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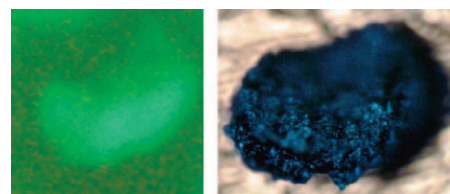
Regular articles

1–5

Measurement of trace uranium isotopes using a porous ion emitter

Matthew G. Watrous, James E. Delmore

- Trace U measurement is limited by signal-to-noise ratios, not abundance sensitivity. ► A sample generating nano amperes signal a triple sector instrument with a PIE will produce the best data.
- For a 1 μg sample, approximately 20 fg of each trace U isotope can be detected.

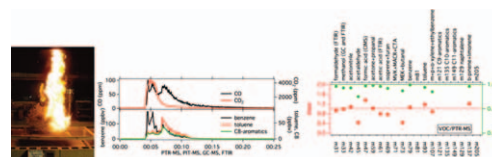


6–14

VOC identification and inter-comparison from laboratory biomass burning using PTR-MS and PIT-MS

C. Warneke, J.M. Roberts, P. Veres, J. Gilman, W.C. Kuster, I. Burling, R. Yokelson, J.A. de Gouw

- Biomass burning measurements with PTR-MS and PIT-MS. ► Identification of VOCs.
- Inter-comparison with other techniques. ► Emission ratios of VOCs from different fuels.

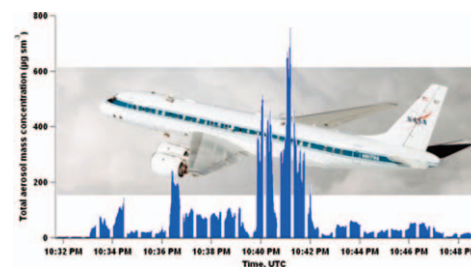


15–26

Real-time aerosol mass spectrometry with millisecond resolution

Joel R. Kimmel, Delphine K. Farmer, Michael J. Cubison, Donna Sueper, Christian Tanner, Eiko Nemitz, Douglas R. Worsnop, Marc Gonin, Jose L. Jimenez

- Characterization of TOFMS data acquisition system. ► Chemically resolved aerosol analysis at greater than 1000 Hz. ► Aircraft-based measurements with high temporal resolution. ► Observe dynamic changes in aerosol emissions from biomass burning. ► Demonstrate new eddy covariance flux methods.

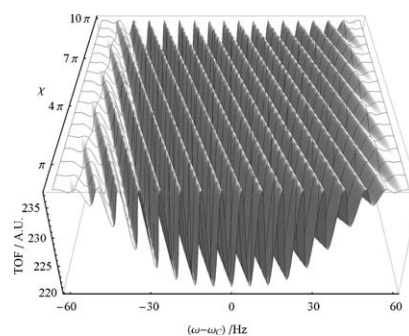


27–30

First investigation of phase-shifted Ramsey excitation in Penning trap mass spectrometry

M. Eibach, T. Beyer, K. Blaum, M. Block, K. Eberhardt, F. Herfurth, J. Ketelaer, Sz. Nagy, D. Neidherr, W. Nörtershäuser, C. Smorra

► A phase-shift between two Ramsey excitation pulses modifies the resonance profile. ► The analytically derived resonance for this excitation has been verified. ► The effect of an unknown phase-shift has been studied.

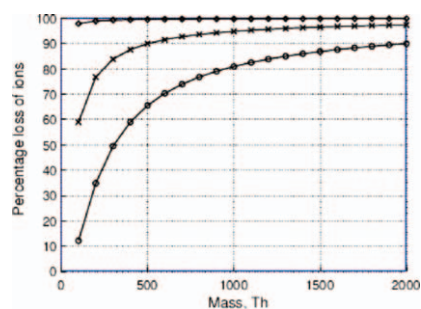


31–41

Escape of high mass ions due to initial thermal energy and its implications for axially symmetric RF ion trap mass analyzer design

E.K. Ganapathy Subramanyan, Atanu K. Mohanty

► Ion loss due to initial thermal energy increases with increase in mass. ► Smaller traps are more prone to ion loss. ► Escape occurs predominantly in the radial direction. ► Reduction in the loss of ions is favoured by lower ion temperatures.

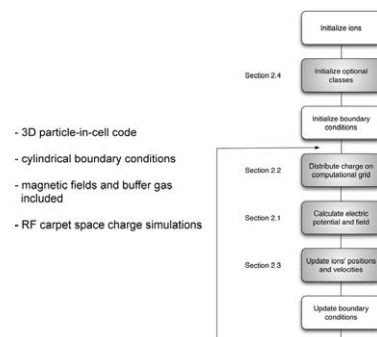


42–50

3DCylPIC—A 3D particle-in-cell code in cylindrical coordinates for space charge simulations of ion trap and ion transport devices

R. Ringle

► Space charge often has negative impacts on ion trap and ion transport devices. ► 3D particle-in-cell codes are ideal for studying the effects of space charge. ► Cylindrical boundary conditions can be more appropriate for simulating devices. ► A code was developed to study ion transport across an RF carpet with space charge.

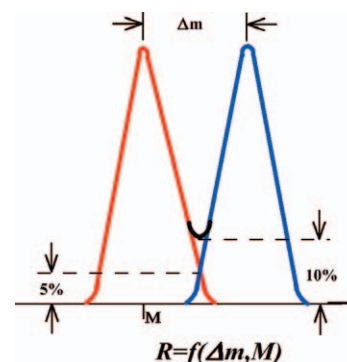


51–54

Correlation between the spectrum resolution and the peak location accuracy in the isotomeric cluster

Andrzej J. Gorączko

► Resolution in mass spectrometry. ► Accurate mass prediction.

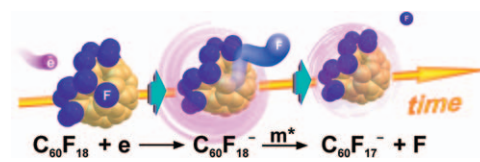


55–62

Metastable dissociative decay of fluorofullerene negative ions

Rustem V. Khatymov, Pavel V. Shchukin, Renat F. Tuktarov,
Mars V. Muftakhov, Vitaliy Yu. Markov, Ilya V. Goldt

► Interaction of slow free electrons with fluorofullerene molecules leads to long-lived molecular anions. ► Fluorofullerene anions undergo delayed (metastable) fragmentation via detachment of F atoms. ► RRKM theory explains experimental observation of temperature dependence and kinetic shift.

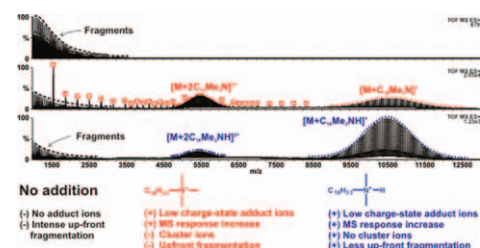


63–68

Electrospray ionization mass spectrometry of the non-covalent complexes of ammonium ions with high molar mass polyethers

Andreas Nasioudis, Jan W. van Velde, Ron M.A. Heeren,
Oscar F. van den Brink

► ESI-MS analysis of high molar mass polyethers facilitated by ammonium ions. ► Tertiary amines perform better than quaternary ammonium salts and primary amines. ► No cluster ion formation with primary and tertiary amines. ► Less up-front fragmentation with tertiary amines. ► PLA-*block*-PEG-*block*-PLA analyzed with quaternary and tertiary ammonium ions.



69–72

Electron impact ionization cross-sections of carbonyl sulfide molecule

Rajeev Kumar

► Electron-impact ionization plays an important role in many areas of chemistry and physics, including mass spectrometry, plasma processes and gas discharges. Accurate ionization cross sections are important for understanding the mechanism of the ionization process, and are also required for modeling applications, ranging from studies of fusion plasmas to investigations into radiation effects in materials science and medicine. ► In this work we have calculated partial single differential cross-sections, partial integral ionization cross-sections and their total with rate coefficients for partial ionization cross-sections by M-B equation. ► Our results shows good agreement with available data for total ionization cross-sections where as no results are available for the single differential cross-sections and partial ionization cross-sections. ► We have employed modified Jain-Khere semi empirical formula which requires oscillator strength data as input.

