

Laser Ablation Mass Spectrometry of Individual Airborne Particles

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We are developing a method for real-time analysis of airborne microparticles based on laser ablation in an ion trap mass spectrometer. Experiments with aerosolized bacteria show that discrimination of bacteria from particles of nonbiological origin is probable on an individual particle basis. Measurements have also been made on collected samples from workplace environments that have possible bacterial contamination. The airborne particle analyzer is also effective for detecting aerosols of involatile organic substances including explosives as well as inorganics such as actinides. Results of these experiments and current efforts to increase the analytical performance and practical utility of the technique will be presented.

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