



*Supplement of*

## **Measurement of iodine species and sulfuric acid using bromide chemical ionization mass spectrometers**

**Mingyi Wang et al.**

*Correspondence to:* Xu-Cheng He ([xucheng.he@helsinki.fi](mailto:xucheng.he@helsinki.fi)) and Yee Jun Tham ([thamyj@mail.sysu.edu.cn](mailto:thamyj@mail.sysu.edu.cn))

The copyright of individual parts of the supplement might differ from the article licence.

**Table S1: Instrument specifications for Br-MION-CIMS and Br-FIGAERO-CIMS.** The values are specific to our instruments, thus can vary according to instrument parameters.

Instrument specifications	Br-MION-CIMS (lab)	Br-MION-CIMS (CLOUD)	Br-FIGAERO-CIMS
Total sample flow (slpm)	20	32	18
IMR pressure (mbar)	1000	1000	150
IMR residence time (ms)	30	20	200
SSQ pressure (mbar)	1.9	2.2	2.0
BSQ pressure (mbar)	0.011	0.012	0.011
<sup>a</sup> MION accelerator (V)	-2750	-2800	n/a
<sup>b</sup> MION deflector (V)	-210	-290	n/a
Nozzle (V)	11.4	-1.4	0.05
SSQ EP (V)	13.79	-5.13	0.10
SSQ front (V)	20.92	12.45	0.20
SSQ back (V)	-16.94	8.22	-0.30
Lense skimmer (V)	-16.17	-6.16	-0.19
Skimmer (V)	0.59	0.63	4.00
BSQ front (V)	4.78	1.76	5.89
BSQ back (V)	4.93	2.76	5.90
Skimmer 2 (V)	5.77	5.69	5.92
Reference (bias) (V)	124.94	105.87	121.99
Ion-lense (V)	34.076	31.21	39.78
Deflector flange (V)	53.79	75.91	88.31
Deflector (V)	61.77	83.82	95.08
Mass analyzer	microchannel plate detector	microchannel plate detector	microchannel plate detector
Mass resolution	~ 10000	~ 10000	~ 10000

<sup>a</sup> The voltage to accelerate the reagent ions in the ion source (Rissanen et al. 2019).

<sup>b</sup> The voltage to deflect the reagent ions to the sample flow (Rissanen et al. 2019).

## References

Rissanen M.P., Mikkilä J., Iyer S., Hakala J., Multi-scheme chemical ionization inlet (MION) for fast switching of reagent ion chemistry in atmospheric pressure chemical ionization mass spectrometry (CIMS) applications. Atmos. Meas. Tech. 12, 6635-46. 2019