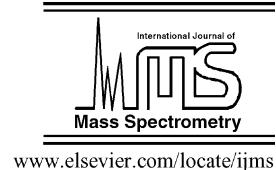




ELSEVIER

International Journal of Mass Spectrometry 219 (2002) 741–748



## Subject index Volume 219

### Ab initio

1,3-H-shift pathways in  $C_2H_4O^{+}$  and  $C_2H_4O$ , 295

### Ab initio calculation

A catalyzed rearrangement of gaseous 1,1-dichloroethene radical cations, 409

Experimental and theoretical studies on the gas phase reactivity of formamide– $Ni^{+}$  complexes generated by FAB and electrospray ionization, 429

Ab initio and MS/MS studies on protonated peptides containing basic and acidic amino acid residues. I. Solvated proton vs. salt-bridged structures and the cleavage of the terminal amide bond of protonated  $RD-NH_2$ , 203

Interaction of MALDI matrix molecules with  $Na^{+}$  in the gas phase, 577

Structures, thermochemistry, and infrared spectra of chloride ion–fluorinated acetone complexes and neutral fluorinated acetones in the gas phase: experiment and theory, 593

### Ablation process

Irradiation effects in MALDI and surface modifications. Part I: Sinapinic acid monocrystals, 515

### N-Acetylated amino acids

Proton affinities of methyl esters of *N*-acetylated amino acids, 101

### Adenine

Hydration of DNA base cations in the gas phase, 11

Fragmentation of laser-desorbed 9-substituted adenines, 133

### Alkene radical cation

A catalyzed rearrangement of gaseous 1,1-dichloroethene radical cations, 409

### Alkyl trifluoroacetoacetate

Unimolecular gas-phase reactions of methyl and ethyl trifluoroacetoacetates upon electron ionization, 475

### Alkylbenzenium ions

Loss of methane and ethene from long-lived gaseous xylenium ions (protonated xylene) after “composite” scrambling, 497

### Amino acid residue

Mass spectrometric noncovalent probing of amino acids in peptides and proteins, 269

### ApoA-I

MALDI- and ESI-MS of the HDL apolipoproteins; new isoforms of apoA-I, II, 671

### ApoA-II

MALDI- and ESI-MS of the HDL apolipoproteins; new isoforms of apoA-I, II, 671

### Arginine

The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233

### Asp-Xxx cleavage

The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233

### Azirinyl cations

Ion–molecule reactions between ionized nitrile oxides and neutral nitrile, 643

### Azurine

Protein charge transport in gas phase, 73

### Benzene derivatives

Gas-phase lithium-cation basicities of some benzene derivatives.

An experimental and theoretical study, 445

### Bifunctional

Protein charge transport in gas phase, 73

### Bradykinin

Effects of peptide chain length on the gas-phase proton transfer properties of doubly-protonated ions from bradykinin and its N-terminal fragment peptides, 115

### Brass

Collection and separation of particles by size from laser ablated material, 373

### Calculations

Silicon vs. carbon containing ions: 1,3-proton transfers within the  $(CH_3)(X)Si(OR)(^+OHR')$  units, 537

### Carbene ions

Electrophilic and radical reactivity of ionized aminohydroxycarbene toward alkenes, 625

### Cascade impactor

Collection and separation of particles by size from laser ablated material, 373

### Catalysis

A catalyzed rearrangement of gaseous 1,1-dichloroethene radical cations, 409

### Chito-oligomers

The pivotal role of tandem mass spectrometry in structural determinations of Nod factors produced by Rhizobia. Nod factors produced by wild-type strains of *Mesorhizobium huakii* and *Rhizobium* sp. *mus10*, 703

### $C_2H_4O$

1,3-H-shift pathways in  $C_2H_4O^{+}$  and  $C_2H_4O$ , 295

## Chromium

The resonance laser ablation Fourier-transform ion cyclotron resonance mass spectrometry (RLA-FTICRMS) a new coupling for material science, 717

## CID

Effects of peptide chain length on the gas-phase proton transfer properties of doubly-protonated ions from bradykinin and its N-terminal fragment peptides, 115

## Cleavage of amide bond

Ab initio and MS/MS studies on protonated peptides containing basic and acidic amino acid residues. I. Solvated proton vs. salt-bridged structures and the cleavage of the terminal amide bond of protonated RD-NH<sub>2</sub>, 203

## Cluster ion

Hydration of DNA base cations in the gas phase, 11  
Stereochemical effects from doubly-charged iron clusters for the structural elucidation of diastereomeric monosaccharides using ESI/IT-MS, 559

## CO

Cross-sections for CO<sup>+</sup> and CO<sup>2+</sup> production by electron impact on CO molecule, 351

## Collision cross sections

Collision cross sections of gas phase DNA ions, 161

## Collisional activation

Charge state dependent fragmentation of gaseous protein ions in a quadrupole ion trap: bovine ferri-, ferro-, and apo-cytochrome *c*, 171

Collision efficiency in an electrospray source interfaced with a magnetic mass spectrometer, 403

Ion–molecule reactions between ionized nitrile oxides and neutral nitrile, 643

## Collisionally activated decomposition

Cyclization and rearrangement of monofluoroallylic cations from halonium metathesis in the gas phase, 525

## Collision-induced dissociation

The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233

Collision-induced dissociations of trimethylsilylated lysergic acid diethylamide (LSD) in ion trap multiple stage mass spectrometry, 615

## Computational Si chemistry

Photodetachment of FSi(OMe)<sub>4</sub><sup>−</sup> and FGe(OMe)<sub>4</sub><sup>−</sup> anions: an experimental and theoretical study of gas-phase hypervalent Si and Ge species, 485

## Condensation reaction

Electrophilic and radical reactivity of ionized aminohydroxy-carbene toward alkenes, 625

## Copper

Dissociation behavior of Cu(urea)<sup>+</sup> complexes generated by electrospray ionization, 729

## Coulomb explosion

Field ionization and Coulomb explosion of methanol in an intense field of a femtosecond laser beam, 305

## Cycloaddition reaction

Ion–molecule reactions between ionized nitrile oxides and neutral nitrile, 643

## Cyclodextrin

Enantioselective gas-phase ion–molecule reactions in a quadrupole ion trap, 79

## Cyclosporin A

Gas phase hydration of electrospray ions from small peptides, 1

Cytochrome *c* ions

Charge state dependent fragmentation of gaseous protein ions in a quadrupole ion trap: bovine ferri-, ferro-, and apo-cytochrome *c*, 171

## Density functional theory calculations

Gas-phase lithium-cation basicities of some benzene derivatives.

An experimental and theoretical study, 445

## Desolvation

Origin and number of charges observed on multiply-protonated native proteins produced by ESI, 39

## Destruction cross sections

Tandem mass spectrometry of specific vs. nonspecific noncovalent complexes of vancomycin antibiotics and peptide ligands, 659

## DFT

Experimental and theoretical studies on the gas phase reactivity of formamide–Ni<sup>+</sup> complexes generated by FAB and electrospray ionization, 429

## Dianion

Recent gold cluster studies in a Penning trap, 363

## Dissociation energy

Recent gold cluster studies in a Penning trap, 363

## DNA base

Hydration of DNA base cations in the gas phase, 11

Fragmentation of laser-desorbed 9-substituted adenines, 133

## DNA ions

Collision cross sections of gas phase DNA ions, 161

## Double helix conformation

Collision-induced dissociation of 16-mer DNA duplexes with various sequences: evidence for conservation of the double helix conformation in the gas phase, 151

## Double ionization

Cross-sections for CO<sup>+</sup> and CO<sup>2+</sup> production by electron impact on CO molecule, 351

## Duplex DNA

Collision-induced dissociation of 16-mer DNA duplexes with various sequences: evidence for conservation of the double helix conformation in the gas phase, 151

## Electron impact

Cross-sections for CO<sup>+</sup> and CO<sup>2+</sup> production by electron impact on CO molecule, 351

## Electronic excited states

Towards the characterization of the mechanism of the sequential activation of four methane molecules by Ta<sup>+</sup>, 457

## Electrospray

Charge state dependent fragmentation of gaseous protein ions in a quadrupole ion trap: bovine ferri-, ferro-, and apo-cytochrome *c*, 171

Collision efficiency in an electrospray source interfaced with a magnetic mass spectrometer, 403

- Experimental and theoretical studies on the gas phase reactivity of formamide–Ni<sup>+</sup> complexes generated by FAB and electrospray ionization, 429
- Stereochemical effects from doubly-charged iron clusters for the structural elucidation of diastereomeric monosaccharides using ESI/IT-MS, 559
- The pivotal role of tandem mass spectrometry in structural determinations of Nod factors produced by Rhizobia. Nod factors produced by wild-type strains of *Mesorhizobium huakii* and *Rhizobium* sp. *mus10*, 703
- Electrospray ion hydration
- Gas phase hydration of electrospray ions from small peptides, 1
- Electrospray ionization
- Charge location on gas phase peptides, 23
- Supercharging in electrospray ionization: effects on signal and charge, 63
- Tailoring the gas-phase dissociation and determining the relative energy of activation for dissociation of 7-deaza purine modified oligonucleotides containing a repeating motif, 139
- Tandem mass spectrometry of specific vs. nonspecific noncovalent complexes of vancomycin antibiotics and peptide ligands, 659
- Dissociation behavior of Cu(urea)<sup>+</sup> complexes generated by electrospray ionization, 729
- Electrospray ionization mass spectrometry
- Electrospray ionization mass spectrometry analysis revealed a ~310 kDa noncovalent hexamer of HPr kinase/phosphatase from *Bacillus subtilis*, 681
- Electrospray ions
- Gas phase hydration of electrospray ions from small peptides, 1
- Enantioselectivity
- Enantioselective gas-phase ion–molecule reactions in a quadrupole ion trap, 79
- Endotoxin
- Structural analysis of *Yersinia pseudotuberculosis* ATCC 29833 lipid A, 549
- Enzymatic digestion
- Analysis of protein mixtures by matrix-assisted laser desorption ionization-ion mobility-orthogonal-time-of-flight mass spectrometry, 253
- ESI
- Origin and number of charges observed on multiply-protonated native proteins produced by ESI, 39
- MALDI- and ESI-MS of the HDL apolipoproteins; new isoforms of apoA-I, II, 671
- ETV ICP-MS
- Collection and separation of particles by size from laser ablated material, 373
- FAB
- Experimental and theoretical studies on the gas phase reactivity of formamide–Ni<sup>+</sup> complexes generated by FAB and electrospray ionization, 429
- Fast atom bombardment
- The pivotal role of tandem mass spectrometry in structural determinations of Nod factors produced by Rhizobia. Nod factors produced by wild-type strains of *Mesorhizobium huakii* and *Rhizobium* sp. *mus10*, 703
- Femtosecond laser
- Field ionization and Coulomb explosion of methanol in an intense field of a femtosecond laser beam, 305
- Field ionization
- Field ionization and Coulomb explosion of methanol in an intense field of a femtosecond laser beam, 305
- Fluoride affinity
- Photodetachment of FSi(OMe)<sub>4</sub><sup>−</sup> and FGe(OMe)<sub>4</sub><sup>−</sup> anions: an experimental and theoretical study of gas-phase hypervalent Si and Ge species, 485
- Formamide
- Experimental and theoretical studies on the gas phase reactivity of formamide–Ni<sup>+</sup> complexes generated by FAB and electrospray ionization, 429
- Fragment ions
- Can relative cleavage frequencies in peptides provide additional sequence information?, 283
- Fragmentation
- Fragmentation of laser-desorbed 9-substituted adenines, 133
- Fragmentation energetics
- Fragmentation energetics of small peptides from multiple-collision activation and surface-induced dissociation in FT-ICR MS, 189
- Fragmentation pattern
- The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233
- FT-ICR
- Effects of peptide chain length on the gas-phase proton transfer properties of doubly-protonated ions from bradykinin and its N-terminal fragment peptides, 115
- Gas-phase lithium-cation basicities of some benzene derivatives. An experimental and theoretical study, 445
- Silicon vs. carbon containing ions: 1,3-proton transfers within the (CH<sub>3</sub>)(X)Si(OR)<sup>+</sup>OHR' units, 537
- FT-ICR spectrometry
- A catalyzed rearrangement of gaseous 1,1-dichloroethene radical cations, 409
- G2 calculations
- Electrophilic and radical reactivity of ionized aminohydroxy-carbene toward alkenes, 625
- Gas phase
- Collision cross sections of gas phase DNA ions, 161
- Experimental and theoretical studies on the gas phase reactivity of formamide–Ni<sup>+</sup> complexes generated by FAB and electrospray ionization, 429
- Interaction of MALDI matrix molecules with Na<sup>+</sup> in the gas phase, 577
- Gas phase reaction
- Multiple substitution of protons by sodium ions in sodiated oligoglycines, 89
- Towards the characterization of the mechanism of the sequential activation of four methane molecules by Ta<sup>+</sup>, 457
- Gas target
- XY-TOF technique for large ion source mass spectrometers, 343

## Gas-phase dissociation

Tailoring the gas-phase dissociation and determining the relative energy of activation for dissociation of 7-deaza purine modified oligonucleotides containing a repeating motif, 139

## Genetic analysis

Tailoring the gas-phase dissociation and determining the relative energy of activation for dissociation of 7-deaza purine modified oligonucleotides containing a repeating motif, 139

## Glu-Xxx cleavage

The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233

## Gramicidin S

Gas phase hydration of electrospray ions from small peptides, 1

## Heterocyclic chemistry

Utilization of charge and mass labeling for the structural identification of heterocyclic quaternary salts by mass spectrometry, 391

## High pressure mass spectrometry

Structures, thermochemistry, and infrared spectra of chloride ion-fluorinated acetone complexes and neutral fluorinated acetones in the gas phase: experiment and theory, 593

## High-energy collision-induced dissociation

Tandem mass spectrometry of specific vs. nonspecific noncovalent complexes of vancomycin antibiotics and peptide ligands, 659

## Hill equation

Some properties of charged particle trajectories in quadrupole mass spectrometers. Part I. General theory, 315

Some properties of charged particle trajectories in quadrupole mass spectrometers. Part II. The results of trajectory analysis, 325

## Histidine

The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233

## HPLC

Comparison of three directly coupled HPLC MS/MS strategies for identification of proteins from complex mixtures: single-dimension LC-MS/MS, 2-phase MudPIT, and 3-phase MudPIT, 245

## HPr kinase/phosphatase

Electrospray ionization mass spectrometry analysis revealed a ~310 kDa noncovalent hexamer of HPr kinase/phosphatase from *Bacillus subtilis*, 681

## 1,3-H-shifts

1,3-H-shift pathways in  $C_2H_4O^{•+}$  and  $C_2H_4O$ , 295

## Hydration

Hydration of DNA base cations in the gas phase, 11

## Hydration shell

Hydration of DNA base cations in the gas phase, 11

## Hydrogen atom and proton transfers

Electrophilic and radical reactivity of ionized aminohydroxycarbene toward alkenes, 625

## Hypervalent anions of Si and Ge

Photodetachment of  $FSi(OMe)_4^-$  and  $FGe(OMe)_4^-$  anions: an experimental and theoretical study of gas-phase hypervalent Si and Ge species, 485

## Ion cyclotron resonance

Recent gold cluster studies in a Penning trap, 363

## Ion mobility spectrometry

Charge location on gas phase peptides, 23

## Ion trap

Enantioselective gas-phase ion–molecule reactions in a quadrupole ion trap, 79

Some properties of charged particle trajectories in quadrupole mass spectrometers. Part I. General theory, 315

Some properties of charged particle trajectories in quadrupole mass spectrometers. Part II. The results of trajectory analysis, 325

## Ion trap mass spectrometry

Some properties of charged particle trajectories in quadrupole mass spectrometers. Part I. General theory, 315

Some properties of charged particle trajectories in quadrupole mass spectrometers. Part II. The results of trajectory analysis, 325

Stereochemical effects from doubly-charged iron clusters for the structural elucidation of diastereomeric monosaccharides using ESI/IT-MS, 559

Collision-induced dissociations of trimethylsilylated lysergic acid diethylamide (LSD) in ion trap multiple stage mass spectrometry, 615

## Ion/ion reactions

Charge state dependent fragmentation of gaseous protein ions in a quadrupole ion trap: bovine ferri-, ferro-, and apo-cytochrome c, 171

## Ion/molecule reaction

A catalyzed rearrangement of gaseous 1,1-dichloroethene radical cations, 409

## Ionization

The resonance laser ablation Fourier-transform ion cyclotron resonance mass spectrometry (RLA-FTICRMS) a new coupling for material science, 717

## Ionization processes

Irradiation effects in MALDI and surface modifications. Part I: Sinapinic acid monocrystals, 515

## Ion-molecule reactions

Cyclization and rearrangement of monofluoroallylic cations from halonium metathesis in the gas phase, 525

Silicon vs. carbon containing ions: 1,3-proton transfers within the  $(CH_3)(X)Si(OR)(^+OHR')$  units, 537

Ion-molecule reactions between ionized nitrile oxides and neutral nitrile, 643

## IR spectra of chloride ion–fluorinated acetone complexes

Structures, thermochemistry, and infrared spectra of chloride ion–fluorinated acetone complexes and neutral fluorinated acetones in the gas phase: experiment and theory, 593

## Iron(II)

Stereochemical effects from doubly-charged iron clusters for the structural elucidation of diastereomeric monosaccharides using ESI/IT-MS, 559

## Irradiation effects

Irradiation effects in MALDI and surface modifications. Part I: Sinapinic acid monocrystals, 515

## Isobaric ions

Unimolecular gas-phase reactions of methyl and ethyl trifluoroacetocetates upon electron ionization, 475

- Isomerization  
A catalyzed rearrangement of gaseous 1,1-dichloroethene radical cations, 409
- Cyclization and rearrangement of monofluoroallylic cations from halonium metathesis in the gas phase, 525
- Jet-cooling  
Fragmentation of laser-desorbed 9-substituted adenines, 133
- Kinetic method  
Dissociation behavior of Cu(urea)<sup>+</sup> complexes generated by electrospray ionization, 729
- Laser ablation  
Collection and separation of particles by size from laser ablated material, 373
- Laser desorption  
Fragmentation of laser-desorbed 9-substituted adenines, 133
- Li<sup>+</sup> basicities  
Gas-phase lithium-cation basicities of some benzene derivatives. An experimental and theoretical study, 445
- Lipid A  
Structural analysis of *Yersinia pseudotuberculosis* ATCC 29833 lipid A, 549
- Lipo-oligosaccharides  
The pivotal role of tandem mass spectrometry in structural determinations of Nod factors produced by Rhizobia. Nod factors produced by wild-type strains of *Mesorhizobium huakii* and *Rhizobium* sp. *mus10*, 703
- LSD  
Collision-induced dissociations of trimethylsilylated lysergic acid diethylamide (LSD) in ion trap multiple stage mass spectrometry, 615
- Lysine  
The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233
- MALDI  
Mass spectrometric noncovalent probing of amino acids in peptides and proteins, 269
- Irradiation effects in MALDI and surface modifications. Part I: Sinapinic acid monocrystals, 515
- Structural analysis of *Yersinia pseudotuberculosis* ATCC 29833 lipid A, 549
- MALDI- and ESI-MS of the HDL apolipoproteins; new isoforms of apoA-I, II, 671
- Iodine-assisted matrix-assisted laser desorption/ionisation, 697
- MALDI ion suppression  
Analysis of protein mixtures by matrix-assisted laser desorption ionization-ion mobility-orthogonal-time-of-flight mass spectrometry, 253
- MALDI matrix  
Interaction of MALDI matrix molecules with Na<sup>+</sup> in the gas phase, 577
- Mass spectrometry  
Charge location on gas phase peptides, 23
- Supercharging in electrospray ionization: effects on signal and charge, 63
- Some properties of charged particle trajectories in quadrupole mass spectrometers. Part I. General theory, 315
- Some properties of charged particle trajectories in quadrupole mass spectrometers. Part II. The results of trajectory analysis, 325
- XY-TOF technique for large ion source mass spectrometers, 343
- Utilization of charge and mass labeling for the structural identification of heterocyclic quaternary salts by mass spectrometry, 391
- Towards the characterization of the mechanism of the sequential activation of four methane molecules by Ta<sup>+</sup>, 457
- The resonance laser ablation Fourier-transform ion cyclotron resonance mass spectrometry (RLA-FTICRMS) a new coupling for material science, 717
- Dissociation behavior of Cu(urea)<sup>+</sup> complexes generated by electrospray ionization, 729
- Mass spectrum  
Field ionization and Coulomb explosion of methanol in an intense field of a femtosecond laser beam, 305
- Mass-mobility correlations  
Analysis of protein mixtures by matrix-assisted laser desorption ionization-ion mobility-orthogonal-time-of-flight mass spectrometry, 253
- Matrix  
Iodine-assisted matrix-assisted laser desorption/ionisation, 697
- Mechanisms  
Irradiation effects in MALDI and surface modifications. Part I: Sinapinic acid monocrystals, 515
- Metal cluster  
Recent gold cluster studies in a Penning trap, 363
- Metastable ion  
Hydration of DNA base cations in the gas phase, 11
- Loss of methane and ethene from long-lived gaseous xylenium ions (protonated xylene) after "composite" scrambling, 497
- Methane activation  
Towards the characterization of the mechanism of the sequential activation of four methane molecules by Ta<sup>+</sup>, 457
- Methanol  
Field ionization and Coulomb explosion of methanol in an intense field of a femtosecond laser beam, 305
- Methyl esters  
Proton affinities of methyl esters of *N*-acetylated amino acids, 101
- MIKE spectrometry  
Unimolecular gas-phase reactions of methyl and ethyl trifluoroacetooacetates upon electron ionization, 475
- Monosaccharides  
Stereocchemical effects from doubly-charged iron clusters for the structural elucidation of diastereomeric monosaccharides using ESI/IT-MS, 559
- MS/MS  
Comparison of three directly coupled HPLC MS/MS strategies for identification of proteins from complex mixtures: single-dimension LC-MS/MS, 2-phase MudPIT, and 3-phase MudPIT, 245

## MS/MS spectral database

The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233

## MudPIT

Comparison of three directly coupled HPLC MS/MS strategies for identification of proteins from complex mixtures: single-dimension LC-MS/MS, 2-phase MudPIT, and 3-phase MudPIT, 245

## Multiple-collision activation

Fragmentation energetics of small peptides from multiple-collision activation and surface-induced dissociation in FT-ICR MS, 189

## Multiply charged ions

Collision-induced dissociation of 16-mer DNA duplexes with various sequences: evidence for conservation of the double helix conformation in the gas phase, 151

## Myoglobin

Protein charge transport in gas phase, 73

## Native proteins

Origin and number of charges observed on multiply-protonated native proteins produced by ESI, 39

## m-NBA

Supercharging in electrospray ionization: effects on signal and charge, 63

## New isoforms

MALDI- and ESI-MS of the HDL apolipoproteins; new isoforms of apoA-I, II, 671

## Nickle(I) complexes

Experimental and theoretical studies on the gas phase reactivity of formamide-Ni<sup>+</sup> complexes generated by FAB and electrospray ionization, 429

## Nitrosoazirine

Ion-molecule reactions between ionized nitrile oxides and neutral nitrile, 643

## Nod factors

The pivotal role of tandem mass spectrometry in structural determinations of Nod factors produced by Rhizobia. Nod factors produced by wild-type strains of *Mesorhizobium huakii* and *Rhizobium* sp. *mus10*, 703

## Noncovalent complex

Collision-induced dissociation of 16-mer DNA duplexes with various sequences: evidence for conservation of the double helix conformation in the gas phase, 151

Tandem mass spectrometry of specific vs. nonspecific noncovalent complexes of vancomycin antibiotics and peptide ligands, 659

Electrospray ionization mass spectrometry analysis revealed a ~310 kDa noncovalent hexamer of HPr kinase/phosphatase from *Bacillus subtilis*, 681

## Noncovalent interaction

Mass spectrometric noncovalent probing of amino acids in peptides and proteins, 269

## Oligoglycines

Multiple substitution of protons by sodium ions in sodiated oligoglycines, 89

## Orbital symmetry

1,3-H-shift pathways in C<sub>2</sub>H<sub>4</sub>O<sup>•+</sup> and C<sub>2</sub>H<sub>4</sub>O, 295

## Oxadiazole

Ion-molecule reactions between ionized nitrile oxides and neutral nitrile, 643

## PDMS

Structural analysis of *Yersinia pseudotuberculosis* ATCC 29833 lipid A, 549

## Penning trap

Recent gold cluster studies in a Penning trap, 363

## Peptide fragmentation

Ab initio and MS/MS studies on protonated peptides containing basic and acidic amino acid residues. I. Solvated proton vs. salt-bridged structures and the cleavage of the terminal amide bond of protonated RD-NH<sub>2</sub>, 203

## Peptide ions

Gas phase hydration of electrospray ions from small peptides, 1

## Peptide mass mapping

Analysis of protein mixtures by matrix-assisted laser desorption ionization-ion mobility-orthogonal-time-of-flight mass spectrometry, 253

## Peptide sequencing

Can relative cleavage frequencies in peptides provide additional sequence information?, 283

## Photo dissociation

Towards the characterization of the mechanism of the sequential activation of four methane molecules by Ta<sup>+</sup>, 457

## Photodetachment

Photodetachment of FSi(OMe)<sub>4</sub><sup>-</sup> and FGe(OMe)<sub>4</sub><sup>-</sup> anions: an experimental and theoretical study of gas-phase hypervalent Si and Ge species, 485

## Photoelectron photoion coincidence

Threshold photoelectron spectroscopy with velocity focusing: an ideal match for coincidence studies, 381

## Photoelectron spectroscopy

Threshold photoelectron spectroscopy with velocity focusing: an ideal match for coincidence studies, 381

## Photoelectron spectrum

Field ionization and Coulomb explosion of methanol in an intense field of a femtosecond laser beam, 305

## Photoionization

Threshold photoelectron spectroscopy with velocity focusing: an ideal match for coincidence studies, 381

## Position-sensitive detection

XY-TOF technique for large ion source mass spectrometers, 343

## Protein digest

Analysis of protein mixtures by matrix-assisted laser desorption ionization-ion mobility-orthogonal-time-of-flight mass spectrometry, 253

## Protein identification

Comparison of three directly coupled HPLC MS/MS strategies for identification of proteins from complex mixtures: single-dimension LC-MS/MS, 2-phase MudPIT, and 3-phase MudPIT, 245

## Protein ions

Collision cross sections of gas phase DNA ions, 161

- Protein structure  
Mass spectrometric noncovalent probing of amino acids in peptides and proteins, 269
- Protein/protein interactions  
Electrospray ionization mass spectrometry analysis revealed a ~310 kDa noncovalent hexamer of HPr kinase/phosphatase from *Bacillus subtilis*, 681
- Proteomics  
Iodine-assisted matrix-assisted laser desorption/ionisation, 697
- Proton affinities  
Proton affinities of methyl esters of *N*-acetylated amino acids, 101
- Proton transfer  
Effects of peptide chain length on the gas-phase proton transfer properties of doubly-protonated ions from bradykinin and its N-terminal fragment peptides, 115  
Ab initio and MS/MS studies on protonated peptides containing basic and acidic amino acid residues. I. Solvated proton vs. salt-bridged structures and the cleavage of the terminal amide bond of protonated RD-NH<sub>2</sub>, 203
- 1,3-Proton transfer  
Silicon vs. carbon containing ions: 1,3-proton transfers within the (CH<sub>3</sub>)(X)Si(OR)(<sup>+</sup>OHR') units, 537
- Protonated carbon suboxide  
Unimolecular gas-phase reactions of methyl and ethyl trifluoroacetoacetates upon electron ionization, 475
- Protonated methylbenzenes  
Loss of methane and ethene from long-lived gaseous xylenium ions (protonated xylene) after "composite" scrambling, 497
- Protonated peptides  
Fragmentation energetics of small peptides from multiple-collision activation and surface-induced dissociation in FT-ICR MS, 189
- Quadrupole ion trap  
Charge state dependent fragmentation of gaseous protein ions in a quadrupole ion trap: bovine ferri-, ferro-, and apo-cytochrome c, 171
- Resonance delocalization  
Cyclization and rearrangement of monofluoroallylic cations from halonium metathesis in the gas phase, 525
- Resonant laser ablation  
The resonance laser ablation Fourier-transform ion cyclotron resonance mass spectrometry (RLA-FTICRMS) a new coupling for material science, 717
- Rhizobia  
The pivotal role of tandem mass spectrometry in structural determinations of Nod factors produced by Rhizobia. Nod factors produced by wild-type strains of *Mesorhizobium huakii* and *Rhizobium* sp. *mus10*, 703
- R2PI spectrum  
Fragmentation of laser-desorbed 9-substituted adenines, 133
- Scrambling processes  
Loss of methane and ethene from long-lived gaseous xylenium ions (protonated xylene) after "composite" scrambling, 497
- Silicon contain ions  
Silicon vs. carbon containing ions: 1,3-proton transfers within the (CH<sub>3</sub>)(X)Si(OR)(<sup>+</sup>OHR') units, 537
- Skeletal rearrangements  
Loss of methane and ethene from long-lived gaseous xylenium ions (protonated xylene) after "composite" scrambling, 497
- Sodium affinity  
Interaction of MALDI matrix molecules with Na<sup>+</sup> in the gas phase, 577
- Sodium substitutions  
Multiple substitution of protons by sodium ions in sodiated oligoglycines, 89
- SORI  
Effects of peptide chain length on the gas-phase proton transfer properties of doubly-protonated ions from bradykinin and its N-terminal fragment peptides, 115
- SORI-CID  
Fragmentation energetics of small peptides from multiple-collision activation and surface-induced dissociation in FT-ICR MS, 189
- Statistical analysis  
The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233
- Stereochemical effects  
Stereocchemical effects from doubly-charged iron clusters for the structural elucidation of diastereomeric monosaccharides using ESI/IT-MS, 559
- Supercharging  
Supercharging in electrospray ionization: effects on signal and charge, 63
- Surface-induced dissociation  
Fragmentation energetics of small peptides from multiple-collision activation and surface-induced dissociation in FT-ICR MS, 189
- Tandem mass spectra  
The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233
- Tandem mass spectrometry  
Ab initio and MS/MS studies on protonated peptides containing basic and acidic amino acid residues. I. Solvated proton vs. salt-bridged structures and the cleavage of the terminal amide bond of protonated RD-NH<sub>2</sub>, 203  
Comparison of three directly coupled HPLC MS/MS strategies for identification of proteins from complex mixtures: single-dimension LC-MS/MS, 2-phase MudPIT, and 3-phase MudPIT, 245  
Can relative cleavage frequencies in peptides provide additional sequence information?, 283  
The pivotal role of tandem mass spectrometry in structural determinations of Nod factors produced by Rhizobia. Nod factors produced by wild-type strains of *Mesorhizobium huakii* and *Rhizobium* sp. *mus10*, 703
- Tautomer  
Unimolecular gas-phase reactions of methyl and ethyl trifluoroacetoacetates upon electron ionization, 475

Thermochemistry of chloride ion–fluorinated acetone complexes  
Structures, thermochemistry, and infrared spectra of chloride ion–fluorinated acetone complexes and neutral fluorinated acetones in the gas phase: experiment and theory, 593

#### Thymine

Hydration of DNA base cations in the gas phase, 11

#### Time-of-flight spectrometry

Cross-sections for  $\text{CO}^+$  and  $\text{CO}^{2+}$  production by electron impact on CO molecule, 351

#### TOF

*XY*-TOF technique for large ion source mass spectrometers, 343

#### Trace analysis

The resonance laser ablation Fourier-transform ion cyclotron resonance mass spectrometry (RLA-FTICRMS) a new coupling for material science, 717

#### Transition metal ion

Towards the characterization of the mechanism of the sequential activation of four methane molecules by  $\text{Ta}^+$ , 457

#### Tryptic peptides

The influence of histidine on cleavage C-terminal to acidic residues in doubly protonated tryptic peptides, 233

#### Urea

Dissociation behavior of  $\text{Cu}(\text{urea})^+$  complexes generated by electrospray ionization, 729

#### Vancomycin

Tandem mass spectrometry of specific vs. nonspecific noncovalent complexes of vancomycin antibiotics and peptide ligands, 659

#### Velocity focusing

Threshold photoelectron spectroscopy with velocity focusing: an ideal match for coincidence studies, 381

#### Woodward–Hoffmann

1,3-H-shift pathways in  $\text{C}_2\text{H}_4\text{O}^{*+}$  and  $\text{C}_2\text{H}_4\text{O}$ , 295

#### *XY*-TOF

*XY*-TOF technique for large ion source mass spectrometers, 343

#### *Y. pseudotuberculosis*

Structural analysis of *Yersinia pseudotuberculosis* ATCC 29833 lipid A, 549