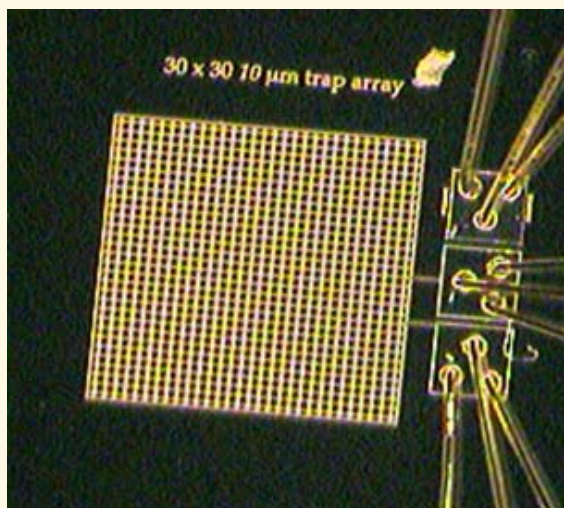


# Micro Ion Trap for Mass Spectrometers

**30 x 30 array of 10- $\mu$ m diameter ion traps fabricated by Dr. Stanley Pau, Univ. of Arizona**



## Summary

Resolution of mass spectrometers such as time-of-flight mass spectrometers or ion mobility spectrometers depends on how well the ions are spatially localized near the electrodes at an initial time.

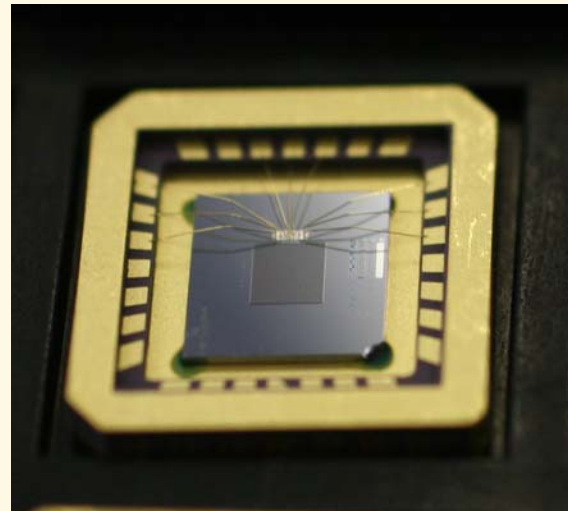
Scientists at ORNL have developed a two-dimensional array of micro ion traps for storing, cooling and releasing the sample ions. This trap configuration enables higher sensitivity and mass resolution compared to conventional single ion traps. The ions are more confined in the direction of flight but less confined in the perpendicular direction due to the multitude of traps in the array. The traps can be used with a large variety of ionization sources such as field emitting array, electron impact ionization or matrix-assisted laser desorption/ionization (MALDI).

## Advantages

- Storage capacity of trap is proportional to the radius of the trap
- Incorporates into existing commercial ion sources
- Can be integrated with hand held mass spectrometers
- Configuration of the trap enables simple production methods

## Patent

- Ion trap array-based systems and methods for chemical analysis, (UTB - ID 1209) [US Patent 6933498](#)



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