Electronic Supplementary Material (ESI) for Analytical Methods.

SUPPLEMENTARY MATERIAL

Analytical Methods

iPRECON: An integrated preconcentrator for the enrichment of volatile organics in exhaled breath

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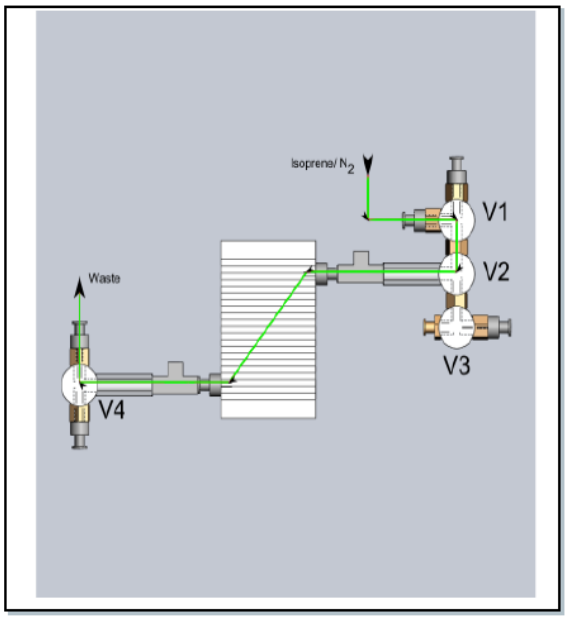
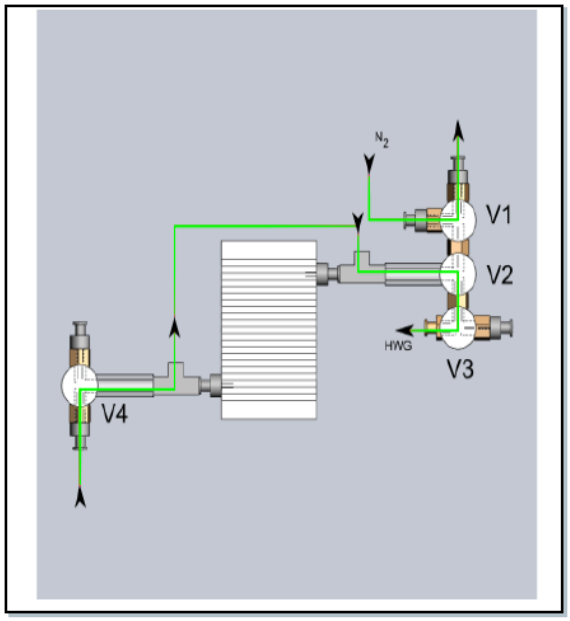
The following figures illustrate the propagation path of the gases/samples during the adsorption, desorption, measurement, and regeneration phase using iPRECON. In green, the path of the gas is shown; to the right, the corresponding parameters for each sequence are provided.



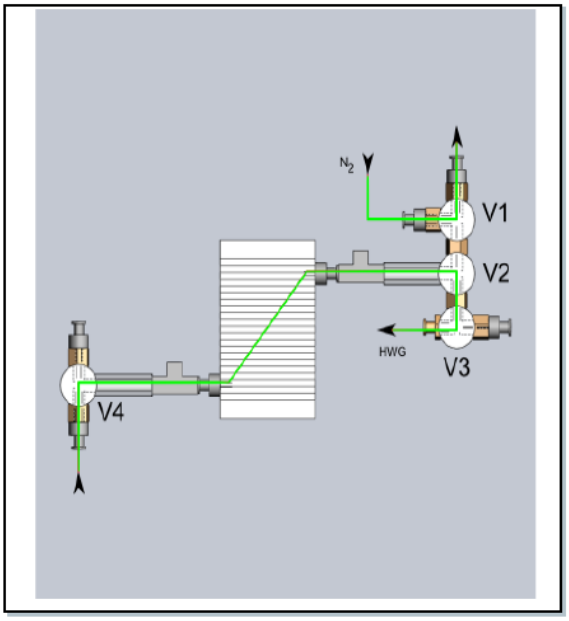
Sampling cycle	Temperature °C	25
	Flow mLmin^{-1}	200
	Used Gas	N_2 / Isoprene
	Sample Volume L	2

Figure 1: Sampling cycle.



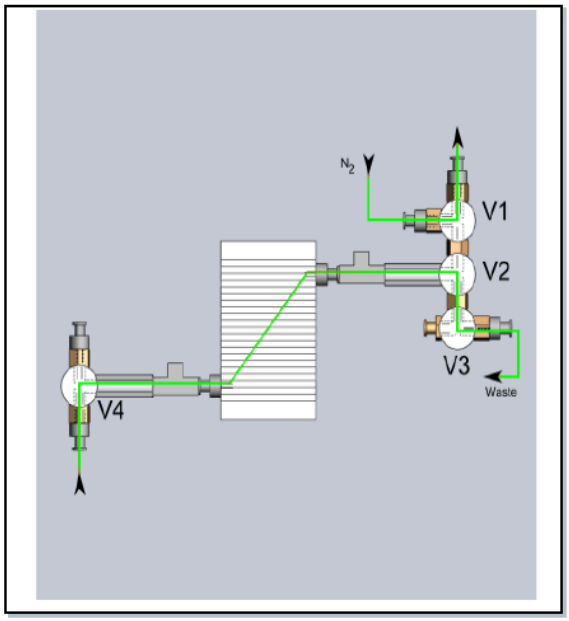
Heating cycle	Temperature °C	From 25 to120
	Flow mLmin^{-1}	10 mLmin^{-1}
	Used Gas	N_2

Figure 2: Heating cycle.



Measuring cycle	Temperature °C	120
	Flow mLmin-1	5
	Used Gas	N_2

Figure 3: Measurement cycle.



Cleaning cycle	Temperature °C	from 120 to 25
	Flow mLmin-1	200
	Used Gas	N_2

Figure 4: Cleaning / regeneration cycle.

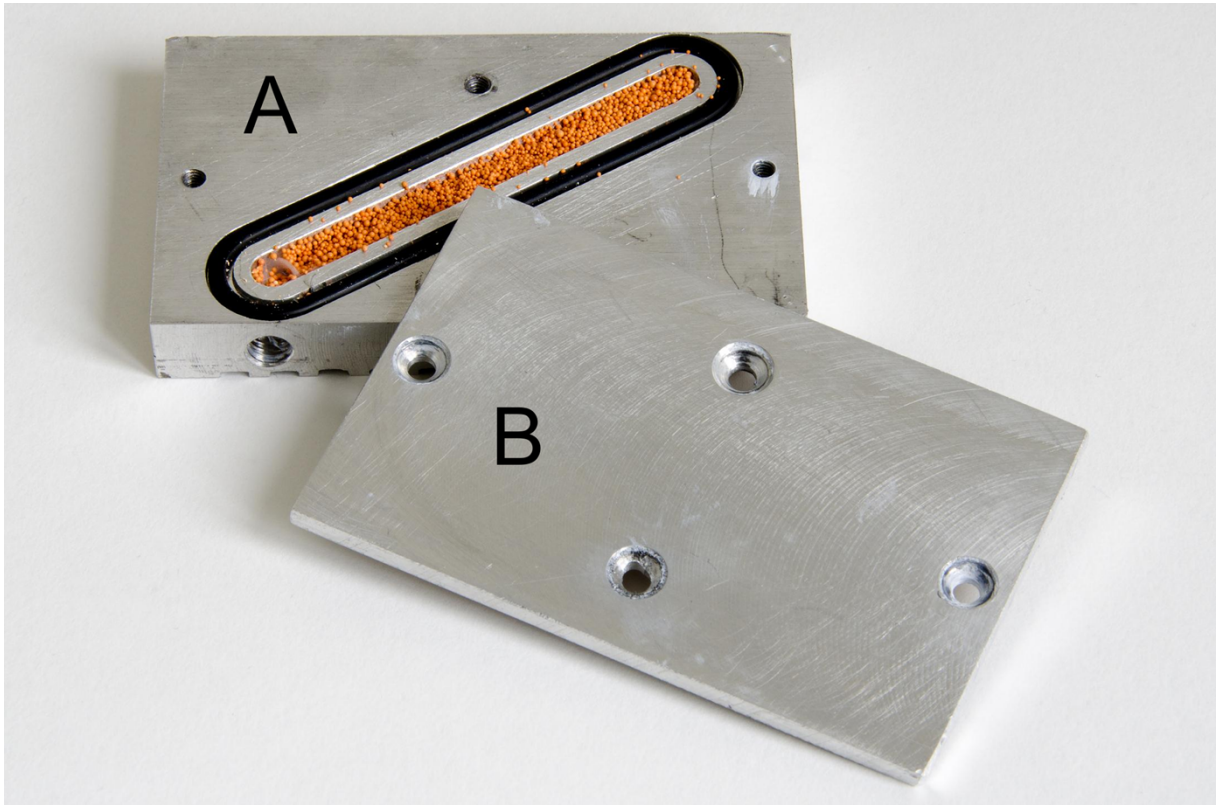


Figure 5: Image of open iPRECON device; (A) iPRECON with packed sorbent channel (Dowex Optipore L493; orange spheres) and O-ring sealing; (B) cover plate for iPRECON.

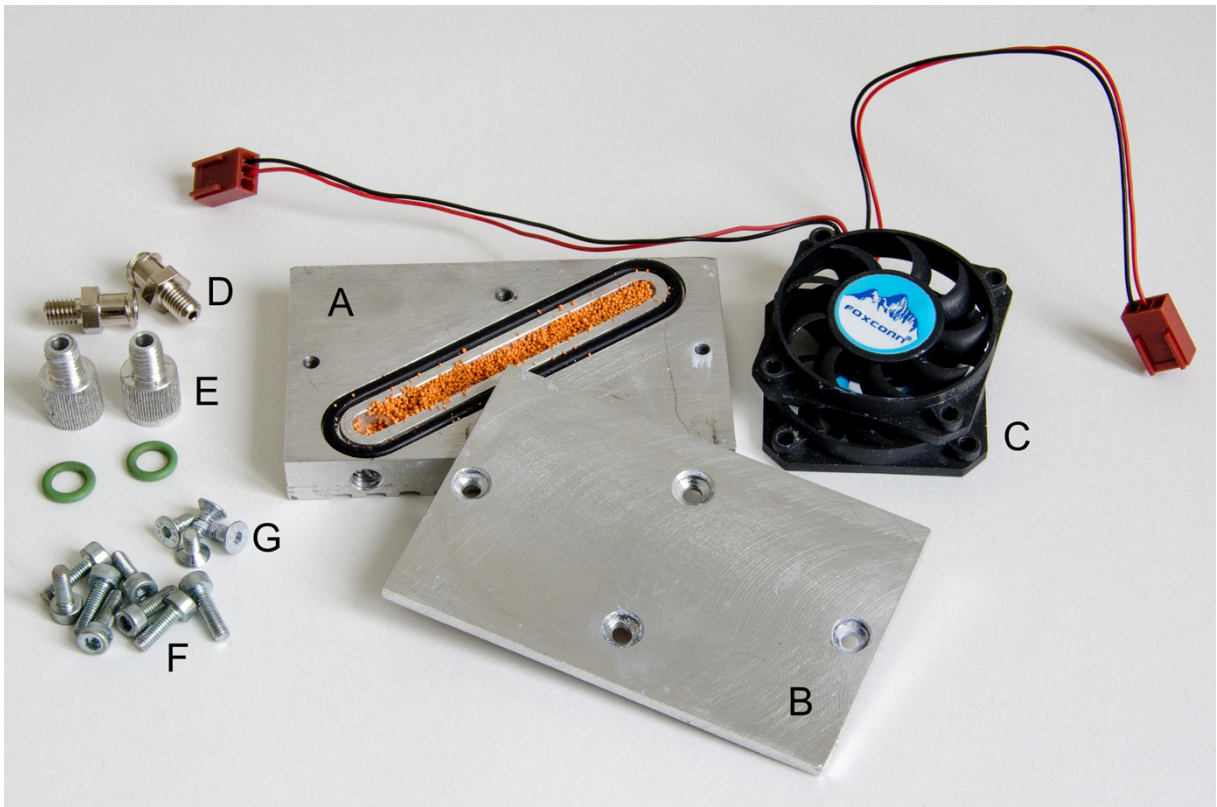


Figure 6: Disassembled iPRECON; (A) bottom substrate of iPRECON; (B) cover plate for iPRECON; (C) cooling fans; (D) M5 to Luer- Lock adapters; (E) custom-made M6 to M5 adapters; (F) screws for fan mounting; (G) screws to mount the cover onto the iPRECON substrate.

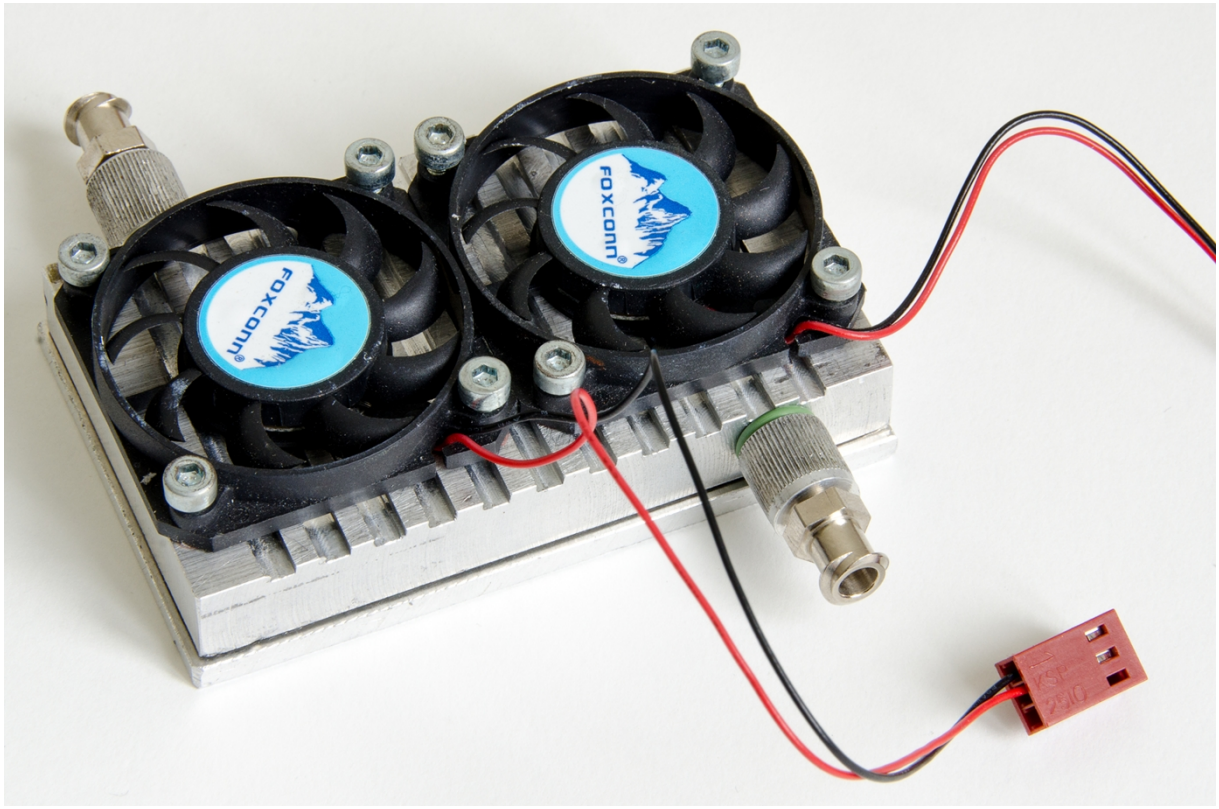


Figure 7: Mounted iPRECON device (75x50mm).