standard curve

Table S1. Comparison of the results of this experiment and previous studies

	Fang et.al	Puthussery et.al	This experiment
Δ DTT of blank sample (nmol min ⁻¹)		0.33±0.08	0.14±0.008
Limit of Detection (nmol min ⁻¹)		0.24	0.024
Precision(coefficient of variation)	4.24%		5.61%
Accuracy (an orthogonal fit yielded an equation)	$y = (1.08 \pm 0.12)x - (0.02 \pm 0.03)$ ($R^2 = 0.92$)	$y = 1.08x - 0.07$ ($R^2 = 0.93$)	$y = 0.97x + 0.05$ ($R^2 = 0.95$)

Figure S2. DTT activity day segment diagram (a, the entire sampling period (2021.7.9-2021.7.24); b, before it rains (2021.7.9-2021.7.19); c, is raining (2021.7.19-7.20); d, is down after the rain (2021.7.20-7.23))

Table S2. Concentrations ($\mu\text{g m}^{-3}$) of Water-Soluble Chemical Species in Ambient $\text{PM}_{2.5}$ and correlation coefficient (R) of volume normalized species concentrations with DTT_v respectively for daytime, nighttime.

Parameter	DTT_v	
	day	night
$\text{PM}_{2.5}$	0.018	0.029
SO_2	0.263**	0.094
NO	-0.067	0.081
NO_2	-0.11	0.037
NO_x	-0.106	0.066
CO	0.193*	-0.008
O_3	0.275**	0.155
BC	-0.129	0.1
NH_4^+	0.434**	0.165
K^+	0.231**	-0.054
Mg^{2+}	0.029	-0.036
Ca^{2+}	-0.083	0.009
Na^+	0.351**	-0.106
NO_3^-	0.461**	-0.009
SO_4^{2-}	0.351**	0.09
NH_3	0.231**	0.09

* $P < 0.05$, ** $P < 0.01$.