
ASMS 2014, Baltimore, MD
Ion Mobility workshop:
Applying Ion Mobility MS to Biological
problems

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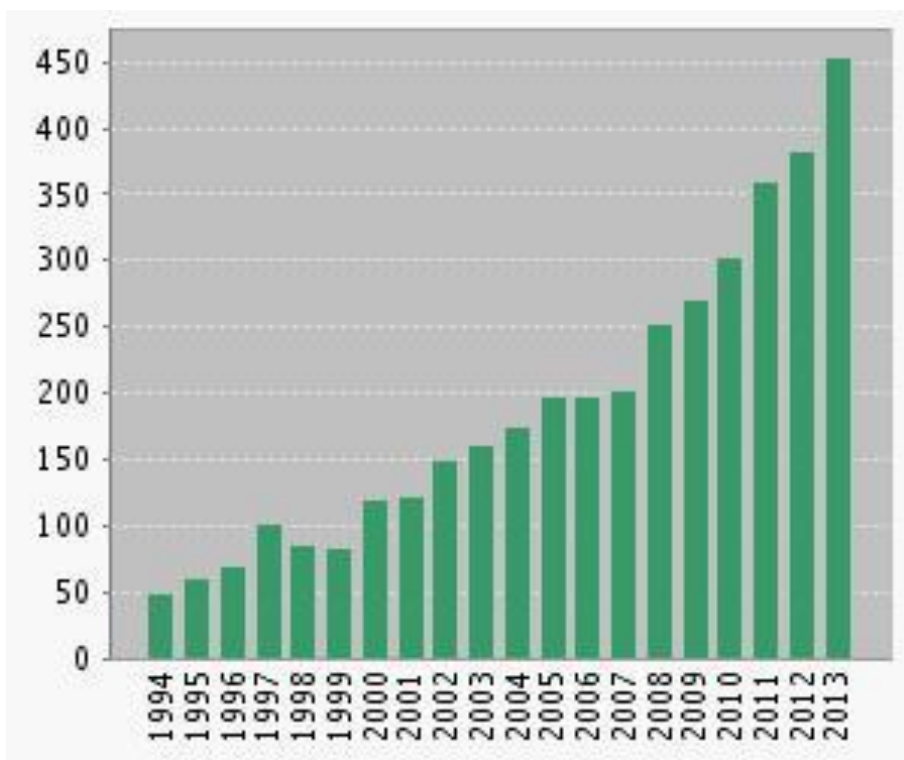
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Ion Mobility Spectrometry eBook: the next 5 years

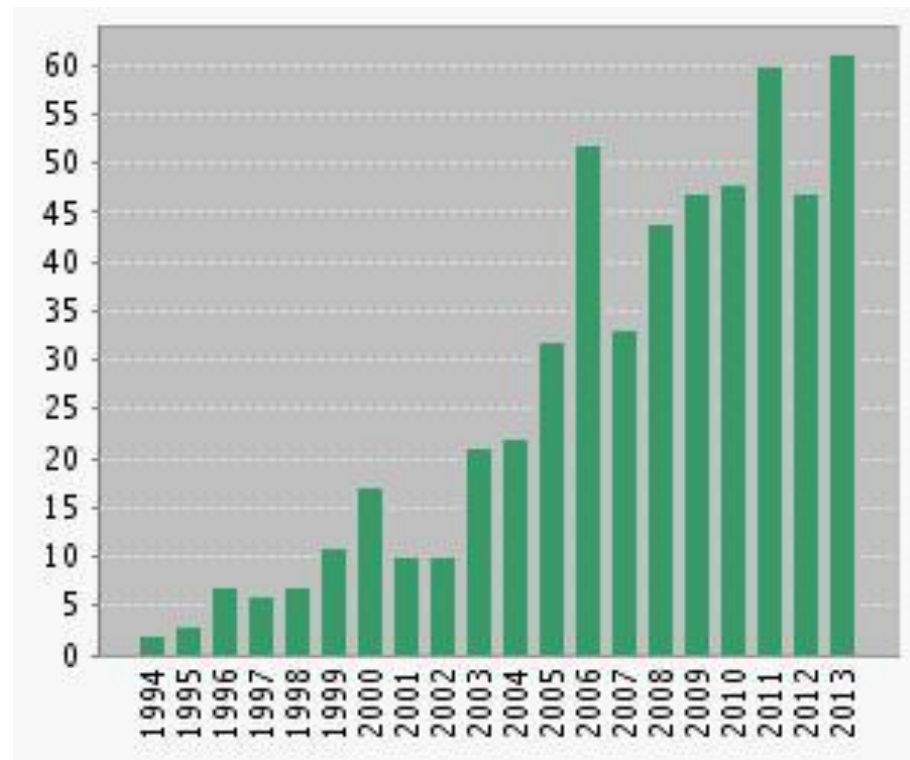


<http://www.owlstonenanotech.com/ultrafaims/imsms-news/ebook-next-5-years>

Background: ion mobility-mass spectrometry publications



- IMS or FAIMS or DMS + MS



- FAIMS or DMS + MS

Background: comparison of ion mobility-mass spectrometry techniques for small molecules

	DT-IMS	TWIMS	p-FAIMS	c-FAIMS
Separation of isomer and conformers	✓	✓	✓	✓
Charge state separation	✓✓	✓✓	✓✓	✓✓
Quantitative analysis/isobaric interferences	✓	✓✓	✓✓✓	✓✓✓
Structural analysis	✓✓✓	✓✓(✓)	✓	✓
'Omics applications	✓✓✓	✓✓✓	✓	✓

Ion mobility-mass spectrometry: the future for small molecule applications?

- Widespread use of ion mobility-mass spectrometry as a result of developments in commercial instrumentation.
 - Increasing use of FAIMS/DMS-MS configurations

Ion mobility-mass spectrometry: the future for small molecule applications?

Drift tube IM-MS

- Higher resolution ($R > 100$) drift tube IM-MS for structural studies/collision cross section measurements
 - Identification of metabolite isomers facilitated
- 'Omic' applications
 - Increased peak capacity/orthogonality
 - Volatile and semi-volatile metabolic profiling

Ion mobility-mass spectrometry: the future for small molecule applications?

FAIMS/DMS-MS

- Separation of isomers, epimers, oligomers and conformers
 - Better understanding of the relationship between DF/CF and m/z , CCS, functionality
- Enhanced high throughput quantitative analysis of biofluids
 - Improvements in signal:noise and linear dynamic range
 - Coupling with low resolution MS

Ion mobility-mass spectrometry: the future for small molecule applications?

FAIMS/DMS-MS

➤ 'Omic' applications

- Volatile and semi-volatile metabolic profiling
- Planar geometry FAMS/DMS

➤ Imaging