

**Applications:**

- Pollution control
- Homeland security: bio-detectors
- Homeland security: toxin detectors
- Particle separation
- Particle size sorting
- Filtration

**Benefits:**

- Much higher particulate concentrations
- Lower power consumption
- Lower system cost
- Lower operating costs
- Improved detection thresholds

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*An Aerosonic tube uses acoustic energy to concentrate particulates in an aerosol.*

**Summary:**

Maintaining air quality is essential for human safety and environmental protection. Numerous industrial processes require airborne particulate monitoring, concentration and filtration. Escalating fears of airborne toxic contaminants and biotoxins are driving the emergence of new monitoring and filtration requirements. The Aerosonic acoustic concentrator technology is a novel method of particle concentration that can be used in these critical areas. Aerosonic devices are low-power, inexpensive, and have no moving parts.

Employing a small piezoelectric tube to generate standing waves, the Aerosonic method uses sound pressure to locally concentrate many types of aerosols ranging from smog particulates to suspended microorganisms. Concentrated aerosols can be directly isolated for analysis. When added as a front-end concentrator to existing sensors, the Aerosonic concentrator can improve overall detector sensitivity by an order of magnitude or more. While consuming less than one-tenth the power of a typical HEPA filter, it can also function as a "filterless" filter with no moving parts.

The Aerosonic acoustic concentrator is an enabling technology for sensitive bio-detectors, airborne toxin monitors, environmental surveillance systems, and industrial process control components. We invite inquiries for Aerosonic licensing and collaboration.

**Development Stage:**

This technology has been reduced to practice; however, application-specific refinement may be necessary.

**Patent Status:**

US Patent 6,644,118      Cylindrical Acoustic Levitator/Concentrator Having Non-Circular Cross-Section

US Patent 6,467,350      Cylindrical Acoustic Levitator/Concentrator

**Licensing Status:**

This technology is available for non-exclusive licensing.