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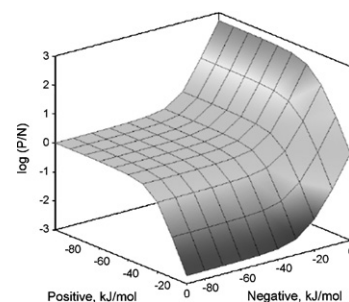
Regular articles

105–113

A bipolar rate equation model of MALDI primary and secondary ionization processes, with application to positive/negative analyte ion ratios and suppression effects

Richard Knochenmuss

The rate equation model for MALDI ion formation and reaction [R. Knochenmuss, J. Mass Spectrom. 37 (2002) 867; R. Knochenmuss, Anal. Chem. 75 (2003) 2199], including both chemical and physical dynamic aspects of MALDI, is extended here to explicitly include both positive and negative ions of matrix and analyte.

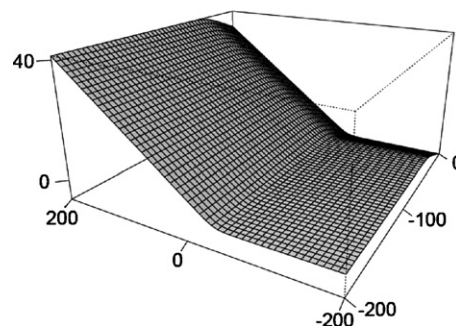


114–119

Positive and negative analyte ion yield in matrix-assisted laser desorption/ionization revisited

F. Hillenkamp, E. Wäfler, M.C. Jecklin, R. Zenobi

Model predictions for MALDI-MS are presented for a wide range of the gas-phase basicity of analytes and matrix and for analyte to matrix ratios.

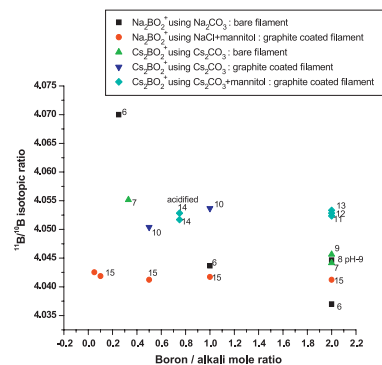


120–125

A robust methodology for high precision isotopic analysis of boron by thermal ionization mass spectrometry using Na_2BO_2^+ ion

Radhika M. Rao, Ankush R. Parab, K. Sasibhushan, Suresh K. Aggarwal

A detailed study to develop a robust methodology for determining $^{11}\text{B}/^{10}\text{B}$ isotope ratio using sodium metaborate (Na_2BO_2^+) in positive thermal ionisation mass spectrometry (P-TIMS) was performed.

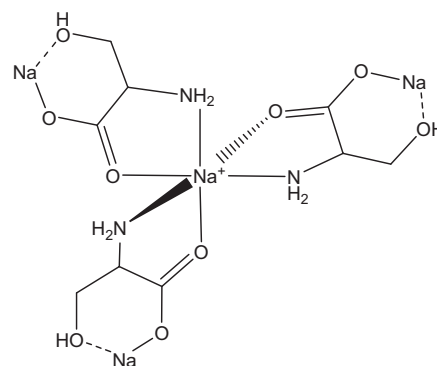


126–130

Formation of $[nM-nH+(n+1)Na]^+$ cluster ions from amino acid by electrospray ionization

Sung-Seen Choi, Min Ju Song

Asparagine, glutamine, serine, and threonine generated the $[nM-nH+(n+1)Na]^+$ cluster ions and showed a magic number at $n = 3$ of six-coordinated sodium complex structures, $(M-H+Na)_3Na^+$.

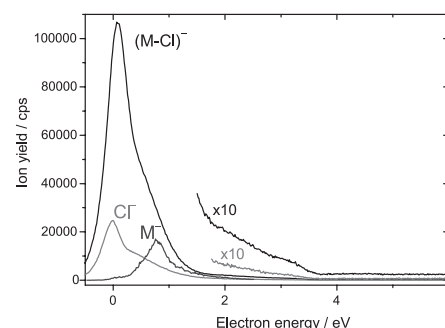


131–136

Unusual features in electron attachment to chlorodifluoroacetic acid ($CClF_2COOH$): Strong dissociative electron attachment near 0 eV and associative attachment at 0.75 eV

Janina Kopyra, Constanze König-Lehmann, Iwona Szamrej, Eugen Illenberger

Electron attachment to $CClF_2COOH$ exhibits unusual features as the non-decomposed parent anion $CClF_2COOH^-$ is observed at a resonance located at 0.75 eV while strong dissociative electron attachment reactions already occur at about 0 eV.

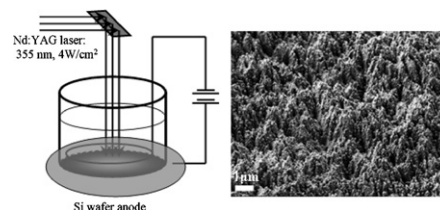


137–142

Nanostructured porous silicon by laser assisted electrochemical etching

J. Li, C. Lu, X.K. Hu, Xiujuan Yang, A.V. Loboda, R.H. Lipson

Nanostructured porous silicon (pSi) was fabricated by combining electrochemical etching with 355 nm laser processing. pSi prepared in this way proves to be an excellent substrate for desorption/ionization on silicon (DIOS) mass spectrometry (MS).

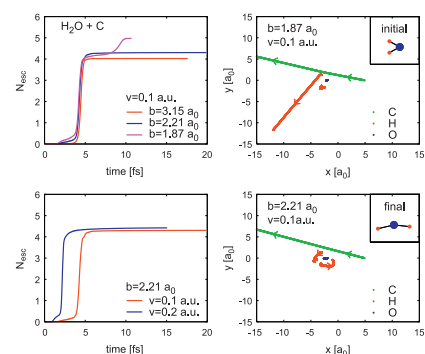


143–148

Microscopic studies of atom–water collisions

Z.P. Wang, P.M. Dinh, P.-G. Reinhard, E. Suraud, G. Bruny, C. Montano, S. Feil, S. Eden, H. Abdoul-Carime, B. Farizon, M. Farizon, S. Ouaskit, T.D. Märk

The influences of water molecules surrounding biological molecules during irradiation with heavy particles (atoms, ions) are currently a major subject in radiation science on a molecular level. In order to elucidate the underlying complex reaction mechanisms we have initiated a joint experimental and theoretical investigation with the aim to make direct comparisons between experimental and theoretical results.

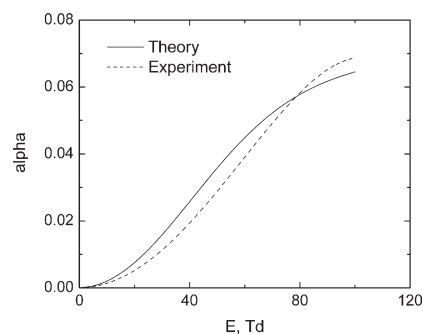


149–156

Electric field dependence of the ion mobility

E.V. Krylov, E.G. Nazarov

Several models were proposed to rationalize ion field mobility dependence. Clustering with dopant and drift gas molecules is the most relevant hypothesis explaining field mobility dependence (alpha function).

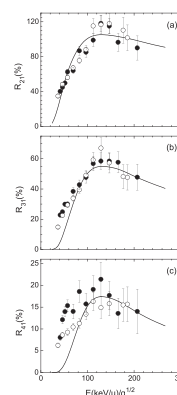


157–161

One-electron capture with simultaneous ionization in C^{q+} , O^{q+} ($q = 1-4$)-Ar collisions

Baowei Ding, Ximeng Chen, Deyang Yu, Bitao Hu, Xiaohong Cai, Zhaoyuan Liu

The ratios R_{k1} of k -fold to single ionization of the target atom with simultaneous one-electron capture by the projectile have been measured for 15–480 keV/u ($v_p = 0.8-4.4$ a.u.) collisions of C^{q+} , O^{q+} ($q = 1-4$) with Ar, using time-of-flight techniques which allowed the simultaneous identification of the final charge state of both the low-velocity recoil ion and the high-velocity projectile for each collision event.



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