

# (SD2006-104) Aircraft Aerosol Time-of-Flight Mass Spectrometer

Tech ID: 20586 / UC Case 2006-104-0

## TECHNOLOGY DESCRIPTION

Researchers at UC San Diego have developed a smaller and higher resolution, single-particle, mass spectrometer based on a previously patented technique and instrument (ATOFMS). [See U.S. patents 5,681,752 and 5,998,215.]

The new instrument is fully automated, compact, faster, has a higher m/z range, higher sensitivity, and low power consumption. It analyzes data in real-time and uses a special robust software library, created with millions of particles, to apportion particles to specific sources "on-the-fly." The library, developed over a ten-year period, is extensive but is readily adaptable to new signatures.

The novel folded-Z design is much smaller than the existing transportable ATOFMS and detects 100 percent of ions up to m/z 2000. The instrument is operational and has undergone field testing.

## STATE OF DEVELOPMENT

This technology is available for licensing.

## PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,648,294	02/11/2014	2006-104
United States Of America	Issued Patent	8,626,449	01/07/2013	2006-104

## ADVANTAGES

Numerous potential applications exist, such as drug analysis, biowarfare detection of individual biological particles, cleanroom monitoring, on-line biological analysis (MALDI), environmental measurements of pollutants and toxic substances, atmospheric chemistry, and forensics.

## CONTACT

University of California, San Diego  
Office of Innovation and  
Commercialization  
[innovation@ucsd.edu](mailto:innovation@ucsd.edu)  
tel: 858.534.5815.



## OTHER INFORMATION

### KEYWORDS

ATOFMS, mass spectrometer

### CATEGORIZED AS

- ▶ **Sensors & Instrumentation**
- ▶ Other
- ▶ Physical Measurement

### RELATED CASES

2006-104-0

