Supplementary information

Strontium Isotopic Fingerprinting of Atmospheric Particulate Matter by Quadrupole Inductively Coupled Plasma Mass Spectrometry

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Table S1. Doehlert design for the multivariate optimization of the spray chamber temperature and the sample uptake rate

Run	X_1	X_2	T (°C)	UR (µL/min)
1	0	0	10	120
2	1	0	25	120
3	0.5	0.866	18	200
4	−1	0	2	120
5	−0.5	−0.866	5	70
6	0.5	−0.866	18	70
7	−0.5	0.866	5	200

Table S2. Central composite design for the multivariate optimization of the quadrupoles' parameters

Run	X_1	X_2	X_3	CRO (V)	QRO (V)	CPV (V)
1	−1	−1	−1	−14.9	−7.0	−23.2
2	1	−1	−1	−1.1	−7.0	−23.2
3	−1	1	−1	−14.9	1.0	−23.2
4	1	1	−1	−1.1	1.0	−23.2
5	−1	−1	1	−14.9	−7.0	−4.8
6	1	−1	1	−1.1	−7.0	−4.8
7	−1	1	1	−14.9	1.0	−4.8
8	1	1	1	−1.1	1.0	−4.8
9	−1.73	0	0	−20.0	−3.0	−14.0
10	1.73	0	0	4.0	−3.0	−14.0
11	0	−1.73	0	−8.0	−10.0	−14.0
12	0	1.73	0	−8.0	4.0	−14.0
13	0	0	−1.73	−8.0	−3.0	−30.0
14	0	0	1.73	−8.0	−3.0	2.0
15-20	0	0	0	−8.0	−3.0	−14.0

Table S3. Models' coefficients and their significance (Doehlert design)

	Sensitivity (Mcps ppm^{-1})	
Coefficient	**Value**	**p-value**
b_0	65.5	<0.01
b_1	0.48	0.12
b_2	21.3	<0.01
b_{12}	−1.22	0.095
b_{11}	3.70	<0.05
b_{22}	2.48	0.05

Table S4. Models' coefficients and their significance (Central composite design)

	Sensitivity (Mcps ppm^{-1})		Precision (%RSD)	
Coefficient	**Value**	**p-value**	**Value**	**p-value**
b_0	142.3	<0.001	0.0073	<0.001
b_1	6.20	<0.01	0.0048	<0.001
b_2	−14.3	<0.001	0.0048	<0.05
b_3	22.0	<0.001	0.0048	<0.05
b_{12}	−2.83	0.07	0.0064	<0.05
b_{13}	5.10	<0.01	0.0064	<0.01
b_{23}	−0.81	0.55	0.0064	<0.05
b_{11}	−28.0	<0.001	0.0045	<0.001
b_{22}	−8.74	<0.001	0.0045	<0.01
b_{33}	−27.6	<0.001	0.0045	<0.001