

Size Selective Real-Time Gravimetry of Small Airborne Particles

Licensing Opportunity

New principle

Robust integrated system of quartz crystal micro balances and cascade impactor for monitoring the amount of small particulate matter in gases, particularly in air.

Relevance

Increasing importance partly due to legal stipulations to protect human health in:

- industrial plants and laboratories
- air pollution surveys
- governmental and health care
- clean room facilities

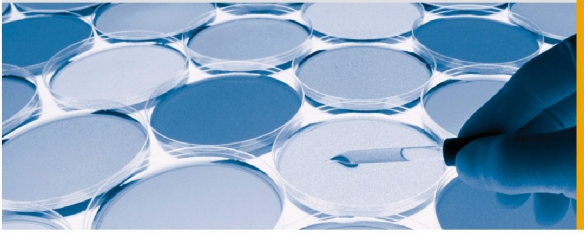
Current practice

Tapered element oscillating microbalances:

- using special filters for different classes of particular matter
- inconvenient routinely changing of filters
- operational costs (service, supplements)

Electrical low-pressure impactors:

- precharging of particular matter
- deducing masses from electrical charge
- no strict gravimetric measurement



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Development status

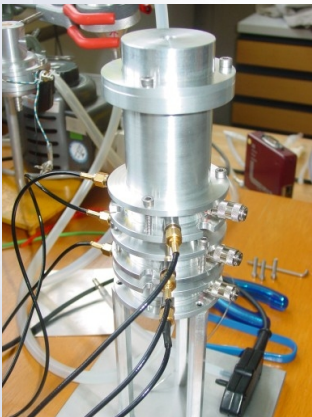
Prototype:

- In use in a scientific laboratory at the Georg-August-Universität Göttingen

Proof of concept:

- tested: mass sensitivity ($< 100\text{ng}$)
- tested: repeatability
- tested: size selectivity
- tested: handling
- tested: ease of maintenance

Advantages



Measurement principle:

- parallel size selective measurement
- real-time measurement
- particle sizes down to $0.06\mu\text{m}$ (PM 0.1)
- strictly gravimetric

Cost of ownership:

- no need for consumable supplies
- convenient and user-friendly operation
- potential for maintenance-free operation

**An European Patent has been granted.
We are looking for a licence partner.**