

Prof. Jos Oomens
List of publications¹

International peer-reviewed journals

1. Z. Tang, F.D.S. Simonsen, R. Jaganathan, J. Palotás, J. Oomens, L. Hornekaer, B. Hammer
Top-down formation of ethylene from fragmentation of superhydrogenated polycyclic aromatic hydrocarbons
Astron. Astrophys. **2022**, 663, A150 - doi: [10.1051/0004-6361/202243202](https://doi.org/10.1051/0004-6361/202243202)
2. F. ter Braak, H. Elferink, K.J. Houthuijs, J. Oomens, J. Martens, T.J. Boltje
Characterization of Elusive Reaction Intermediates Using Infrared Ion Spectroscopy: Application to the Experimental Characterization of Glycosyl Cations
Acc. Chem. Res. **2022**, 55, 1669-1679 - doi: [10.1021/acs.accounts.2c00040](https://doi.org/10.1021/acs.accounts.2c00040)
3. W.A Remmerswaal, K.J. Houthuijs, R. van de Ven, H. Elferink, T. Hansen, G. Berden, H.S. Overkleef, G.A. van der Marel, F.P.T.J. Rutjes, D.V. Filippov, T.J. Boltje, J. Martens, J.D.C. Codée
Stabilization of Glucosyl Dioxolenium Ions by “Dual Participation” of the 2,2-Dimethyl-2-(ortho-nitrophenyl)acetyl (DMNPA) Protection Group for 1,2-cis-Glucosylation
J. Org. Chem. **2022**, 87, 9139-9147 - doi: [10.1021/acs.joc.2c00808](https://doi.org/10.1021/acs.joc.2c00808)
4. J. Palotás, J. Martens, G. Berden, J. Oomens
Laboratory IR Spectra of the Ionic Oxidized Fullerenes C₆₀O⁺ and C₆₀OH⁺
J. Phys. Chem. A **2022**, 126, 2928-2935 - doi: [10.1021/acs.jpca.2c01329](https://doi.org/10.1021/acs.jpca.2c01329)
5. D. Zeh, M. Bast, J. Martens, G. Berden, J. Oomens, S. Brünken, S. Schlemmer, M. Schäfer, D. Kuck
Unidirectional Double- and Triple-Hydrogen Rearrangement Reactions Probed by Infrared Ion Spectroscopy
J. Am. Soc. Mass Spectrom. **2022**, 33, 1377-1392 - doi: [10.1021/jasms.2c00039](https://doi.org/10.1021/jasms.2c00039)
6. J. Merx, K.J. Houthuijs, H. Elferink, E. Witlox, J. Mecinovic, J. Oomens, J. Martens, T.J. Boltje, F.P.J.T. Rutjes
Characterization of Cyclic N-Acyliminium Ions by Infrared Ion Spectroscopy
Chem. Eur. J. **2022**, 28, e202104078 - doi: [10.1002/chem.202104078](https://doi.org/10.1002/chem.202104078)
7. J.R. Aviles-Moreno, F. Gamez, G. Berden, J. Oomens, B. Martinez-Haya
Inclusion complexes of the macrocycle nonactin with benchmark protonated amines: aniline and serine
Phys. Chem. Chem. Phys. **2022**, 24, 8422-8431 - doi: [10.1039/d2cp00264g](https://doi.org/10.1039/d2cp00264g)
8. R.E. van Outersterp, U.F.H. Engelke, J. Merx, G. Berden, M. Paul, T. Thomulka, A. Berkessel, M.C.D.G. Huigen, L.A.J. Kluijtmans, J. Mecinovic, F.P.T.J. Rutjes, C.D.M. van Karnebeek, R.A. Wevers, T.J. Boltje, K.L.M. Coene, J. Martens, J. Oomens
Metabolite Identification Using Infrared Ion Spectroscopy – Novel Biomarkers for Pyridoxine-Dependent Epilepsy
Anal. Chem. **2021**, 93, 15340-15348 - doi: [10.1021/acs.analchem.1c02896](https://doi.org/10.1021/acs.analchem.1c02896)

¹ Entries in red have received more than 100 citations (Web of Science).

9. U.F.H. Engelke, R.E. van Outersterp, J. Merx, F.A.M.G. van Geenen, A. van Rooij, G. Berden, M.C.D.G. Huigen, L.A.J. Kluijtmans, T.M.A. Peters, H.H. Al-Shekaili, B.R. Leavitt, E. de Vrieze, S. Broekman, E. van Wijk, L.A. Tseng, P. Kulkarni, F.P.J.T. Rutjes, J. Mecinović, E.A. Struys, L.A. Jansen, S.M. Gospe Jr., S. Mercimek-Andrews, K. Hyland, M.A.A.P. Willemsen, L.A. Bok, C.D.M. van Karnebeek, R.A. Wevers, T.J. Boltje, J. Oomens, J. Martens, K.L.M. Coene
Untargeted metabolomics and infrared ion spectroscopy identify biomarkers for pyridoxine-dependent epilepsy
J. Clin. Invest. **2021**, *131*, e148272 - doi: [10.1172/JCI148272](https://doi.org/10.1172/JCI148272)
10. S. Becher, G. Berden, J. Martens, J. Oomens, S. Heiles
IRMPD spectroscopy of $[PC(4:0/4:0) + M]^+$ ($M = H, Na, K$) and corresponding CID fragment ions
J. Am. Soc. Mass Spectrom. **2021**, *32*, 2874–2884 - doi: [10.1021/jasms.1c00277](https://doi.org/10.1021/jasms.1c00277)
11. R.E. van Outersterp, J. Martens, A. Peremans, L. Lamard, F. Cuyckens, J. Oomens, G. Berden
Evaluation of table-top lasers for routine infrared ion spectroscopy in the analytical laboratory
Analyst **2021**, *146*, 7218–7229 - doi: [10.1039/d1an01406d](https://doi.org/10.1039/d1an01406d)
12. P.B. Armentrout, G.C. Boles, M. Ghiassee, G. Berden, J. Oomens
Infrared Multiple-Photon Dissociation spectra of sodiated complexes of the aliphatic amino acids
J. Phys. Chem. A **2021**, *125*, 6348–6355 - doi: [10.1021/acs.jpca.1c04708](https://doi.org/10.1021/acs.jpca.1c04708)
13. P. Jensen, J. Oomens, O. Asvany, S. Thorwirth, H.S.P. Müller
Laboratory spectroscopy for astrophysics: Festschrift for Stephan Schlemmer
J. Mol. Spectrosc. **2021**, *379*, 111492 - doi: [10.1016/j.jms.2021.111492](https://doi.org/10.1016/j.jms.2021.111492)
14. C.P. McNary, M. Demireva, J. Martens, G. Berden, J. Oomens, L.A. Hamlow, M.T. Rodgers, P.B. Armentrout
Infrared multiple photon dissociation action spectroscopy of protonated unsymmetrical dimethylhydrazine and proton-bound dimers of hydrazine and unsymmetrical dimethylhydrazine
Phys. Chem. Chem. Phys. **2021**, *23*, 25877–25885 - doi: [10.1039/d1cp03781a](https://doi.org/10.1039/d1cp03781a)
15. E. Renault, J. Jian, R. Maurice, M.J. van Stipdonk, I.J. Tatosian, A.R. Bubas, J. Martens, G. Berden, J. Oomens, J.K. Gibson
Characterization of Uranyl coordinated by equatorial oxygen: oxo in UO_3 versus oxyl in UO_3^+
J. Phys. Chem. A **2021**, *125*, 5544–5555 - doi: [10.1021/acs.jpca.1c03818](https://doi.org/10.1021/acs.jpca.1c03818)
16. B.C. Stevenson, K. Peckelsen, J. Martens, G. Berden, J. Oomens, M. Schäfer, P.B. Armentrout
An investigation of inter-ligand coordination and flexibility: IRMPD spectroscopic and theoretical evaluation of calcium and nickel histidine dimers
J. Mol. Spectrosc. **2021**, *381*, 111532 - doi: [j.jms.2021.111532](https://doi.org/10.1016/j.jms.2021.111532)
17. F. Gámez, J.R. Avilés-Moreno, G. Berden, J. Oomens, B. Martínez-Haya
Proton in the ring: spectroscopy and dynamics of proton bonding in macrocycle cavities
Phys. Chem. Chem. Phys. **2021**, *23*, 21532–21543 - doi: [10.1039/D1CP03033G](https://doi.org/10.1039/D1CP03033G)
18. A. Andersson, M. Poline, K.J. Houthuijs, R.E. van Outersterp, G. Berden, J. Oomens, V. Zhaunerchyk
IRMPD spectroscopy of homo- and heterochiral Asparagine proton-bound dimers in the gas phase



- J. Phys. Chem. A **2021**, *125*, 7449-7456 - doi: [10.1021/acs.jpca.1c05667](https://doi.org/10.1021/acs.jpca.1c05667)
19. C.C. He, L.A. Hamlow, B. Kimutai, H.A. Roy, Z.J. Devereaux, N.A. Cunningham, J. Martens, G. Berden, J. Oomens, C.S. Chow M.T. Rodgers
Structural determination of arginine-linked cisplatin complexes via IRMPD action spectroscopy: arginine binds to platinum via NO⁻ binding mode
Phys. Chem. Chem. Phys., **2021**, *23*, 21959-21971 - doi: [10.1039/D1CP03407C](https://doi.org/10.1039/D1CP03407C)
20. J. Palotás, J. Martens, G. Berden, J. Oomens
Laboratory IR spectroscopy of protonated hexa-peri-hexabenzocoronene and dicoronylene
J. Mol. Spectrosc. **2021**, *378*, 111474 - doi: [10.1016/j.jms.2021.111474](https://doi.org/10.1016/j.jms.2021.111474)
21. J. Palotás, J. Martens, G. Berden, J. Oomens
The Infrared Spectrum of Protonated C₇₀
Astrophys. J. Lett. **2021**, *909*, L17 - doi: [10.3847/2041-8213/abe874](https://doi.org/10.3847/2041-8213/abe874)
22. R.E. van Outersterp, S.J. Moons, U.F.H. Engelke, H. Bentlage, T.M.A. Peters, A. van Rooij, M.C.D.G. Huigen, S. de Boer, E. van der Heeft, L.A.J. Kluijtmans, C.D.M. van Karnebeek, R.A. Wevers, G. Berden, J. Oomens, T.J. Boltje, K.L.M. Coene, J. Martens
Amadori rearrangement products as potential biomarkers for inborn errors of amino-acid metabolism
Commun. Biol. **2021**, *4*, 367 - doi: [10.1038/s42003-021-01909-5](https://doi.org/10.1038/s42003-021-01909-5)
23. E. Hanozin, B. Mignolet, J. Martens, G. Berden, D. Sluysmans, A.-S. Duwez, J.F. Stoddart, G. Eppe, J. Oomens, E. de Pauw, D. Morsa
Radical-Pairing Interactions in a Molecular Switch Evidenced by Ion Mobility Spectrometry and Infrared Ion Spectroscopy
Angew. Chem. Int. Ed. **2021**, *60*, 10049-10055 - doi: [10.1002/anie.202014728](https://doi.org/10.1002/anie.202014728)
24. L. Vo, E. Legaard, C. Thrasher, A. Jaffe, G. Berden, J. Martens, J. Oomens, R.E. O'Brien
UV/Vis and IRMPD Spectroscopic Analysis of the Absorption Properties of Methylglyoxal Brown Carbon
ACS Earth Space Chem. **2021**, *5*, 910-919 - doi: [10.1021/acsearthspacechem.1c00022](https://doi.org/10.1021/acsearthspacechem.1c00022)
25. F.A.M.G. van Geenen, R.F. Kranenburg, A.C. van Asten, J. Martens, J. Oomens, G. Berden
Isomer-Specific Two-Color Double-Resonance IR²MS³ Ion Spectroscopy Using a Single Laser: Application in the Identification of Novel Psychoactive Substances
Anal. Chem. **2021**, *93*, 2687-2693 - doi: [10.1021/acs.analchem.0c05042](https://doi.org/10.1021/acs.analchem.0c05042)
26. G.C. Boles, L.J.M. Kempkes, J. Martens, G. Berden, J. Oomens, P.B. Armentrout
Influence of a Hydroxyl Group on the Deamidation and Dehydration Reactions of Protonated Asparagine-Serine Investigated by Combined Spectroscopic, Guided Ion Beam, and Theoretical Approaches
J. Am. Soc. Mass Spectrom. **2021**, *32*, 786-805 - doi: [10.1021/jasms.0c00468](https://doi.org/10.1021/jasms.0c00468)
27. G.C. Boles, B.C. Stevenson, R.L. Hightower, G. Berden, J. Oomens, P.B. Armentrout
Zinc and cadmium complexation of L-methionine: An infrared multiple photon dissociation spectroscopy and theoretical study
J. Mass Spectrom. **2021**, *56*, 4580 - doi: [10.1002/jms.4580](https://doi.org/10.1002/jms.4580)
28. S.D. Wiersma, A. Candian, J.M. Bakker, G. Berden, J.R. Eyler, J. Oomens, A.G.G.M. Tielens, A. Petrigiani

IR photofragmentation of the phenyl cation: spectroscopy and fragmentation pathways
Phys. Chem. Chem. Phys. **2021**, 23, 4334–4343 - doi: [10.1039/D0CP05554A](https://doi.org/10.1039/D0CP05554A)

29. S. Banhatti, J. Palotás, P. Jusko, B. Redlich, J. Oomens, S. Schlemmer, S. Brünken
Infrared action spectroscopy of doubly charged PAHs and their contribution to the aromatic infrared bands
A&A **2021**, 648, A61 - doi: [10.1051/0004-6361/202039744](https://doi.org/10.1051/0004-6361/202039744)
30. T. Uhlemann, G. Berden, J. Oomens
Preferred protonation site of a series of sulfa drugs in the gas phase revealed by IR spectroscopy
Eur. Phys. J. D **2021**, 75, 1-13 - doi: [10.1140/epjd/s10053-020-00027-x](https://doi.org/10.1140/epjd/s10053-020-00027-x)
31. M. Paul, K. Peckelsen, T. Thomulka, J. Martens, G. Berden, J. Oomens, J.-M. Neudörfl, M. Breugst, A.J.H.M. Meijer, M. Schäfer, A. Berkessel
Breslow Intermediates (Amino Enols) and Their Keto Tautomers: First Gas-Phase Characterization by IR Ion Spectroscopy
Chem. Eur. J. **2021**, 27, 2662-2669 - doi: [10.1002/chem.202003454](https://doi.org/10.1002/chem.202003454)
32. D.B. Eremin, D.A. Boiko, A.Y. Kostyukovich, J.V. Burykina, E.A. Denisova, M. Anania, J. Martens, G. Berden, J. Oomens, J. Roithová, V.P. Ananikov
Mechanistic Study of Pd/NHC-Catalyzed Sonogashira Reaction: Discovery of NHC-Ethynyl Coupling Process
Chem. Eur. J. **2020**, 26, 15672-15681 - doi: [10.1002/chem.202003533](https://doi.org/10.1002/chem.202003533)
33. B.C. Stevenson, J. Martens, G. Berden, J. Oomens, M. Schäfer, P.B. Armentrout
IRMPD Spectroscopic and Theoretical Structural Investigations of Zinc and Cadmium Dications Bound to Histidine Dimers
J. Phys. Chem. A **2020**, 124, 10266-10276 - doi: [10.1021/acs.jpca.0c08861](https://doi.org/10.1021/acs.jpca.0c08861)
34. J. Oomens, L.J.M. Kempkes, T.P.J. Geurts, L. van Dijk, J. Martens, G. Berden, P.B. Armentrout
Water loss from protonated XxxSer and XxxThr dipeptides gives oxazoline - not oxazolone - product ions
J. Am. Soc. Mass Spectrom. **2020**, 31, 2111-2123 - doi: [10.1021/jasms.0c00239](https://doi.org/10.1021/jasms.0c00239)
35. T. Hansen, H. Elferink, J.M.A. van Hengst, K.J. Houthuijs, W.A. Remmerswaal, A. Kromm, G. Berden, S. van der Vorm, A.M. Rijs, H.S. Overkleeft, D.V. Filippov, F.P.J.T. Rutjes, G.A. van der Marel, J. Martens, J. Oomens, J.D.C. Codée, T.J. Boltje
Characterization of glycosyl dioxolenium ions and their role in glycosylation reactions
Nature Commun. **2020**, 11, 2664 - doi: [10.1038/s41467-020-16362-x](https://doi.org/10.1038/s41467-020-16362-x)
36. J. Palotás, J. Martens, G. Berden, J. Oomens
The infrared spectrum of protonated buckminsterfullerene C₆₀H⁺
Nature Astron. **2020**, 4, 240-245 - doi: [10.1038/s41550-019-0941-6](https://doi.org/10.1038/s41550-019-0941-6)
37. W.K. Tang, X. Mu, M. Li, J. Martens, G. Berden, J. Oomens, I.K. Chu, C.-K. Siu
Formation of $n \rightarrow \pi^+$ interaction facilitating dissociative electron transfer in isolated tyrosine-containing molecular peptide radical cations
Phys. Chem. Chem. Phys. **2020**, 22, 21393-21402 - doi: [10.1039/d0cp00533a](https://doi.org/10.1039/d0cp00533a)
38. O. Lagatie, A. Verheyen, S. van Asten, M.R. Odiere, Y. Djuardi, B. Levecke, J. Vlamincx, Z. Mekonnen, D. Dana, R. 't Kindt, K. Sandra, R. van Outersterp, J. Oomens, R. Lin, L. Dillen, R. Vreeken, F. Cuyckens, L. Stuyver



2-Methyl-pentanoyl-carnitine (2-MPC): a urine biomarker for patent Ascaris lumbricoides infection
Sci. Rep. **2020**, *10*, 15780 - doi: [10.1038/s41598-020-72804-y](https://doi.org/10.1038/s41598-020-72804-y)

39. R.E. van Outersterp, J. Martens, G. Berden, V. Koppen, F. Cuyckens, J. Oomens
Mass spectrometry-based identification of ortho-, meta- and para-isomers using infrared ion spectroscopy
Analyst **2020**, *145*, 6162-6170 - doi: [10.1039/d0an01119c](https://doi.org/10.1039/d0an01119c)
40. J.A. Berenbeim, N.G.K. Wong, M.C.R. Cockett, G. Berden, J. Oomens, A.M. Rijs, C.E.H. Dessent
Sodium cationization can disrupt the intramolecular hydrogen bond that mediates the sunscreen activity of oxybenzone
Phys. Chem. Chem. Phys. **2020**, *22*, 19522-19531 - doi: [10.1039/d0cp03152f](https://doi.org/10.1039/d0cp03152f)
41. R.F. Kranenburg, F.A.M.G. van Geenen, G. Berden, J. Oomens, J. Martens, A.C. van Asten
Mass-spectrometry-based identification of synthetic drug isomers using infrared ion spectroscopy
Anal. Chem. **2020**, *92*, 7282-7288 - doi: [10.1021/acs.analchem.0c00915](https://doi.org/10.1021/acs.analchem.0c00915)
42. Y. Li, M. Li, D.M. Spencer, J. Martens, G. Berden, J. Oomens, C.-K. Siu, I.K. Chu
Mechanistic examination of C α -C β tyrosyl bond cleavage: Spectroscopic investigation of the generation of α -glycyl radical cations from tyrosyl (glycyl/alanyl)tryptophan
J. Mass Spectrom. **2020**, e4630 - doi: [10.1002/jms.4630](https://doi.org/10.1002/jms.4630)
43. J.R. Avilés-Moreno, F. Gámez, G. Berden, J. Martens, J. Oomens, B. Martínez-Haya
Multipodal coordination and mobility of molecular cations inside the macrocycle valinomycin
Phys. Chem. Chem. Phys. **2020**, *22*, 19725-19734 - doi: [10.1039/d0cp02996c](https://doi.org/10.1039/d0cp02996c)
44. J.T Davidson, E.L. Piacentino, Z.J. Sasiene, Y. Abiedalla, J. DeRuiter, C.R. Clark, G. Berden, J. Oomens, V. Ryzhov, G.P. Jackson
Identification of novel fragmentation pathways and fragment ion structures in the tandem mass spectra of protonated synthetic cathinones
Forensic Chem. **2020**, *19*, 100245 - doi: [10.1016/j.forc.2020.100245](https://doi.org/10.1016/j.forc.2020.100245)
45. J.A. Berenbeim, N.G.K. Wong, M.C.R. Cockett, G. Berden, J. Oomens, A.M. Rijs, C.E.H. Dessent
Unravelling the keto-enol tautomer dependent photochemistry and degradation pathways of the protonated UVA filter avobenzene
J. Phys. Chem. A **2020**, *124*, 2919-2930 - doi: [10.1021/acs.jpca.0c01295](https://doi.org/10.1021/acs.jpca.0c01295)
46. B. Acharya, W.K.D.N. Kaushalya, J. Martens, G. Berden, J. Oomens, A.L. Patrick
A combined infrared ion spectroscopy and computational chemistry study of hydroxyproline isomers
J. Am. Soc. Mass Spectrom. **2020**, *31*, 1205-1211 - doi: [10.1021/jasms.0c00061](https://doi.org/10.1021/jasms.0c00061)
47. S.D. Wiersma, A. Candian, J.M. Bakker, J. Martens, G. Berden, J. Oomens, W.J. Buma, A. Petignani
Photolysis-induced scrambling of PAHs as a mechanism for deuterium storage
Astron. Astrophys. **2020**, *635*, A9 - doi: [10.1051/0004-6361/201936982](https://doi.org/10.1051/0004-6361/201936982)
48. K.J. Houthuijs, J. Martens, A.G. Arranja, G. Berden, J.F.W. Nijssen, J. Oomens
Characterization of holmium(III)-acetylacetonate complexes derived from therapeutic microspheres by infrared ion spectroscopy
Phys. Chem. Chem. Phys. **2020**, *22*, 15716-15722 - doi: [10.1039/d0cp01890b](https://doi.org/10.1039/d0cp01890b)

49. J. Martens, R.E. van Outersterp, R.J. Vreeken, F. Cuyckens, K.L.M. Coene, U.F. Engelke, L.A.J. Kluijtmans, R.A. Wevers, L.M.C. Buydens, B. Redlich, G. Berden, J. Oomens
Infrared ion spectroscopy: New opportunities for small-molecule identification in mass spectrometry - A tutorial perspective
Anal. Chim. Acta, **2020**, *1093*, 1-15 - doi: [10.1016/j.aca.2019.10.043](https://doi.org/10.1016/j.aca.2019.10.043)
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50. M.U. Munshi, J. Martens, G. Berden, J. Oomens
Vibrational spectra of the ruthenium-tris-bipyridine dication and its reduced form in vacuo
J. Phys. Chem. A **2020**, *124*, 2449-2459 - doi: [10.1021/acs.jpca.0c00888](https://doi.org/10.1021/acs.jpca.0c00888)
51. Y. Li, M. Li, D. Spencer, J. K.-C. Lau, J. Martens, G. Berden, J. Oomens, D.-C. Fang, A.C. Hopkinson, K.W.M. Siu, C.-K. Siu, I.K. Chu
Dissociative electron transfer of copper(II) complexes of glycy(glycyl/alanyl)tryptophan in vacuo: IRMPD action spectroscopy provides evidence of transition from zwitterionic to non-zwitterionic peptide structures
Phys. Chem. Chem. Phys. **2020**, *22*, 13084-13091 - doi: [10.1039/d0cp02296a](https://doi.org/10.1039/d0cp02296a)
52. L.A. Hamlow, Y.-w. Nei, R.R. Wu, J. Gao, J.D. Steill, G. Berden, J. Oomens, M.T. Rodgers
Influence of the local environment on the intrinsic structures of gas-phase cytidine-5'-monophosphates
Int. J. Mass Spectrom. **2020**, *447*, 116234 - doi: [10.1016/j.ijms.2019.116234](https://doi.org/10.1016/j.ijms.2019.116234)
53. D.B. Eremin, E.A. Denisova, A.Y. Kostyukovich, J. Martens, G. Berden, J. Oomens, V.N. Khrustalev, V.M. Chernyshev, V.P. Ananikov
Ionic Pd/NHC catalytic system enables recoverable homogeneous catalysis: Mechanistic study and application in the Mizoroki–Heck reaction
Chem. Eur. J. **2019**, *25*, 16564-16572 - doi: [10.1002/chem.201903221](https://doi.org/10.1002/chem.201903221)
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54. C. Switzer, J. Martens, L.J.M. Kempkes, G. Berden, J. Oomens, T.H. Morton
Gas-phase vibrations of the anionic, hydrogen-bonded dimer of 9-methylguanine
Int. J. Mass Spectrom. **2019**, *446*, 116211 - doi: [10.1016/j.ijms.2019.116211](https://doi.org/10.1016/j.ijms.2019.116211)
55. E.O. Soley, Z.J. Devereaux, L.A. Hamlow, G. Berden, J. Oomens, M.T. Rodgers
IRMPD action spectroscopy, ER-CID experiments, and theoretical approaches investigate intrinsic L-thymidine properties compared to D-thymidine: Findings support robust methodology
Int. J. Mass Spectrom. **2019**, *441*, 32-43 - doi: [10.1016/j.ijms.2019.04.003](https://doi.org/10.1016/j.ijms.2019.04.003)
56. I. Tatosian, L. Metzler, C. Graca, A. Bubas, T. Corcovilos, J. Martens, G. Berden, J. Oomens, M.J. van Stipdonk
Measurement of the asymmetric UO_2^{2+} stretching frequency for $[U^VI O_2(F)_3]^-$ using IRMPD spectroscopy
Int. J. Mass Spectrom. **2019**, *446*, 116231 - doi: [10.1016/j.ijms.2019.116231](https://doi.org/10.1016/j.ijms.2019.116231)
57. M.U. Munshi, J. Martens, G. Berden, J. Oomens
Protoisomerization of indigo and isoindigo dyes confirmed by gas-phase infrared ion spectroscopy



- J. Phys. Chem. A **2019**, *123*, 8226-8233 - doi: [10.1021/acs.jpca.9b06858](https://doi.org/10.1021/acs.jpca.9b06858)
58. G.C. Boles, R.L. Hightower, G. Berden, J. Oomens, P.B. Armentrout
Zinc and Cadmium complexation of L-threonine: an infrared multiple photon dissociation spectroscopy and theoretical study
J. Phys. Chem. B **2019**, *123*, 9343-9354 - doi: [10.1021/acs.jpcb.9b08184](https://doi.org/10.1021/acs.jpcb.9b08184)
59. P. Batoon, Y.T. Zhang, G. Berden, J. Oomens, J.H. Ren
Characterization of protonated AcAlaDab and AcDabAla by IRMPD spectroscopy and molecular modeling
Int. J. Mass Spectrom. **2019**, *444*, 116178 - doi: [10.1016/j.ijms.2019.116178](https://doi.org/10.1016/j.ijms.2019.116178)
60. J.R. Aviles-Moreno, G. Berden, J. Oomens, B. Martinez-Haya
Insights into the recognition of phosphate groups by peptidic arginine from action spectroscopy and quantum-chemical computations
J. Phys. Chem. B **2019**, *123*, 7528-7535 - doi: [10.1021/acs.jpcb.9b06201](https://doi.org/10.1021/acs.jpcb.9b06201)
61. G. Berden, M. Derksen, K.J. Houthuijs, J. Martens, J. Oomens
An automatic variable laser attenuator for IRMPD spectroscopy and analysis of power-dependence in fragmentation spectra
Int. J. Mass Spectrom. **2019**, *443*, 1-8 - doi: [10.1016/j.ijms.2019.05.013](https://doi.org/10.1016/j.ijms.2019.05.013)
62. R.E. van Outersterp, K.J. Houthuijs, G. Berden, U.F. Engelke, L.A.J. Kluijtmans, R.A. Wevers, K.L.M. Coene, J. Oomens, J. Martens
Reference-standard free metabolite identification using infrared ion spectroscopy
Int. J. Mass Spectrom. **2019**, *443*, 77-85 - doi: [10.1016/j.ijms.2019.05.015](https://doi.org/10.1016/j.ijms.2019.05.015)
63. Z.M. Smith, X.Y. Wang, J.R. Scheerer, J. Martens, G. Berden, J. Oomens, V. Steinmetz, A. Somogyi, V. Wysocki, J.C. Poutsma
Spectroscopic evidence for lactam formation in terminal ornithine b_2^+ and b_3^+ fragment ions
J. Am. Soc. Mass Spectrom. **2019**, *30*, 565-1577 - doi: [10.1007/s13361-019-02244-0](https://doi.org/10.1007/s13361-019-02244-0)
64. L.A. Hamlow, Y.W. Nei, R.R. Wu, J. Gao, J.D. Steill, G. Berden, J. Oomens, M.T. Rodgers
Impact of sodium cationization on gas-phase conformations of DNA and RNA cytidine mononucleotides
J. Am. Soc. Mass Spectrom. **2019**, *30*, 1758-1767 - doi: [10.1007/s13361-019-02274-8](https://doi.org/10.1007/s13361-019-02274-8)
65. M. Paul, K. Peckelsen, T. Thomulka, J. Neudörfl, J. Martens, G. Berden, A. Berkessel, A.J.H.M. Meijer, M. Schäfer
Hydrogen tunneling avoided: enol-formation from a charge-tagged phenyl pyruvic acid derivative evidenced by tandem-MS, IR ion spectroscopy and theory
Phys. Chem. Chem. Phys. **2019**, *21*, 16591-16600 - doi: [10.1039/c9cp02316j](https://doi.org/10.1039/c9cp02316j)
66. G.C. Boles, L.J.M. Kempkes, J. Martens, G. Berden, J. Oomens, P.B. Armentrout
Ion spectroscopy and guided ion beam studies of protonated asparaginyl-threonine decomposition: Influence of a hydroxyl containing C-terminal residue on deamidation processes
Int. J. Mass Spectrom. **2019**, *442*, 64-82 - doi: [10.1016/j.ijms.2019.05.010](https://doi.org/10.1016/j.ijms.2019.05.010)
67. E.Q. Walhout, S.E. Dorn, J. Martens, G. Berden, J. Oomens, P.H.Y. Cheong, J.H. Kroll, R.E. O'Brien
Infrared ion spectroscopy of environmental organic mixtures: probing the composition of alpha-pinene secondary organic aerosol
Environ. Sci. Technol. **2019**, *53*, 7604-7612 - doi: [10.1021/acs.est.9b02077](https://doi.org/10.1021/acs.est.9b02077)

68. Z.J. Deveraux, C.C. He, Y. Zhu, H.A. Roy, N.A. Cunningham, L.A. Hamlow, G. Berden, J. Oomens, M.T. Rodgers
Structures and relative glycosidic bond stabilities of protonated 2'-fluoro-substituted purine nucleosides
J. Am. Soc. Mass Spectrom. **2019**, *30*, 1521-1536 - doi: [10.1007/s13361-019-02222-6](https://doi.org/10.1007/s13361-019-02222-6)
69. J.K.C. Lau, C.K. Lai, K.H.B. Lam, I.K. Chu, J. Martens, G. Berden, J. Oomens, A.C. Hopkinson, K.W.M. Siu
Structures of $[GPGG + H - H_2O]^+$ and $[GPGG + H - H_2O - NH=CH_2]^+$ ions; evidence of rearrangement prior to dissociation
Int. J. Mass Spectrom. **2019**, *442*, 51-57 - doi: [10.1016/j.ijms.2019.04.006](https://doi.org/10.1016/j.ijms.2019.04.006)
70. L.J.M. Kempkes, J. Martens, G. Berden, K.J. Houthuijs, J. Oomens
Investigation of the position of the radical in z_3 -ions resulting from electron transfer dissociation using infrared ion spectroscopy
Faraday Discuss. **2019**, *217*, 434-452 - doi: [10.1039/c8fd00202a](https://doi.org/10.1039/c8fd00202a)
71. P. Jusko, S. Brünken, O. Asvany, S. Thorwirth, A. Stoffels, L. van der Meer, G. Berden, B. Redlich, J. Oomens, S. Schlemmer
The FELion cryogenic ion trap beam line at the FELIX free-electron laser laboratory: infrared signatures of primary alcohol cations
Faraday Discuss. **2019**, *217*, 172-202 - doi: [10.1039/c8fd00225h](https://doi.org/10.1039/c8fd00225h)
72. H. Elferink, R.A. Mensink, W.W.A. Castelijns, O. Jansen, J.P.J. Bruekers, J. Martens, J. Oomens, A.M. Rijs, T.J. Boltje
The glycosylation mechanisms of 6,3-uronic acid lactones
Angew. Chem. Int. Ed. **2019**, *58*, 8746-8751 - doi: [10.1002/anie.201902507](https://doi.org/10.1002/anie.201902507)
73. M.U. Munshi, J. Martens, G. Berden, J. Oomens,
Gas-phase infrared ion spectroscopy characterization of Cu(II/I)cyclam and Cu(II/I)₂,2'-bipyridine redox pairs
J. Phys. Chem. A **2019**, *123*, 4149-4157 - doi: [10.1021/acs.jpca.9b00793](https://doi.org/10.1021/acs.jpca.9b00793)
74. L.A. Hamlow, Z.J. Deveraux, H.A. Roy, N.A. Cunningham, G. Berden, J. Oomens, M.T. Rodgers
Impact of the 2- and 3-sugar hydroxyl moieties on gas-phase nucleoside structure
J. Am. Soc. Mass Spectrom. **2019**, *30*, 832-845 - doi: [10.1007/s13361-019-02155-0](https://doi.org/10.1007/s13361-019-02155-0)
75. S. Cazaux, Y. Arribard, D. Egorov, L. Palotás, R. Hoekstra, G. Berden, J. Oomens, T. Schlathölter
The sequence of coronene hydrogenation revealed by gas-phase IR spectroscopy
Astrophys. J. **2019**, *875*, 27 - doi: [10.3847/1538-4357/ab0e01](https://doi.org/10.3847/1538-4357/ab0e01)
76. P.B. Armentrout, T. Baer, J.L. Beauchamp, J. Oomens, M.T. Rodgers, V. Ryzhov
Robert C. Dunbar (1943 – 2017)
Eur. J. Mass Spectrom. **2019**, *25*, 4-7 - doi: [10.1177/1469066718817619](https://doi.org/10.1177/1469066718817619)
77. J. Oomens, N.C. Polfer, G. Berden, J.R. Eyler
Gas-phase metal ion chelation investigated with IRMPD spectroscopy: a brief review of Robert Dunbar's contributions
Eur. J. Mass Spectrom. **2019**, *25*, 86-96 - doi: [10.1177/1469066718799175](https://doi.org/10.1177/1469066718799175)
78. C.J. Owen, G.C. Boles, G. Berden, J. Oomens, P.B. Armentrout

Experimental and theoretical investigations of infrared multiple photon dissociation spectra of lysine complexes with Zn²⁺ and Cd²⁺

Eur. J. Mass Spectrom. **2019**, 25, 97-111 - doi: [10.1177/1469066718792902](https://doi.org/10.1177/1469066718792902)

79. A. Piatkivskiy, J.K.C. Lau, G. Berden, J. Oomens, A.C. Hopkinson, K.W.M. Siu, V. Ryzhov
Hydrogen atom transfer in the radical cations of tryptophan-containing peptides AW and WA studied by mass spectrometry, infrared multiple-photon dissociation spectroscopy, and theoretical calculations
Eur. J. Mass Spectrom. **2019**, 25, 112-121 - doi: [10.1177/1469066718802547](https://doi.org/10.1177/1469066718802547)
80. E. Perez, T.A. Corcovilos, J.K. Gibson, J. Martens, G. Berden, J. Oomens, M.J. van Stipdonk
Isotope labeling and infrared multiple-photon photodissociation investigation of product ions generated by dissociation of [ZnNO₃(CH₃OH)₂]⁺: conversion of methanol to formaldehyde
Eur. J. Mass Spectrom. **2019**, 25, 58-72 - doi: [10.1177/1469066718809881](https://doi.org/10.1177/1469066718809881)
81. J.R. Aviles-Moreno, G. Berden, J. Oomens, B. Martinez-Haya
A Cl⁻ Hinge for Cyclen Macrocycles: Ionic Interactions and Tweezer-Like Complexes
Frontiers in Chemistry, **2019**, 7, 143 - doi: <http://dx.doi.org/10.3389/fchem.2019.00143>
82. Z.J. Devereaux, H.A. Roy, C.C. He, Y. Zhu, N.A. Cunningham, L.A. Hamlow, G. Berden, J. Oomens, M.T. Rodgers
Influence of 2'-fluoro modification on glycosidic bond stabilities and gas-phase ion structures of protonated pyrimidine nucleosides
J. Fluor. Chem. **2019**, 219, 10-22 - doi: [10.1016/j.jfluchem.2018.12.004](https://doi.org/10.1016/j.jfluchem.2018.12.004)
83. L.A. Hamlow, C.C. He, Z.J. Devereaux, H.A. Roy, N.A. Cunningham, E.O. Soley, G. Berden, J. Oomens, M.T. Rodgers
Gas-phase structures of protonated arabino nucleosides
Int. J. Mass Spectrom. **2019**, 438, 124-134 - doi: [10.1016/j.ijms.2019.01.005](https://doi.org/10.1016/j.ijms.2019.01.005)
84. J. Bouwman, S. Horst, J. Oomens
Spectroscopic Characterization of the Product Ions Formed by Electron Ionization of Adamantane
ChemPhysChem **2018**, 19, 3211-3218 - doi: [10.1002/cphc.201800846](https://doi.org/10.1002/cphc.201800846)
85. L.J.M. Kempkes, J. Martens, G. Berden, J. Oomens
Spectroscopic Characterization of an Extensive Set of c-Type Peptide Fragment Ions Formed by Electron Transfer Dissociation Suggests Exclusive Formation of Amide Isomers
J. Phys. Chem. Lett. **2018**, 9, 6404-6411 - doi: [10.1021/acs.jpcllett.8b02850](https://doi.org/10.1021/acs.jpcllett.8b02850)
86. L.J.M. Kempkes, J. Martens, G. Berden, J. Oomens
w-Type ions formed by electron transfer dissociation of Cys-containing peptides investigated by infrared ion spectroscopy
J. Mass Spectrom. **2018**, 53, 1207-1213 - doi: [10.1002/jms.4298](https://doi.org/10.1002/jms.4298)
87. B. Martinez-Haya, J.R. Aviles-Moreno, F. Gamez, G. Berden, J. Oomens
Preferential host-guest coordination of nonactin with ammonium and hydroxylammonium
J. Chem. Phys. **2018**, 149, 225101 - doi: [10.1063/1.5049956](https://doi.org/10.1063/1.5049956)
88. H. Elferink, M.E. Severijnen, J. Martens, R.A. Mensink, G. Berden, J. Oomens, F.P.J.T. Rutjes, A.M. Rijs, T.J. Boltje
Direct Experimental Characterization of Glycosyl Cations by Infrared Ion Spectroscopy
J. Am. Chem. Soc. **2018**, 140, 6034-6038 - doi: [10.1021/jacs.8b01236](https://doi.org/10.1021/jacs.8b01236)

89. J. Martens, G. Berden, H. Bentlage, K.L.M. Coene, U.F. Engelke, D. Wishart, M. Van Scherpenzeel, L.A.J. Kluijtmans, R.A. Wevers, J. Oomens
Unraveling the unknown areas of the human metabolome: the role of infrared ion spectroscopy
J. Inher. Metabol. Dis. **2018**, *41*, 367-377 - doi: [10.1007/s10545-018-0161-8](https://doi.org/10.1007/s10545-018-0161-8)
90. R.E. van Outersterp, J. Martens, G. Berden, J.D. Steill, J. Oomens, A.M. Rijs
Structural characterization of nucleotide 5-triphosphates by infrared ion spectroscopy and theoretical studies
Phys. Chem. Chem. Phys. **2018**, *20*, 28319-28330 - doi: [10.1039/c8cp03314e](https://doi.org/10.1039/c8cp03314e)
91. L.J.M. Kempkes, J. Martens, G. Berden, J. Oomens
Dehydration reactions of protonated dipeptides containing asparagine or glutamine investigated by infrared ion spectroscopy
Int. J. Mass Spectrom. **2018**, *429*, 90-100 - doi: [10.1016/j.ijms.2017.06.004](https://doi.org/10.1016/j.ijms.2017.06.004)
92. R.C. Dunbar, J. Martens, G. Berden, J. Oomens
Binding of Divalent Metal Ions with Deprotonated Peptides: Do Gas-Phase Anions Parallel the Condensed Phase?
J. Phys. Chem. A **2018**, *122*, 5589-5596 - doi: [10.1021/acs.jpca.8b02926](https://doi.org/10.1021/acs.jpca.8b02926)
93. L.A. Hamlow, Y. Zhu, Z.J. Devereaux, N.A. Cunningham, G. Berden, J. Oomens, M.T. Rodgers
Modified Quadrupole Ion Trap Mass Spectrometer for Infrared Ion Spectroscopy: Application to Protonated Thiated Uridines
J. Am. Soc. Mass Spectrom. **2018**, *29*, 2125-2137 - doi: [10.1007/s13361-018-2047-2](https://doi.org/10.1007/s13361-018-2047-2)
94. J.R. Aviles-Moreno, G. Berden, J. Oomens, B. Martinez-Haya
Complexes of Crown Ether Macrocycles with Methyl Guanidinium: Insights into the Capture of Charge in Peptides
ChemPhysChem **2018**, *19*, 2169-2175
95. J. Featherstone, T. Chong, J.K. Martens, J. Oomens, T.B. McMahon
Inverse sandwich cyclopentadienyl complexes of sodium in the gas phase
J. Phys. Chem. A **2018**, *122*, 8659-8664 - doi: [10.1021/acs.jpca.8b09366](https://doi.org/10.1021/acs.jpca.8b09366)
96. A.M. Chalifoux, G.C. Boles, G. Berden, J. Oomens, P.B. Armentrout
Experimental and theoretical investigations of infrared multiple photon dissociation spectra of arginine complexes with Zn²⁺ and Cd²⁺
Phys. Chem. Chem. Phys. **2018**, *20*, 20712-20725 - doi: [10.1039/c8cp03484b](https://doi.org/10.1039/c8cp03484b)
97. K.H.B. Lam, J.K.C. Lau, C.K. Lai, I.K. Chu, J. Martens, G. Berden, J. Oomens, A.C. Hopkinson, K.W.M. Siu
Loss of water from protonated polyglycines: interconversion and dissociation of the product imidazole ions
Phys. Chem. Chem. Phys. **2018**, *20*, 18688-18698 - doi: [10.1039/c8cp02543f](https://doi.org/10.1039/c8cp02543f)
98. S. Chakrabarty, M.J. DiTucci, G. Berden, J. Oomens, E.R. Williams
Structural Investigation of the Hormone Melatonin and Its Alkali and Alkaline Earth Metal Complexes in the Gas Phase
J. Am. Soc. Mass Spectrom. **2018**, *29*, 1835-1847 - doi: [10.1007/s13361-018-2020-0](https://doi.org/10.1007/s13361-018-2020-0)
99. S. Heiles, G. Berden, J. Oomens, E.R. Williams

Competition between salt bridge and non-zwitterionic structures in deprotonated amino acid dimers

Phys. Chem. Chem. Phys. **2018**, *20*, 15641-15652 - doi: [10.1039/c8cp01458b](https://doi.org/10.1039/c8cp01458b)

100. C. Iacobucci, S. Reale, M. Aschi, J. Oomens, G. Berden, F. De Angelis
An Unprecedented Retro-Mumm Rearrangement Revealed by ESI-MS/MS, IRMPD Spectroscopy, and DFT Calculations

Chem. Eur. J. **2018**, *24*, 7026-7032 - doi: [10.1002/chem.201800347](https://doi.org/10.1002/chem.201800347)

101. R.C. Dunbar, J. Martens, G. Berden, J. Oomens
Transition metal(II) complexes of histidine-containing tripeptides: Structures, and infrared spectroscopy by IRMPD

Int. J. Mass Spectrom. **2018**, *429*, 198-205 - doi: [10.1016/j.ijms.2017.10.004](https://doi.org/10.1016/j.ijms.2017.10.004)

102. Y. Zhu, L.A. Hamlow, C.C. He, H.A. Roy, N.A. Cunningham, M. Munshi, G. Berden, J. Oomens, M.T. Rodgers

Conformations and N-glycosidic bond stabilities of sodium cationized 2'-deoxycytidine and cytidine: Solution conformation of [Cyd + Na]⁺ is preserved upon ESI

Int. J. Mass Spectrom. **2018**, *429*, 18-27 - doi: [10.1016/j.ijms.2017.04.005](https://doi.org/10.1016/j.ijms.2017.04.005)

103. Z.M. Smith, V. Steinmetz, J. Martens, J. Oomens, J.C. Poutsma
Infrared multiple photon dissociation spectroscopy of cationized canavanine: Side-chain substitution influences gas-phase zwitterion formation

Int. J. Mass Spectrom. **2018**, *429*, 158-173 - doi: [10.1016/j.ijms.2017.08.009](https://doi.org/10.1016/j.ijms.2017.08.009)

104. J.-A. Bendo, J. Martens, G. Berden, J. Oomens, T.H. Morton
Gas phase vibrations of an anionic, hydrogen-bonded homodimer of a nucleobase analogue: Isocytosino-8-trifluoromethylquinolone

Int. J. Mass Spectrom. **2018**, *429*, 206-211 - doi: [10.1016/j.ijms.2018.01.004](https://doi.org/10.1016/j.ijms.2018.01.004)

105. A. Martin-Somer, J. Martens, J. Grzetic, W.L. Hase, J. Oomens, R. Spezia
Unimolecular Fragmentation of Deprotonated Diproline [Pro₂-H]⁻ Studied by Chemical Dynamics Simulations and IRMPD Spectroscopy

J. Phys. Chem. A **2018**, *122*, 2612-2625 - doi: [10.1021/acs.jpca.7b11873](https://doi.org/10.1021/acs.jpca.7b11873)

106. L.J.M. Kempkes, G.C. Boles, J. Martens, G. Berden, P.B. Armentrout, J. Oomens
Deamidation of protonated asparagine-valine investigated by a combined spectroscopic, guided ion beam, and theoretical study

J. Phys. Chem. A **2018**, *122*, 2424-2436 - doi: [10.1021/acs.jpca.7b12348](https://doi.org/10.1021/acs.jpca.7b12348)

107. G.C. Boles, R.L. Hightower, R.A. Coates, C.P. McNary, G. Berden, J. Oomens, P.B. Armentrout
Experimental and Theoretical Investigations of Infrared Multiple Photon Dissociation Spectra of Aspartic Acid Complexes with Zn²⁺ and Cd²⁺

J. Phys. Chem. B **2018**, *122*, 3836-3853 - doi: [10.1021/acs.jpccb.8b00801](https://doi.org/10.1021/acs.jpccb.8b00801)

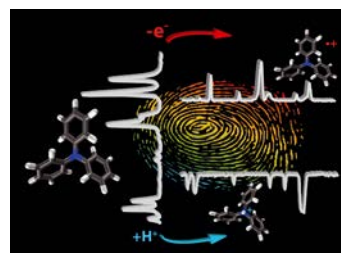
108. J.R. Aviles-Moreno, G. Berden, J. Oomens, B. Martinez-Haya
Intra-cavity proton bonding and anharmonicity in the anionophore cyclen

Phys. Chem. Chem. Phys. **2018**, *20*, 8968-8975 - doi: [10.1039/c8cp00660a](https://doi.org/10.1039/c8cp00660a)

109. J.W. Jian, S.X. Hu, W.L. Li, M.J. van Stipdonk, J. Martens, G. Berden, J. Oomens, J. Li, J.K. Gibson
Uranyl/12-crown-4 Ether Complexes and Derivatives: Structural Characterization and Isomeric Differentiation

Inorg. Chem. **2018**, 57, 4125-4134 - doi: [10.1021/acs.inorgchem.8b00306](https://doi.org/10.1021/acs.inorgchem.8b00306)

110. L. Wiesenfeld, J. Oomens, A.S.C. Cheung
Theory, experiment, and simulations in laboratory astrochemistry (Editorial)
Phys. Chem. Chem. Phys. **2018**, 20, 5341-5343 - doi: [10.1039/c8cp90026d](https://doi.org/10.1039/c8cp90026d)
111. V. Ryzhov, J. Oomens
Robert C. Dunbar (June 26, 1943 – October 31, 2017) – Obituary
J. Am. Soc. Mass Spectrom. **2018** - doi: [10.1007/s13361-017-1866-x](https://doi.org/10.1007/s13361-017-1866-x)
112. E. Maltseva, C.J. Mackie, A. Candian, A. Petrigani, X.C. Huang, T.J. Lee, A.G.G.M. Tielens, J. Oomens, W.J. Buma
High-resolution IR absorption spectroscopy of polycyclic aromatic hydrocarbons in the 3 μm region: role of hydrogenation and alkylation
Astron. Astrophys. **2018**, 610, A65 - doi: [10.1051/0004-6361/201732102](https://doi.org/10.1051/0004-6361/201732102)
113. P. Batoon, J. Oomens, G. Berden, J.H. Ren
Conformations of Protonated AlaDap and DapAla Characterized by IRMPD Spectroscopy and Molecular Modeling
J. Phys. Chem. B. **2018**, 122, 2191-2202 - doi: [10.1021/acs.jpcc.7b10435](https://doi.org/10.1021/acs.jpcc.7b10435)
114. J.K. Gibson, W.A. de Jong, M.J. van Stipdonk, J. Martens, G. Berden, J. Oomens
Equatorial coordination of uranyl: Correlating ligand charge donation with the $O_{yl}-U-O_{yl}$ asymmetric stretch frequency
J. Organometal. Chem. **2018**, 857, 94-100 - doi: [10.1016/j.jorganchem.2017.10.010](https://doi.org/10.1016/j.jorganchem.2017.10.010)
115. J.R. Avilés-Moreno, G. Berden, J. Oomens, B. Martínez-Haya
Guanidinium/ammonium competition and proton transfer in the interaction of the amino acid arginine with the tetracarboxylic 18-crown-6 ionophore
Phys. Chem. Chem. Phys. **2018**, 20, 4067-4073 - doi: [10.1039/c7cp07975c](https://doi.org/10.1039/c7cp07975c)
116. C.J. Mackie, A. Candian, X. Huang, E. Maltseva, A. Petrigani, J. Oomens, W.J. Buma, T.J. Lee, A.G.G. M. Tielens
The anharmonic quartic force field infrared spectra of hydrogenated and methylated PAHs
Phys. Chem. Chem. Phys. **2018**, 20, 1189-1197 - doi: [10.1039/c7cp06546a](https://doi.org/10.1039/c7cp06546a)
117. M.U. Munshi, S.M. Craig, G. Berden, J. Martens, A.F. DeBlase, D.J. Foreman, S.A. McLuckey, J. Oomens, M.A. Johnson
Preparation of labile Ni^+ (cyclam) cations in the gas phase using electron-transfer reduction through ion-ion recombination in an ion trap and structural characterization with vibrational spectroscopy
J. Phys. Chem. Lett. **2017**, 8, 5047-5052 - doi: [10.1021/acs.jpcllett.7b02223](https://doi.org/10.1021/acs.jpcllett.7b02223)
118. M.U. Munshi, G. Berden, J. Martens, J. Oomens
Gas-phase vibrational spectroscopy of triphenylamine: the effect of charge on structure and spectra
Phys. Chem. Chem. Phys. **2017**, 19, 19881-19889 -
doi: [10.1039/c7cp02638b](https://doi.org/10.1039/c7cp02638b)
featured on inside journal cover
119. T.C. Correra, A.S. Fernandes, M.M. Reginato, L.C. Ducati, G. Berden, J. Oomens



Probing the geometry reorganization from solution to gas phase in putrescine derivatives by IRMPD, H-1-NMR and theoretical calculations

Phys. Chem. Chem. Phys. **2017**, *19*, 24330-24340 - doi: [10.1039/c7cp04617k](https://doi.org/10.1039/c7cp04617k)

120. K. Peckelsen, J. Martens, L. Czypiel, J. Oomens, G. Berden, D. Grundemann, A.J.H.M. Meijer, M. Schäfer

Ergothioneine and related histidine derivatives in the gas phase: tautomer structures determined by IRMPD spectroscopy and theory

Phys. Chem. Chem. Phys. **2017**, *19*, 23362-23372 - doi: [10.1039/c7cp03843g](https://doi.org/10.1039/c7cp03843g)

121. J. Martens, G. Berden, R.E. van Outersterp, L.A.J. Kluijtmans, U.F. Engelke, C.D.M. van Karnebeek, R.A. Wevers, J. Oomens

Molecular identification in metabolomics using infrared ion spectroscopy

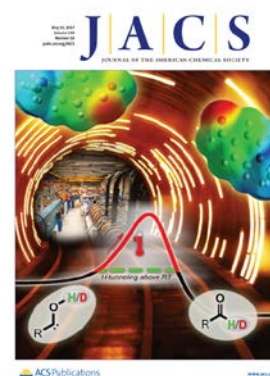
Sci. Rep. **2017**, *7*, 3363 - doi: [10.1038/s41598-017-03387-4](https://doi.org/10.1038/s41598-017-03387-4)

122. M. Schäfer, K. Peckelsen, M. Paul, J. Martens, J. Oomens, G. Berden, A. Berkessel, A.J.H.M. Meijer

Hydrogen tunneling above room temperature evidenced by infrared ion spectroscopy

J. Am. Chem. Soc. **2017**, *139*, 5779-5786 - doi: [10.1021/jacs.6b10348](https://doi.org/10.1021/jacs.6b10348)

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123. J.C. Poutsma, J. Martens, J. Oomens, P. Maitre, V. Steinmetz, M. Bernier, M.X. Jia, V. Wysocki

Infrared multiple photon dissociation action spectroscopy of the b_2^+ ion from PPG: evidence of third residue affecting b_2^+ fragment structure

J. Am. Soc. Mass Spectrom. **2017**, *28*, 1482 – 1488 - doi: [10.1007/s13361-017-1659-2](https://doi.org/10.1007/s13361-017-1659-2)

124. J.-A. Bendo, J. Martens, G. Berden, J. Oomens, T.H. Morton

Hydrogen liberation from gaseous 2-bora-1,3-diazacycloalkanium cations

J. Phys. Chem. A **2017**, *121*, 7910-7916 - doi: [10.1021/acs.jpca.7b07990](https://doi.org/10.1021/acs.jpca.7b07990)

125. Y. Zhu, H.A. Roy, N.A. Cunningham, S.F. Strobehn, J. Gao, M.U. Munshi, G. Berden, J. Oomens, M.T. Rodgers

IRMPD action spectroscopy, ER-CID experiments, and theoretical studies of sodium cationized thymidine and 5-methyluridine: kinetic trapping during ESI desolvation process preserves the solution structure of $[Thd+Na]^+$

J. Am. Soc. Mass Spectrom. **2017**, *28*, 2423-2437 - doi: [10.1007/s13361-017-1753-5](https://doi.org/10.1007/s13361-017-1753-5)

126. R.R. Wu, L.A. Hamlow, C.C. He, Y.W. Nei, G. Berden, J. Oomens, M.T. Rodgers

N3 and O2 protonated conformers of the cytosine mononucleotides coexist in the gas phase

J. Am. Soc. Mass Spectrom. **2017**, *28*, 1638-1646 - doi: [10.1007/s13361-017-1653-8](https://doi.org/10.1007/s13361-017-1653-8)

127. J. Oomens, G. Berden, J. Martens, T.H. Morton

Intramolecular proton transfer from one ether oxygen to another

Int. J. Mass Spectrom. **2017**, *418*, 188-192 - doi: [10.1016/j.ijms.2016.08.012](https://doi.org/10.1016/j.ijms.2016.08.012)

128. R.R. Wu, L.A. Hamlow, C.C. He, Y.-w. Nei, G. Berden, J. Oomens, M.T. Rodgers

The intrinsic basicity of the phosphate backbone exceeds that of uracil and thymine residues: protonation of the phosphate moiety is preferred over the nucleobase for pThd and pUrd

Phys. Chem. Chem. Phys. **2017**, *19*, 30351-30361 - doi: [10.1039/c7cp05521h](https://doi.org/10.1039/c7cp05521h)

129. J.R. Avilés-Moreno, G. Berden, J. Oomens, B. Martinez-Haya
Isolated complexes of the amino acid arginine with polyether and polyamine macrocycles, the role of proton transfer
Phys. Chem. Chem. Phys. **2017**, *19*, 31345-31351 - doi: [10.1039/c7cp04270a](https://doi.org/10.1039/c7cp04270a)
130. R.J. Abergel, W.A. de Jong, G.J.P. Deblonde, P.D. Dau, I. Captain, T.M. Eaton, J. Jian, M.J. van Stipdonk, J. Martens, G. Berden, J. Oomens, J.K. Gibson
Cleaving off uranyl oxygens through chelation: a mechanistic study in the gas phase
Inorg. Chem. **2017**, *56*, 12930-12937 - doi: [10.1021/acs.inorgchem.7b01720](https://doi.org/10.1021/acs.inorgchem.7b01720)
131. Y. Zhu, H.A. Roy, N.A. Cunningham, S.F. Strobehn, J. Gao, M.U. Munshi, G. Berden, J. Oomens, M.T. Rodgers
Effects of sodium cationization versus protonation on the conformations and N-glycosidic bond stabilities of sodium cationized Urd and dUrd: solution conformation of [Urd+Na]⁺ is preserved upon ESI
Phys. Chem. Chem. Phys. **2017**, *19*, 17637-17652 - doi: [10.1039/c7cp02377d](https://doi.org/10.1039/c7cp02377d)
132. R.C. Dunbar, J. Martens, G. Berden, J. Oomens,
Water Microsolvation Can Switch the Binding Mode of Ni(II) with Small Peptides
J. Phys. Chem. Lett. **2017**, *8*, 2634-2638 - doi: [10.1021/acs.jpcllett.7b0097](https://doi.org/10.1021/acs.jpcllett.7b0097)
133. J.R. Avilés-Moreno, F. Gámez, G. Berden, J. Oomens, B. Martinez-Haya
Isolated alkali cation complexes of the antibiotic ionophore nonactin: correlation with crystalline structures
Phys. Chem. Chem. Phys. **2017**, *19*, 14984-14991 - doi: [10.1039/c7cp02438j](https://doi.org/10.1039/c7cp02438j)
134. J. Martens, V. Koppen, G. Berden, F. Cuyckens, J. Oomens
Combined Liquid Chromatography-Infrared Ion Spectroscopy for Identification of Regioisomeric Drug Metabolites
Anal. Chem. **2017**, *89*, 4359-4362 - doi: [10.1021/acs.analchem.7b00577](https://doi.org/10.1021/acs.analchem.7b00577)
135. J. Oomens, G. Berden, T.H. Morton
Low-frequency CH stretch vibrations of free alkoxide ions
Angew. Chem. Int. Ed. **2017**, *56*, 217-220 - doi: [10.1002/anie.201609437](https://doi.org/10.1002/anie.201609437)
Angew. Chem. **2017**, *129*, 223-226 - doi: [10.1002/ange.201609437](https://doi.org/10.1002/ange.201609437)
136. G.C. Boles, C.J. Owen, G. Berden, J. Oomens, P.B. Armentrout
Experimental and theoretical investigations of infrared multiple photon dissociation spectra of glutamic acid complexes with Zn²⁺ and Cd²⁺
Phys. Chem. Chem. Phys. **2017**, *19*, 12394-12406 - doi: [10.1039/c7cp01786c](https://doi.org/10.1039/c7cp01786c)
137. J.R. Aviles-Moreno, G. Berden, J. Oomens, B. Martinez-Haya
Benchmark ditopic binding of Cl⁻ and Cs⁺ by the macrocycle hexacyclen
ChemPhysChem **2017**, *10*, 1324-1332 - doi: [10.1002/cphc.201700091](https://doi.org/10.1002/cphc.201700091)
138. Y. Zhu, L.A. Hamlow, C.C. He, J.K. Lee, J. Gao, G. Berden, J. Oomens, M.T. Rodgers
Gas-phase conformations and N-glycosidic bond stabilities of sodium cationized 2'-deoxyguanosine and guanosine: sodium cations preferentially bind to the guanine residue
J. Phys. Chem. B **2017**, *121*, 4048-4060 - doi: [10.1021/acs.jpcb.7b02906](https://doi.org/10.1021/acs.jpcb.7b02906)
139. M. Vala, J. Oomens, G. Berden
Structure and dissociation pathways of protonated tetralin (1,2,3,4-tetrahydronaphthalene)

- J. Phys. Chem. A **2017**, *121*, 4606-4612 - doi: [10.1021/acs.jpca.7b01858](https://doi.org/10.1021/acs.jpca.7b01858)
140. J. Oomens, G. Berden, J. Martens, T.H. Morton
Intramolecular proton transfer from one ether oxygen to another
Int. J. Mass Spectrom. **2017**, *418*, 188-192 - doi: [10.1016/j.ijms.2016.08.012](https://doi.org/10.1016/j.ijms.2016.08.012)
141. B. Schindler, L. Barnes, C.J. Gray, S. Chambert, S.L. Flitsch, J. Oomens, R. Daniel, A.R. Allouche, I. Compagnon
IRMPD Spectroscopy Sheds New (Infrared) Light on the Sulfate Pattern of Carbohydrates
J. Phys. Chem. A **2017**, *121*, 2114-2120 - doi: [10.1021/acs.jpca.6b11642](https://doi.org/10.1021/acs.jpca.6b11642)
142. A.J. de Haas, J. Oomens, J. Bouwman
Facile pentagon formation in the dissociation of polyaromatics
Phys. Chem. Chem. Phys. **2017**, *19*, 2974-2980 - doi: [10.1039/c6cp08349h](https://doi.org/10.1039/c6cp08349h)
143. K. Peckelsen, J. Martens, G. Berden, J. Oomens, R.C. Dunbar, A.J.H.M. Meijer, M. Schäfer
Gas-phase complexes of Ni²⁺ and Ca²⁺ with deprotonated histidylhistidine (HisHis): A model case for polyhistidyl-metal binding motifs
J. Mol. Spectrosc. **2017**, *332*, 38-44 - doi: [10.1016/j.jms.2016.10.008](https://doi.org/10.1016/j.jms.2016.10.008)
144. W.A. de Jong, P.D. Dau, R.E. Wilson, J. Marcalo, M.J. van Stipdonk, T.A. Corcovilos, G. Berden, J. Martens, J. Oomens, J.K. Gibson
Revealing Disparate Chemistries of Protactinium and Uranium. Synthesis of the Molecular Uranium Tetroxide Anion, UO₄⁻
Inorg. Chem. **2017**, *56*, 3686-3694 - doi: [10.1021/acs.inorgchem.7b00144](https://doi.org/10.1021/acs.inorgchem.7b00144)
145. G.C. Boles, R.A. Coates, G. Berden, J. Oomens, P.B. Armentrout
Experimental and theoretical investigations of infrared multiple photon dissociation spectra of asparagine complexes with Zn²⁺ and Cd²⁺ and their deamidation processes
J. Phys. Chem. B **2016**, *120*, 12486-12500 - doi: [10.1021/acs.jpcc.6b10326](https://doi.org/10.1021/acs.jpcc.6b10326)
146. R.C. Dunbar, J. Martens, G. Berden, J. Oomens
Complexes of Ni(II) and Cu(II) with small peptides: deciding whether to deprotonate
Phys. Chem. Chem. Phys. **2016**, *18*, 26923-26932 - doi: [10.1039/c6cp03974j](https://doi.org/10.1039/c6cp03974j)
147. J. Martens, J. Grzetic, G. Berden, J. Oomens
Structural identification of electron transfer dissociation products in mass spectrometry using infrared ion spectroscopy
Nature Commun. **2016**, *7*, 11754 - doi: [10.1038/ncomms11754](https://doi.org/10.1038/ncomms11754)
148. H. Alvaro Galue, J. Oomens, W.J. Buma, B. Redlich
Electron-flux infrared response to varying π -bond topology in charged aromatic monomers
Nature Commun. **2016**, *7*, 12633 - doi: [10.1038/ncomms12633](https://doi.org/10.1038/ncomms12633)
149. L.J.M. Kempkes, J. Martens, J. Grzetic, G. Berden, J. Oomens
Deamidation reactions of asparagine and glutamine-containing dipeptides investigated by ion spectroscopy
J. Am. Soc. Mass Spectrom. **2016**, *27*, 1855-1869 - doi: [10.1007/s13361-016-1462-5](https://doi.org/10.1007/s13361-016-1462-5)
150. E. Maltseva, A. Petrigani, A. Candian, C.J. Mackie, X. Huang, T.J. Lee, A.G.G.M. Tielens, J. Oomens, W.J. Buma

High-resolution IR absorption spectroscopy of polycyclic aromatic hydrocarbons in the 3 μm region: role of periphery

Astrophys. J. **2016**, 831, 58 - doi: [10.3847/0004-637X/831/1/58](https://doi.org/10.3847/0004-637X/831/1/58)

151. J. Martens, G. Berden, J. Oomens
Structures of fluoranthene reagent anions used in Electron Transfer Dissociation and Proton Transfer Reaction tandem mass spectrometry
Anal. Chem. **2016**, 88, 6126-6129 - doi: [10.1021/acs.analchem.6b01483](https://doi.org/10.1021/acs.analchem.6b01483)
152. J. Martens, G. Berden, C.R. Gebhardt, J. Oomens
Infrared ion spectroscopy in a modified quadrupole ion trap mass spectrometer at the FELIX free electron laser laboratory
Rev. Sci. Instrum. **2016**, 87, 103108 - doi: [10.1063/1.4964703](https://doi.org/10.1063/1.4964703)
153. P.D. Dau, D. Rios, Y. Gong, M.C. Michelini, J. Marçalo, D.K. Shuh, M. Mogannam, M.J. van Stipdonk, T.A. Corcovilos, J.K. Martens, G. Berden, J. Oomens, B. Redlich, J.K. Gibson
Synthesis and hydrolysis of uranyl, neptunyl, and plutonyl gas-phase complexes exhibiting discrete actinide-carbon bonds
Organometallics **2016**, 35, 1228-1240 - doi: [10.1021/acs.organomet.6b00079](https://doi.org/10.1021/acs.organomet.6b00079)
154. J. Gao, J. Bouwman, G. Berden, J. Oomens
The influence of metal ion binding on the IR spectra of nitrogen-containing PAHs
J. Phys. Chem. A **2016**, 120, 7800-7809 - doi: [10.1021/acs.jpca.6b05060](https://doi.org/10.1021/acs.jpca.6b05060)
155. P. Nieto, A. Günther, G. Berden, J. Oomens, O. Dopfer
IRMPD spectroscopy of metalated flavins: structure and bonding of lumiflavin complexes with alkali and coinage metal ions
J. Phys. Chem. A **2016**, 120, 8297-8308 - doi: [10.1021/acs.jpca.6b08281](https://doi.org/10.1021/acs.jpca.6b08281)
156. D.M. Kiawi, V. Chernyy, J. Oomens, W.J. Buma, Z. Jamshidi, L. Visscher, L.B.F.M. Waters, J.M. Bakker,
Water dissociation upon adsorption onto free iron clusters is size dependent
J. Phys. Chem. Lett. **2016**, 7, 2381-2387 - doi: [10.1021/acs.jpcllett.6b00891](https://doi.org/10.1021/acs.jpcllett.6b00891)
157. Y. Zhu, L.A. Hamlow, C.C. He, S.F. Strobehn, J.K. Lee, J. Gao, G. Berden, J. Oomens, M.T. Rodgers
Influence of sodium cationization versus protonation on the gas-phase conformations and glycosidic bond stabilities of 2'-deoxyadenosine and adenosine
J. Phys. Chem. B **2016**, 120, 8892-8904 - doi: [10.1021/acs.jpcb.6b06105](https://doi.org/10.1021/acs.jpcb.6b06105)
158. A. Petrigiani, M. Vala, J.R. Eyler, A.G.G.M. Tielens, G. Berden, A.F.G. van der Meer, B. Redlich, J. Oomens
Breakdown products of gaseous polycyclic aromatic hydrocarbons investigated with infrared ion spectroscopy
Astrophys. J. **2016**, 826, 33 - doi: [10.3847/0004-637X/826/1/33](https://doi.org/10.3847/0004-637X/826/1/33)
159. J. Gao, G. Berden, M.T. Rodgers, J. Oomens
*Interaction of Cu^+ with cytosine and formation of *i*-motif-like $\text{C}-\text{M}^+-\text{C}$ complexes: alkali versus coinage metals,*
Phys. Chem. Chem. Phys. **2016**, 18, 7269-7277 - doi: [10.1039/c6cp00234j](https://doi.org/10.1039/c6cp00234j)
160. J. Bouwman, A.J. de Haas, J. Oomens

Spectroscopic evidence for the formation of pentalene⁺ in the dissociative ionization of naphthalene

Chem. Commun. **2016**, 52, 2636-2638 - doi: [10.1039/c5cc10090a](https://doi.org/10.1039/c5cc10090a)

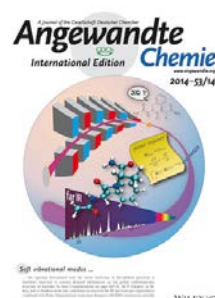
161. L.J.M. Kempkes, J.K. Martens, J. Grzetic, G. Berden, J. Oomens
Deamidation reactions of protonated asparagine and glutamine investigated by ion spectroscopy
Rapid Comm. Mass Spectrom. **2016**, 30, 483-490 - doi: [10.1002/rcm.7464](https://doi.org/10.1002/rcm.7464)
162. C.J. Mackie, A. Candian, X. Huang, E. Maltseva, A. Petrigani, J. Oomens, W.J. Buma, T.J. Lee, A.G.G.M. Tielens
The anharmonic quartic force field infrared spectra of five non-linear polycyclic aromatic hydrocarbons: Benz[a]anthracene, chrysene, phenanthrene, pyrene, and triphenylene
J. Chem. Phys. **2016**, 145, 084313 - doi: [10.1063/1.4961438](https://doi.org/10.1063/1.4961438)
163. M. Leslie, J. Kai-Chi Lau, J.T. Lawler, K.W.M. Siu, J. Oomens, G. Berden, A.C. Hopkinson, V. Ryzhov,
Alkali-metal-ion-assisted hydrogen atom transfer in the homocysteine radical
Chem. Eur. J. **2016**, 22, 2243-2246 - doi: [10.1002/chem.201504631](https://doi.org/10.1002/chem.201504631)
164. C.J. Shaffer, J. Martens, A. Marek, J. Oomens, F. Turecek
Photoleucine survives backbone cleavage by Electron Transfer Dissociation. A near-UV photodissociation and Infrared Multiphoton Dissociation action spectroscopy study
J. Am. Soc. Mass Spectrom. **2016**, 27, 1176-1185 - doi: [10.1007/s13361-016-1390-4](https://doi.org/10.1007/s13361-016-1390-4)
165. R.R. Wu, C.C. He, L.A. Hamlow, Y.-w. Nei, G. Berden, J. Oomens, M.T. Rodgers
Protonation induces base rotation of purine nucleotides pdGuo and pGuo
Phys. Chem. Chem. Phys. **2016**, 18, 15081-15090 - doi: [10.1039/c6cp01354f](https://doi.org/10.1039/c6cp01354f)
166. R.R. Wu, B. Yang, C.E. Frieler, G. Berden, J. Oomens, M.T. Rodgers,
2,4-Dihydroxy and O2 protonated tautomers of dThd and Thd coexist in the gas phase: methylation alters protonation preferences versus dUrd and Urd
J. Am. Soc. Mass Spectrom. **2016**, 26, 410-421 - doi: [10.1007/s13361-015-1303-y](https://doi.org/10.1007/s13361-015-1303-y)
167. S.X. Hu, J.K. Gibson, W.L. Li, M.J. van Stipdonk, J. Martens, G. Berden, B. Redlich, J. Oomens, J. Li
Electronic structure and characterization of a uranyl di-15-crown-5 complex with an unprecedented sandwich structure
Chem. Commun. **2016**, 52, 12761-12764 - doi: [10.1039/c6cc07205d](https://doi.org/10.1039/c6cc07205d)
168. C.J. Mackie, A. Candian, X. Huang, E. Maltseva, A. Petrigani, J. Oomens, W.J. Buma, T.J. Lee, A.G.G.M. Tielens
The anharmonic quartic force field infrared spectra of three polycyclic aromatic hydrocarbons: Naphthalene, anthracene, and tetracene
J. Chem. Phys. **2015**, 143, 224314 - doi: [10.1063/1.4936779](https://doi.org/10.1063/1.4936779)
169. E. Maltseva, A. Petrigani, A. Candian, C.J. Mackie, X. Huang, T.J. Lee, A.G.G.M. Tielens, J. Oomens, W.J. Buma
High-resolution IR absorption spectroscopy of polycyclic aromatic hydrocarbons: the realm of anharmonicity
Astrophys. J. **2015**, 814, 23 - doi: [10.1088/0004-637X/814/1/23](https://doi.org/10.1088/0004-637X/814/1/23)
170. D.M. Kiawi, J.M. Bakker, J. Oomens, W.J. Buma, Z. Jamshidi, L. Visscher, L.B.F.M. Waters
Water Adsorption on Free Cobalt Cluster Cations

- J. Phys. Chem. A **2015**, *119*, 10828-10837 - doi: [10.1021/acs.jpca.5b07119](https://doi.org/10.1021/acs.jpca.5b07119)
171. R.C. Dunbar, G. Berden, J.K. Martens, J. Oomens
Divalent Metal-Ion Complexes with Dipeptide Ligands Having Phe and His Side-Chain Anchors: Effects of Sequence, Metal Ion, and Anchor
J. Phys. Chem. A **2015**, *119*, 10828-10837 - doi: [10.1021/acs.jpca.5b06315](https://doi.org/10.1021/acs.jpca.5b06315)
172. S. Heiles, R.J. Cooper, G. Berden, J. Oomens, E.R. Williams
Hydrogen bond mediated stabilization of the salt bridge structure for the glycine dimer anion
Phys. Chem. Chem. Phys. **2015**, *17*, 30642-30647 - doi: [10.1039/c5cp06120b](https://doi.org/10.1039/c5cp06120b)
173. J. Oomens, G. Berden, T.H. Morton
Negative hyperconjugation versus electronegativity: vibrational spectra of free fluorinated alkoxide ions in the gas phase
ChemPhysChem **2015**, *16*, 1992-1995 - doi: [10.1002/cphc.201500177](https://doi.org/10.1002/cphc.201500177)
174. R. Spezia, J. Martens, J. Oomens, K. Song
Collision-induced dissociation pathways of protonated Gly₂NH₂ and Gly₃NH₂ in the short time-scale limit by chemical dynamics and ion spectroscopy
Int. J. Mass Spectrom. **2015**, *388*, 40-52 - doi: [10.1016/j.ijms.2015.07.025](https://doi.org/10.1016/j.ijms.2015.07.025)
175. W.L. Pearson, III, C. Contreras, D. Powell, G. Berden, J. Oomens, B. Bendiak, J.R. Eyler
Differentiation of Rubidiated Methyl-D-Glycoside Stereoisomers by Infrared Multiple-Photon Dissociation Spectroscopy in the O-H and C-H Stretching Regions
J. Phys. Chem. B **2015**, *119*, 12970-12981 - doi: [10.1021/acs.jpcc.5b06563](https://doi.org/10.1021/acs.jpcc.5b06563)
176. C.C. He, B. Kimutai, L. Hamlow, Y. Zhu, F. Strobehn, J. Gao, G. Berden, J. Oomens, C.S. Chow, M.T. Rodgers
Evaluation of Hybrid Theoretical Approaches for Structural Determination of a Glycine-Linked Cisplatin Derivative via Infrared Multiple Photon Dissociation (IRMPD) Action Spectroscopy
J. Phys. Chem. A **2015**, *119*, 10980-10987 - doi: [10.1021/acs.jpca.5b08181](https://doi.org/10.1021/acs.jpca.5b08181)
177. J. Bouwman, A. Bodi, J. Oomens, P. Hemberger
On the formation of cyclopentadiene in the C₃H₅[•] + C₂H₂ reaction
Phys. Chem. Chem. Phys. **2015**, *17*, 20508-20514 - doi: [10.1021/jp5121993](https://doi.org/10.1021/jp5121993)
178. R.R. Wu, B. Yang, C.E. Frieler, G. Berden, J. Oomens, M.T. Rodgers
N₃ and O₂ protonated tautomeric conformations of 2'-deoxycytidine coexist in the gas phase
J. Phys. Chem. B **2015**, *119*, 5773-5784 - doi: [10.1021/jp5130316](https://doi.org/10.1021/jp5130316)
179. J.K. Martens, J. Grzetic, G. Berden, J. Oomens
Gas-phase conformations of small polyprolines and their fragment ions by IRMPD spectroscopy
Int. J. Mass Spectrom. **2015**, *377*, 179-187 - doi: [10.1016/j.ijms.2014.07.027](https://doi.org/10.1016/j.ijms.2014.07.027)
180. J.K. Gibson, H.S. Hu, M.J. van Stipdonk, G. Berden, J. Oomens, J. Li
Infrared multiphoton dissociation spectroscopy of a gas-phase complex of uranyl and 3-oxa-glutaramide: an extreme red-shift of the [O=U=O]²⁺ asymmetric stretch
J. Phys. Chem. A **2015**, *119*, 3366-3374 - doi: [10.1021/jp512599e](https://doi.org/10.1021/jp512599e)
181. B. Mogesa, E. Perera, H.M. Rhoda, J.K. Gibson, G. Berden, M.J. van Stipdonk, V.N. Nemykin, P. Basu

Solution, Solid, and Gas Phase Studies on a Nickel Dithiolene System: Spectator Metal and Reactor Ligand

Inorg. Chem. **2015**, 54, 7703-7716

182. A.L. Patrick, C.N. Stedwell, B. Schindler, I. Compagnon, G. Berden, J. Oomens, N.C. Polfer
Insights into the fragmentation pathways of gas-phase protonated sulfoserine
Int. J. Mass Spectrom. **2015**, 379, 26-32
183. M.J. van Stipdonk, K. Patterson, J.K. Gibson, G. Berden, J. Oomens
IRMPD spectroscopy reveals a novel rearrangement reaction for modified peptides that involves elimination of the N-terminal amino acid
Int. J. Mass Spectrom. **2015**, 379, 165-178
184. M.R. Ligare, A.M. Rijs, G. Berden, M. Kabelac, D. Nachtigallova, J. Oomens, M.S. de Vries
Resonant infrared multiple photon dissociation spectroscopy of anionic nucleotide monophosphate complexes
J. Phys. Chem. B **2015**, 119, 7894-7901
185. C.M. Kaczan, A.I. Rathur, R.R. Wu, Y. Chen, C.A. Austin, G. Berden, J. Oomens, M.T. Rodgers
Infrared multiple photon dissociation action spectroscopy of sodium cationized halouracils: effects of sodium cationization and halogenation on gas-phase conformation
Int. J. Mass Spectrom. **2015**, 378, 76-85
186. H.U. Ung, K.T. Huynh, J.C. Poutsma, J. Oomens, G. Berden, T.H. Morton
Investigation of proton affinities and gas phase vibrational spectra of protonated nucleosides, deoxynucleosides, and their analogs
Int. J. Mass Spectrom. **2015**, 378, 294-302
187. T.M. Chang, G. Berden, J. Oomens, E.R. Williams
Halide anion binding to Gly₃, Ala₃ and Leu₃
Int. J. Mass Spectrom. **2015**, 377, 440-447
188. J. Bouwman, B. Sztaray, J. Oomens, P. Hemberger, A. Bodi
Dissociative photoionization of quinoline and isoquinoline
J. Phys. Chem. A, **2015**, 119, 1129-1136
189. R.R. Wu, B. Yang, G. Berden, J. Oomens, M.T. Rodgers
Gas-phase conformations and energetics of protonated 2'-deoxyadenosine and adenosine: IRMPD action spectroscopy and theoretical studies
J. Phys. Chem. B, **2015**, 119, 2795-2805
190. J. Gao, G. Berden, J. Oomens
Laboratory infrared spectroscopy of gaseous negatively charged polyaromatic hydrocarbons
Astrophys. J. **2014**, 787, 170
191. S. Jaeqx, J. Oomens, A. Cimas, M.-P. Gaigeot, A.M. Rijs
Gas-phase peptide structures unraveled by far-IR spectroscopy: Combining IR-UV ion-dip experiments with Born-Oppenheimer molecular dynamics simulations
Angew. Chem. Int. Ed. **2014**, 53, 3663-3666
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192. D. Morsa, V. Gabelica, F. Rosu, J. Oomens, E. de Pauw
Dissociation pathways of benzylpyridinium "thermometer" ions depend on the activation regime: an IRMPD spectroscopy study
J. Phys. Chem. Lett. **2014**, *5*, 3787-3791
193. J.D. Steill, A.L. May, S.R. Campagna, J. Oomens, R.N. Compton
Structure and stability of phenoxide and fluorophenoxide anions investigated with infrared multiple-photon dissociation and detachment spectroscopy and tandem mass spectrometry
J. Phys. Chem. A, **2014**, *118*, 8597-8605
194. M.C. Holland, G. Berden, J. Oomens, A.J.H.M. Meijer, M. Schäfer, R. Gilmour
Infrared multiphoton dissociation spectroscopic analysis of noncovalent interactions in organocatalysis
Eur. J. Org. Chem. **2014**, 5675-5680
195. M.J. van Stipdonk, P. Basu, S.A. Dille, J.K. Gibson, G. Berden, J. Oomens
Infrared multiple photon dissociation spectroscopy of a gas-phase oxo-molybdenum complex with 1,2-dithiolene ligands
J. Phys. Chem. A, **2014**, *118*, 5407-5418
196. R.R. Wu, B. Yang, G. Berden, J. Oomens, M.T. Rodgers
Gas-phase conformations and energetics of protonated 2'-deoxyguanosine and guanosine: IRMPD action spectroscopy and theoretical studies
J. Phys. Chem. B, **2014**, *118*, 14774-14784
197. J. Langer, A. Günther, S. Seidenbecher, G. Berden, J. Oomens, O. Dopfer
Probing protonation sites of isolated flavins using IR spectroscopy: from lumichrome to the cofactor flavin mononucleotide
ChemPhysChem **2014**, *15*, 2550-2562
198. A. Günther, P. Nieto, G. Berden, J. Oomens, O. Dopfer
IRMPD spectroscopy of metalated flavins: structure and bonding of M^{q+} -lumichrome complexes ($M^{q+} = Li^+ - Cs^+, Ag^+, Mg^{2+}$)
Phys. Chem. Chem. Phys. **2014**, *16*, 14161-14171
199. M.J. van Stipdonk, M.J. Kullman, G. Berden, J. Oomens
Infrared multiple-photon dissociation spectroscopy of deprotonated 6-hydroxynicotinic acid
Rapid Comm. Mass Spectrom. **2014**, *28*, 691-698
200. B. Yang, R.R. Wu, G. Berden, J. Oomens, M.T. Rodgers
Infrared multiple photon dissociation action spectroscopy of proton-bound dimers of cytosine and modified cytosines: effects of modifications on gas-phase conformations
J. Phys. Chem. B **2013**, *117*, 14191-14201
201. J. Zhao, J.K.-C. Lau, J. Grzetic, U.H. Verkerk, J. Oomens, K.W.M. Siu, A.C. Hopkinson
Structures of a_n^ ions derived from protonated pentaglycine and pentaalanine: results from IRMPD spectroscopy and DFT calculations*
J. Am. Soc. Mass Spectrom. **2013**, *24*, 1957-1968
202. J. Grzetic, J. Oomens

- Effect of the Asn side chain on the dissociation of deprotonated peptides elucidated by IRMPD spectroscopy*
Int. J. Mass Spectrom. **354-355**, 70-77 (2013)
203. R.C. Dunbar, G. Berden, J. Oomens
How does a small peptide choose how to bind a metal ion? IRMPD and computational survey of CS versus Iminol binding preferences
Int. J. Mass Spectrom. **354-355**, 356-364 (2013)
204. C.A. Austin, Y. Chen, C.M. Kazcan, G. Berden, J. Oomens, M.T. Rodgers
Infrared multiple photon dissociation action spectroscopy of alkali metal cation–cyclen complexes: Effects of alkali metal cation size on gas-phase conformation
Int. J. Mass Spectrom. **354-355**, 346-355 (2013)
205. J. Grzetic, J. Oomens
Spectroscopic identification of cyclic imide b_2 -ions from peptides containing Gln and Asn residues
J. Am. Soc. Mass Spectrom. **24**, 1228-1241 (2013)
206. Y.-w. Nei, K.T. Crampton, G. Berden, J. Oomens, M.T. Rodgers
Infrared multiple photon dissociation action spectroscopy of deprotonated RNA mononucleotides: gas-phase conformations and energetic
J. Phys. Chem. A **2013**, *117*, 10634-10649
207. S. Jaeqx, J. Oomens, A.M. Rijs
Gas-phase salt bridge interactions between glutamic acid and arginine
Phys. Chem. Chem. Phys. **2013**, *15*, 16341-16352
208. H.U. Ung, A.R. Moehlig, R.A. Kudla, L.J. Mueller, J. Oomens, G. Berden, T.H. Morton
Proton-bound dimers of 1-methylcytosine and its derivatives: vibrational and NMR spectroscopy
Phys. Chem. Chem. Phys. **2013**, *15*, 19001-19012
209. M. Demireva, J. Oomens, G. Berden, E.R. Williams
The ionic hydrogen/deuterium bonds between diammoniumalkane dications and halide anions
ChemPlusChem **2013**, *78*, 995-1004
210. S. Osburn, G. Berden, J. Oomens, K. Gulyuz, N.C. Polfer, R.A.J. O'Hair, V. Ryzhov
Structure and reactivity of the glutathione radical cation: radical rearrangement from the cysteine sulfur to the glutamic acid alpha-carbon atom
ChemPlusChem **2013**, *78*, 970-978
211. R.C. Dunbar, J. Oomens, G. Berden, J.K.C. Lau, U.H. Verkerk, A.C. Hopkinson, K.W.M. Siu
Metal ion complexes with HisGly: comparison with PhePhe and PheGly
J. Phys. Chem. A **2013**, *117*, 5335-5343
212. V.J.F. Lapoutre, B. Redlich, A.F.G. van der Meer, J. Oomens, J.M. Bakker, A. Sweeney, A. Mookherjee, P.B. Armentrout
Structures of the dehydrogenation products of methane activation by 5d transition metal cations
J. Phys. Chem. A **2013**, *117*, 4115-4126
213. B. Yang, R.R. Wu, N.C. Polfer, G. Berden, J. Oomens, M.T. Rodgers,
IRMPD action spectroscopy of alkali metal cation–cytosine complexes: effects of alkali metal cation size on gas phase conformation

- J. Am. Soc. Mass Spectrom. **2013**, *24*, 1523-1533
214. R.P. Dain, G. Gresham, G.S. Groenewold, J.D. Steill, J. Oomens, M.J. van Stipdonk
Infrared multiple photon dissociation spectroscopy of group I and group II metal complexes with Boc-hydroxylamine
Rapid Commun. Mass Spectrom. **2013**, *27*, 1867-1872
215. A. Piatkivskiy, S. Osburn, K. Jaderberg, J. Grzetic, J.D. Steill, J. Oomens, J.F. Zhao, J.K.C. Lau, U.H. Verkerk, A.C. Hopkinson, K.W.M. Siu, V. Ryzhov
Structure and reactivity of the distonic and aromatic radical cations of tryptophan
J. Am. Soc. Mass Spectrom. **2013**, *24*, 513-523
J. Am. Soc. Mass Spectrom. **2013**, *24*, 1620 - Erratum
216. R.J. Nieckarz, J. Oomens, G. Berden, P. Sagulenko, R. Zenobi
Infrared multiple photon dissociation (IRMPD) spectroscopy of oxazine dyes
Phys. Chem. Chem. Phys. **2013**, *15*, 5049-5056
217. S. Jaqx, W. Du, E.J. Meijer, J. Oomens, A.M. Rijs
Conformational Study of Z-Glu-OH and Z-Arg-OH: Dispersion Interactions versus Conventional Hydrogen Bonding
J. Phys. Chem. A **2013**, *117*, 1216-1227
218. Y.-w. Nei, N. Hallowita, J.D. Steill, J. Oomens, M.T. Rodgers
Infrared Multiple Photon Dissociation Action Spectroscopy of Deprotonated DNA Mononucleotides: Gas-Phase Conformations and Energetics
J. Phys. Chem. A **2013**, *117*, 1319-1335
219. R.C. Dunbar, J.D. Steill, N.C. Polfer, J. Oomens
Metal Cation Binding to Gas-Phase Pentaalanine: Divalent Ions Restructure the Complex
J. Phys. Chem. A **2013**, *117*, 1094-1101
220. S. Osburn, T. Burgie, G. Berden, J. Oomens, R.A.J. O'Hair, V. Ryzhov
Structure and Reactivity of Homocysteine Radical Cation in the Gas Phase Studied by Ion-Molecule Reactions and Infrared Multiple Photon Dissociation
J. Phys. Chem. A **2013**, *117*, 1144-1150
221. H.U. Ung, A.R. Moehlig, S. Khodaghlian, G. Berden, J. Oomens, T.H. Morton
Proton-Bridge Motions in Amine Conjugate Acid Ions Having Intramolecular Hydrogen Bonds to Hydroxyl and Amine Groups
J. Phys. Chem. A **2013**, *117*, 1360-1369
222. F. Gámez, P. Hurtado, A.R. Hortal, B. Martínez-Haya, G. Berden, J. Oomens
Cations in a Molecular Funnel: Vibrational Spectroscopy of Isolated Cyclodextrin Complexes with Alkali Metals
ChemPhysChem **2013**, *14*, 400-407
223. M. Almasian, J. Grzetic, G. Berden, B. Bakker, W.J. Buma, J. Oomens
Gas-phase infrared spectrum of the anionic GFP-chromophore
Int. J. Mass Spectrom. **2012**, *330-332*, 118-123 - doi: [10.1016/j.ijms.2012.08.017](https://doi.org/10.1016/j.ijms.2012.08.017)
224. U.H. Verkerk, J. Zhao, J. Kai-Chi Lau, T.-W. Lam, Q. Hao, J.D. Steill, C.-K. Siu, J. Oomens, A.C. Hopkinson, K.W.M. Siu

Structures of the a₂ ions of Ala-Ala-Ala and Phe-Phe-Phe
Int. J. Mass Spectrom. **2012**, 330-332, 254-261

225. R.C. Dunbar, N.C. Polfer, G. Berden, J. Oomens
Metal ion binding to peptides: Oxygen or nitrogen sites?
Int. J. Mass Spectrom. **2012**, 330-332, 71-77
226. C.S. Contreras, N. C. Polfer, J. Oomens, J.D. Steill, B. Bendiak, J.R. Eyler
On the path to glycan conformer identification: Gas-phase study of the anomers of methyl glycosides of N-acetyl-D-glucosamine and N-acetyl-D-galactosamine
Int. J. Mass Spectrom. **2012**, 330-332, 285-294
227. M. Citir, C.S. Hinton, J. Oomens, J.D. Steill, P.B. Armentrout
Infrared multiple photon dissociation spectroscopy of protonated histidine and 4-phenyl imidazole
Int. J. Mass Spectrom. **2012**, 330-332, 6-15
228. M. van Stipdonk, M. Kullman, G. Berden, J. Oomens
IRMPD and DFT study of the loss of water from protonated 2-hydroxynicotinic acid
Int. J. Mass Spectrom. **2012**, 330-332, 134-143
229. K.T. Crampton, A.I. Rathur, Y.-w. Nei, G. Berden, J. Oomens, M.T. Rodgers
Protonation preferentially stabilizes minor tautomers of the halouracils: IRMPD action spectroscopy and theoretical results
J. Am. Soc. Mass Spectrom. **2012**, 23, 1469-1478
230. M. Almasian, J. Grzetic, J. van Maurik, J.D. Steill, G. Berden, S. Ingemann, W.J. Buma, J. Oomens
Non-equilibrium isomer distribution of the gas-phase Photoactive Yellow Protein chromophore
J. Phys. Chem. Lett. **2012**, 3, 2259-2263 - doi: [10.1021/jz300780t](https://doi.org/10.1021/jz300780t)
231. R.C. Dunbar, J.D. Steill, N.C. Polfer, G. Berden, J. Oomens
Peptide bond tautomerization induced by divalent metal ions: characterization of the iminol configuration
Angew. Chem. Int. Ed. **2012**, 51, 4591-4593
Angew. Chem. **2012**, 124, 4669-4671
232. L. Brückmann, W. Tyrre, S. Mathur, G. Berden, J. Oomens, A.J.H.M. Meijer, M. Schäfer,
Examination of the coordination sphere of Al^{III} in trifluoromethyl-heteroarylalkenolato complex ions by gas-phase IRMPD spectroscopy and computational modeling
ChemPhysChem **2012**, 13, 2037-2045
233. R. Tonner, P. Schwerdtfeger, A.L. May, J.D. Steill, G. Berden, J. Oomens, S.R. Campagna, R.N. Compton,
Stability of gas-phase tartaric acid anions investigated by quantum chemistry, mass spectrometry and infrared spectroscopy
J. Phys. Chem. A **2012**, 116, 4789-4800
234. J. Grzetic, J. Oomens
Structure of anionic c-type peptide fragments elucidated by IRMPD spectroscopy
Int. J. Mass Spectrom. **2012**, 316-318, 216-226
235. S. Zou, J. Oomens, N.C. Polfer

Competition between diketopiperazine and oxazolone formation in water loss products from protonated ArgGly and GlyArg

Int. J. Mass Spectrom. **2012**, 316-318, 12-17

236. M.J. Kullman, S. Molesworth, G. Berden, J. Oomens, M. van Stipdonk
IRMPD spectroscopy of b_2 ions from protonated tripeptides with 4-aminomethyl benzoic acid residues
Int. J. Mass Spectrom. **2012**, 316-318, 174-181
237. P.Y.I. Shek, J.K.C. Lau, J. Zhao, J. Grzetic, U.H. Verkerk, J. Oomens, A.C. Hopkinson, K.W.M. Siu
Fragmentations of protonated cyclic-glycylglycine and cyclic-alanyllalanine
Int. J. Mass Spectrom. **2012**, 316-318, 199-205
238. U.H. Verkerk, J. Zhao, I.S. Saminathan, J.K.C. Lau, J. Oomens, A.C. Hopkinson, K.W.M. Siu
Infrared multiple-photon dissociation spectroscopy of tripositive ions: Lanthanum-tryptophan complexes
Inorg. Chem. **2012**, 51, 4707-4710
239. S. Osburn, G. Berden, J. Oomens, R.A.J. O'Hair, V. Ryzhov
S-to- α C radical migration in the radical cations of Gly-Cys and Cys-Gly
J. Am. Soc. Mass Spectrom. **2012**, 23, 1019-1023
240. P. Hurtado, F. Gámez, S. Hamad, B. Martinez-Haya, J.D. Steill, J. Oomens
Multipodal coordination of a tetracarboxylic crown ether with NH_4^+ : a vibrational spectroscopy and computational study
J. Chem. Phys. **2012**, 136, 114301
241. H. Alvaro Galué, J. Oomens
On the electronic structure of isolated mono-dehydrogenated polyaromatic hydrocarbon ions and their astrophysical relevance
Astrophys. J. **2012**, 746, 83
242. J. Grzetic, J. Oomens
Spectroscopic evidence for an oxazolone structure in anionic b-type peptide fragments
J. Am. Soc. Mass Spectrom. **2012**, 23, 290-300
243. O. Pirali, V. Boudon, J. Oomens, M. Vervloet
Rotationally resolved infrared spectroscopy of adamantane
J. Chem. Phys. **2012**, 136, 024310
244. M. Citir, C.S. Hinton, J. Oomens, J.D. Steill, P.B. Armentrout
Infrared multiple photon dissociation spectroscopy of cationized histidine: effects of metal cation size on gas-phase conformation
J. Phys. Chem. A **2012**, 116, 1532-1541
245. F. Gámez, P. Hurtado, S. Hamad, B. Martinez-Haya, G. Berden, J. Oomens
Tweezer-like complexes of crown ethers with divalent metals: probing cation-size-dependent conformations by vibrational spectroscopy in the gas phase
ChemPlusChem **2012**, 77, 118-123
246. M. Tirado, J. Rutters, X. Chen, A. Yeung, J. van Maarseveen, J.R. Eyler, G. Berden, J. Oomens, N.C. Polfer

- Disfavoring macrocycle b fragments by constraining torsional freedom: the "twisted" case of QWFGLM b₆*
J. Am. Soc. Mass Spectrom. **2012**, 23, 475-482
247. M. Thevis, S. Beuck, S. Höppner, A. Thomas, J. Held, M. Schäfer, J. Oomens, W. Schänzer
Structure elucidation of the diagnostic product ion at m/z 97 derived from androst-4-en-3-one-based steroids by ESI-CID and IRMPD spectroscopy
J. Am. Soc. Mass Spectrom. **2012**, 23, 537-546
248. J.M. Bakker, B. Redlich, A.F.G. van der Meer, J. Oomens
Infrared spectroscopy of gas-phase polycyclic aromatic hydrocarbon cations in the 10-50 μm spectral range
Astrophys. J. **2011**, 741, 74
249. G.J.O. Beran, E.L. Chronister, L.L. Daemen, A.R. Moehlig, L.J. Mueller, J. Oomens, A. Rice, D.R. Santiago-Dieppa, F.S. Tham, K. Theel, S. Yagmaei, T.H. Morton,
Vibrations of a chelated proton in a protonated tertiary diamine
Phys. Chem. Chem. Phys. **2011**, 13, 20380-20392
250. X. Chen, M. Tirado, J.D. Steill, J. Oomens, N.C. Polfer
Cyclic peptide as a reference for b ion structural analysis in the gas phase
J. Mass Spectrom. **2011**, 46, 1011-1015
251. J.D. Steill, J. Oomens
Spectroscopically resolved competition between dissociation and detachment from nitrobenzene radical anion
Int. J. Mass Spectrom. **2011**, 308, 239-252
252. G.S. Groenewold, M.J. van Stipdonk, J. Oomens, W.A. de Jong, M.E. McIlwain
The gas-phase bis-uranyl nitrate complex $[(\text{UO}_2)_2(\text{NO}_3)_5]^-$: Infrared spectrum and structure
Int. J. Mass Spectrom. **2011**, 308, 175-180
253. M. Vala, J. Szczepanski, J. Oomens
Formation of molecular hydrogen from protonated 9,10-dihydroanthracene: Is the ejected H₂ rotationally and vibrationally excited?
Int. J. Mass Spectrom. **2011**, 308, 181-190
254. Y.-w. Nei, T.E. Akinyemi, C.M. Kaczan, J.D. Steill, G. Berden, J. Oomens, M.T. Rodgers
Infrared multiple photon dissociation action spectroscopy of sodiated uracil and thiouracils: effects of thio keto-substitution on gas-phase conformation
Int. J. Mass Spectrom. **2011**, 308, 191-202
255. F. Gamez, P. Hurtado, B. Martinez-Haya, G. Berden, J. Oomens
Vibrational study of isolated 18-crown-6 ether complexes with alkaline-earth metal cations
Int. J. Mass Spectrom. **2011**, 308, 217-224
256. J. Oomens, T.H. Morton
Fluoronium metathesis and rearrangements of fluorine stabilized carbocations
Int. J. Mass Spectrom. **2011**, 308, 232-238
257. R.C. Dunbar, J. Oomens, G. Orlova, D.K. Bohme

IRMPD spectroscopic investigation of gas-phase complexes of deprotonated penicillin with Ba²⁺, Zn²⁺, Cd²⁺

Int. J. Mass Spectrom. **2011**, *308*, 330-337

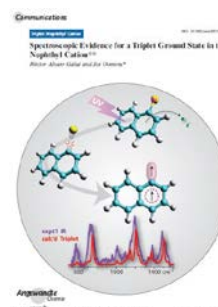
258. T.E. Hofstetter, C. Howder, G. Berden, J. Oomens, P.B. Armentrout
Structural elucidation of biological and toxicological complexes: investigation of monomeric and dimeric complexes of histidine with multiply charged transition metal (Zn and Cd) cations using IR action spectroscopy

J. Phys. Chem. B **2011**, *115*, 12648-12661

259. H. Alvaro Galué, J. Oomens
Spectroscopic evidence for a triplet ground state in the naphthyl cation
Angew. Chem. Int. Ed. **2011**, *50*, 7004-7007

Angew. Chem. **2011**, *123*, 7142-7145

VIP paper featured on inside journal cover



260. R.C. Dunbar, J.D. Steill, J. Oomens
Encapsulation of Metal Cations by the PhePhe Ligand: A Cation- π Ion Cage

J. Am. Chem. Soc. **2011**, *133*, 9376-9386

261. D.J. Brown, S.E. Stefan, G. Berden, J.D. Steill, J. Oomens, J.R. Eyler, B. Bendiak,
Direct evidence for the ring opening of monosaccharide anions in the gas phase: photodissociation of aldohexoses and aldohexoses derived from disaccharides using variable-wavelength infrared irradiation in the carbonyl stretch region

Carbohydrate Res. **2011**, *346*, 2469-2481

262. S. Osburn, G. Berden, J. Oomens, R.A.J. O'Hair, V. Ryzhov
Structure and reactivity of the N-acetyl cysteine radical cation: does radical migration occur?
J. Am. Soc. Mass Spectrom. **2011**, *22*, 1794-1803

263. B.S. Fales, N.O. Fujamade, J. Oomens, M.T. Rodgers
Infrared multiple photon dissociation action spectroscopy and theoretical studies of triethyl phosphate complexes: effects of protonation and sodium cationization on structure
J. Am. Soc. Mass Spectrom. **2011**, *22*, 1862-1871

264. H. Yao, J.D. Steill, J. Oomens, R.A. Jockusch
Infrared multiple photon dissociation action spectroscopy and computational studies of mass-selected gas-phase fluorescein and 2',7'-dichlorofluorescein ions
J. Phys. Chem. A **2011**, *115*, 9739-9747

265. A.R. Massah, F. Dreier, R.F.W. Jackson, B.T. Pickup, J. Oomens, A.J.H.M. Meijer, M. Schäfer,
Gas-phase study of new organozinc reagents by IRMPD-spectroscopy, computational modeling and tandem-MS
Phys. Chem. Chem. Phys. **2011**, *13*, 13255-13267

266. G.C.P. van Zundert, S. Jaeyx, G. Berden, J.M. Bakker, K. Kleiner, J. Oomens, A.M. Rijs
IR Spectroscopy of Isolated Neutral and Protonated Adenine and 9-Methyladenine
ChemPhysChem **2011**, *12*, 1921-1927

267. J. Oomens, T.H. Morton
Aldehyde and ketone adducts of the gaseous trifluoromethyl cation
Org. Lett. **2011**, *13*, 2176-2179

268. P. Hurtado, F. Gamez, S. Hamad, B. Martinez-Haya, J.D. Steill, J. Oomens
Crown ether complexes with H_3O^+ and NH_4^+ : proton localization and proton bridge formation
J. Phys. Chem. A **2011**, *115*, 7275-7282
269. J.L. Rummel, J.D. Steill, J. Oomens, C.S. Contreras, W.L. Pearson, J. Szczepanski, D.H. Powell, J.R. Eyler
Structural elucidation of Direct Analysis in Real Time ionized nerve agent simulants with infrared multiple photon dissociation spectroscopy
Anal. Chem. **2011**, *83*, 4045-4052
270. R.C. Dunbar, J.D. Steill, J. Oomens
Chirality-induced conformational preferences in peptide-metal ion binding revealed by IR spectroscopy
J. Am. Chem. Soc. **2011**, *133*, 1212-1215
271. T.E. Cooper, D.R. Carl, J. Oomens, J.D. Steill, P.B. Armentrout
Infrared Spectroscopy of Divalent Zinc and Cadmium Crown Ether Systems
J. Phys. Chem. A **2011**, *115*, 5408-5422
272. A.J. Ross, F. Dreiocker, M. Schäfer, J. Oomens, A.J.H.M. Meijer, B.T. Pickup, R.F.W. Jackson
Evidence for the role of tetramethylethylenediamine in aqueous Negishi cross-coupling: synthesis of nonproteogenic phenylalanine derivatives on water
J. Org. Chem. **2011**, *76*, 1727-1734
273. A. Lagutschenkov, J. Langer, G. Berden, J. Oomens, O. Dopfer
Infrared spectra of the protonated neurotransmitter histamine: competition between imidazolium and ammonium isomers in the gas phase
Phys. Chem. Chem. Phys. **2011**, *13*, 15644-15656
274. R.P. Dain, G. Gresham, G.S. Groenewold, J.D. Steill, J. Oomens, M.J. van Stipdonk
Infrared multiple-photon dissociation spectroscopy of group II metal complexes with salicylate
Rapid Commun. Mass Spectrom. **2011**, *25*, 1837-1846
275. U.H. Verkerk, J. Zhao, M.J. van Stipdonk, B.J. Bythell, J. Oomens, A.C. Hopkinson, K.W.M. Siu
Structure of the $[M + H - H_2O]^+$ Ion from tetraglycine: A revisit by means of density functional theory and isotope labeling
J. Phys. Chem. A **2011**, *115*, 6683-6687
276. J.S. Prell, T.M. Chang, J.A. Biles, G. Berden, J. Oomens, E.R. Williams
Isomer population analysis of gaseous ions from infrared multiple photon dissociation kinetics
J. Phys. Chem. A **2011**, *115*, 2745-2751
277. H. Alvaro Galué, C.A. Rice, J.D. Steill, J. Oomens
Infrared spectroscopy of ionized corannulene in the gas phase
J. Chem. Phys. **2011**, *134*, 054310
278. G. Giorgi, L. Ceraulo, G. Berden, J. Oomens, V.T. Liveri
Gas phase infrared multiple photon dissociation spectra of positively charged sodium bis(2-ethylhexyl)sulfosuccinate reverse micelle-like aggregates
J. Phys. Chem. B **2011**, *115*, 2282-2286

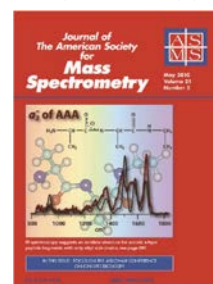
279. S. Osburn, J.D. Steill, J. Oomens, R.A.J. O'Hair, M. van Stipdonk, V. Ryzhov
Structure and reactivity of the cysteine methyl ester radical cation
Chem. Eur. J. **2011**, *17*, 873-879
280. J.D. Steill, J. Szczepanski, J. Oomens, J.R. Eyler, A. Brajter-Toth
Structural characterization by infrared multiple photon dissociation spectroscopy of protonated gas-phase ions obtained by electrospray ionization of cysteine and dopamine
Anal. Bioanal. Chem. **2011**, *399*, 2463-2473
281. B.S. Fales, N.O. Fujamade, Y.-w. Nei, J. Oomens, M.T. Rodgers
Infrared multiple photon dissociation action spectroscopy and theoretical studies of diethyl phosphate complexes: effects of protonation and sodium cationization on structure
J. Am. Soc. Mass Spectrom. **2011**, *22*, 81-92
282. A. Lagutschenkov, J. Langer, G. Berden, J. Oomens, O. Dopfer
Infrared spectra of protonated neurotransmitters: dopamine
Phys. Chem. Chem. Phys. **2011**, *13*, 2815-2823
283. J. Szczepanski, J. Oomens, J.D. Steill, M.T. Vala
H₂ ejection from polycyclic aromatic hydrocarbons: infrared multiphoton dissociation study of protonated acenaphthene and 9,10-dihydrophenanthrene
Astrophys. J. **2011**, *727*, 12
284. J. Oomens, A.R. Moehlig, T.H. Morton
Infrared multiple photon dissociation (IRMPD) spectroscopy of the proton-bound dimer of 1-methylcytosine in the gas phase
J. Phys. Chem. Lett. **2010**, *1*, 2891-2897
285. A. Lagutschenkov, J. Langer, G. Berden, J. Oomens, O. Dopfer
Infrared spectra of protonated neurotransmitters: serotonin
J. Phys. Chem. A **2010**, *132*, 13268-13276
286. O. Pirali, H. Alvaro Galué, J.E. Dahl, R.M.K. Carlson, J. Oomens
Infrared spectra and structures of diamantyl and triamantyl carbocations
Int. J. Mass Spectrom. **2010**, *297*, 55-62
287. M.K. Drayß, P.B. Armentrout, J. Oomens, M. Schäfer
IR spectroscopy of cationized aliphatic amino acids: Stability of charge-solvated structure increases with metal cation size
Int. J. Mass Spectrom. **2010**, *297*, 18-27
288. R.C. Dunbar, J.D. Steill, J. Oomens
Conformations and vibrational spectroscopy of metal-ion/polyalanine complexes
Int. J. Mass Spectrom. **2010**, *297*, 107-115
289. M. Citir, E.M.S. Stennett, J. Oomens, J.D. Steill, M.T. Rodgers, P.B. Armentrout
Infrared multiple photon dissociation spectroscopy of cationized cysteine: Effects of metal cation size on gas-phase conformation
Int. J. Mass Spectrom. **2010**, *297*, 9-17
290. J.T. O'Brien, J.S. Prell, G. Berden, J. Oomens, E.R. Williams
Effects of anions on the zwitterion stability of Glu, His and Arg investigated by IRMPD spectroscopy

and theory

Int. J. Mass Spectrom. **2010**, 297, 116-123

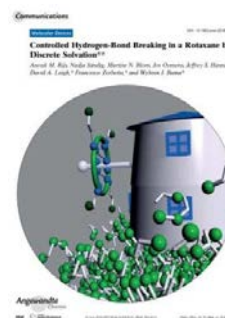
featured on journal cover

291. G.S. Groenewold, M.J. van Stipdonk, J. Oomens, W.A. de Jong, G.L. Gresham, M.E. McIlwain
Vibrational spectra of discrete UO_2^{2+} halide complexes in the gas phase
Int. J. Mass Spectrom. **2010**, 297, 67-75
292. C.S. Contreras, N.C. Polfer, A.C. Chung, J. Oomens, J.R. Eyler
Hydrogen/deuterium exchange of phenylalanine analogs studied with infrared multiple photon dissociation
Int. J. Mass Spectrom. **2010**, 297, 162-169
293. Y.-w. Nei, T.E. Akinyemi, J.D. Steill, J. Oomens, M.T. Rodgers
Infrared multiple photon dissociation action spectroscopy of protonated uracil and thiouracils: Effects of thio keto-substitution on gas-phase conformation
Int. J. Mass Spectrom. **2010**, 297, 139-151
294. R.C. Dunbar, J.D. Steill, J. Oomens
Cationized phenylalanine conformations characterized by IRMPD and computation for singly and doubly charged ions
Phys. Chem. Chem. Phys. **2010**, 12, 13383-13393
295. H. Alvaro Galué, O. Pirali, J. Oomens
Gas-phase infrared spectra of cationized nitrogen-substituted polycyclic aromatic hydrocarbons
Astron. Astrophys. **2010**, 517, A15
296. J. Oomens, J.D. Steill, T.H. Morton
IR spectra of boron-stabilized anions in the gas phase
Inorg. Chem. **2010**, 49, 6781-6783
297. A.M. Rijs, G. Ohanessian, J. Oomens, G. Meijer, G. von Helden, I. Compagnon
Internal proton transfer leading to stable zwitterionic structures in a neutral isolated peptide
Angew. Chem. Int. Ed. **2010**, 49, 2332-2335
Angew. Chem. **2010**, 122, 2382-2385
298. X. Li, J. Oomens, J.R. Eyler, D.T. Moore, S.S. Iyengar
Isotope dependent, temperature regulated, energy repartitioning in a low barrier, short-strong hydrogen bonded cluster
J. Chem. Phys. **2010**, 132, 244301
299. J. Oomens, T.H. Morton
Structures of products from positive ion-molecule reactions by means of vibrational spectroscopy
Eur. J. Mass Spectrom. **2010**, 16, 313-319
300. J. Oomens, J.D. Steill
The structure of deprotonated tri-alanine and its a_3^- fragment anion by IR spectroscopy
J. Am. Soc. Mass Spectrom. **2010**, 21, 698-706
featured on journal cover
301. G. Groenewold, W.A. de Jong, J. Oomens, M.J. van Stipdonk



Variable denticity in carboxylate binding to the uranyl coordination complexes
J. Am. Soc. Mass Spectrom. **2010**, *21*, 719-727

302. A.M. Rijs, N. Sändig, M.N. Blom, J. Oomens, J.S. Hannam, D.A. Leigh, F. Zerbetto, W.J. Buma
Controlled hydrogen-bond breaking in a rotaxane by discrete solvation
Angew. Chem. Int. Ed. **2010**, *49*, 3896-3900
Angew. Chem. **2010**, *122*, 3988-3992
featured on inside journal cover



303. B. Martinez-Haya, P. Hurtado, A.R. Hortal, S. Hamad, J.D. Steill, J. Oomens
Emergence of symmetry and chirality in crown ether complexes with alkali metal cations
J. Phys. Chem. A **2010**, *114*, 7048-7054

304. B.J. Bythell, R.P. Dain, S.S. Curtice, J. Oomens, J.D. Steill, G.S. Groenewold, B. Paizs, M.J. van Stipdonk
Structure of $[M + H - H_2O]^+$ from protonated tetraglycine revealed by tandem mass spectrometry and IRMPD spectroscopy
J. Phys. Chem. A **2010**, *114*, 5076-5082

305. S.P. Pali, C.S. Contreras, J.D. Steill, S.S. Pali, J. Oomens, J.R. Eyler
Triuret as a potential hypokalemic agent: structure characterization of triuret and triuret-alkali metal adducts by mass spectrometric techniques
Archiv. Biochem. Biophys. **2010**, *498*, 23-34
featured on journal cover



306. D.R. Carl, T.E. Cooper, J. Oomens, J.D. Steill, P.B. Armentrout
Infrared multiple photon dissociation spectroscopy of cationized methionine: effects of alkali-metal cation size on gas-phase conformation
Phys. Chem. Chem. Phys. **2010**, *12*, 3384-3398

307. F. Dreier, J. Oomens, A.J.H.M. Meijer, B.T. Pickup, R.F.W. Jackson, M. Schäfer
Structure elucidation of dimethylformamide-solvated alkylzinc cations in the gas phase
J. Org. Chem. **2010**, *75*, 1203-1213

308. P. Kupser, K. Pagel, J. Oomens, N. Polfer, B. Koksich, G. Meijer, G. von Helden
Amide-I and -II vibrations of the cyclic β -sheet model peptide Gramicidin S in the gas phase
J. Am. Chem. Soc. **2010**, *132*, 2085-2093

309. J.M. Bakker, V.J.F. Lapoutre, B. Redlich, J. Oomens, B.G. Sartakov, A. Fielicke, G. von Helden, G. Meijer, A.F.G. van der Meer
Intensity-resolved IR multiple photon ionization and fragmentation of C_{60}
J. Chem. Phys. **2010**, *132*, 074305

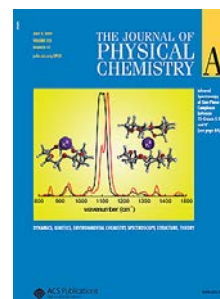
310. U.H. Verkerk, C.-K. Siu, J.D. Steill, H. El Aribi, J. Zhao, C.F. Rodriguez, J. Oomens, A.C. Hopkinson, K.W.M. Siu
 α_2 ion derived from triglycine: an N_1 -protonated 4-imidazolidinone
J. Phys. Chem. Lett. **2010**, *1*, 868-872

311. X. Chen, J.D. Steill, J. Oomens, N.C. Polfer

Oxazolone versus macrocycle structures for Leu-Enkephalin b₂-b₄: Insights from infrared multiple-photon dissociation spectroscopy and gas-phase hydrogen/deuterium exchange
J. Am. Soc. Mass Spectrom. **2010**, *21*, 1313-1321
featured on journal cover

312. S. Ard, N. Mirsaleh-Kohan, J.D. Steill, J. Oomens, S. Brøndsted Nielsen, R.N. Compton
Dissociation of dicarboxylate and disulfonate dianions
J. Chem. Phys. **2010**, *132*, 094301
313. R.P. Dain, C.M. Leavitt, J. Oomens, J.D. Steill, G.S. Groenewold, M.J. van Stipdonk
Infrared multiple photon dissociation spectroscopy of sodium and potassium chlorate anions
Rapid Comm. Mass Spectrom. **2010**, *24*, 232-238
314. J.S. Prell, T.G. Flick, J. Oomens, G. Berden, E.R. Williams
Coordination of trivalent metal cations to peptides: results from IRMPD spectroscopy and theory
J. Phys. Chem. A **2010**, *114*, 854-860
315. X. Chen, L. Yu, J.D. Steill, J. Oomens, N.C. Polfer
Effect of fragment size on the propensity of cyclization in collision-induced dissociation: oligoglycine b₂ – b₈
J. Am. Chem. Soc. **2009**, *131*, 18272-18282
316. J.D. Steill, J. Oomens
Gas-phase deprotonation of p-hydroxybenzoic acid investigated by IR spectroscopy: solution-phase structure is retained upon ESI
J. Am. Chem. Soc. **2009**, *131*, 13570-13571
317. N.C. Polfer, J. Oomens
Vibrational spectroscopy of bare and solvated ionic complexes of biological relevance
Mass Spectrom. Rev. **2009**, *28*, 468-494 - doi: [10.1002/mas.20215](https://doi.org/10.1002/mas.20215)
318. D. Zhao, J. Langer, J. Oomens, O. Dopfer
Infrared spectra of protonated polycyclic aromatic hydrocarbon molecules: azulene
J. Chem. Phys. **2009**, *131*, 184307
319. H. Knorke, J. Langer, J. Oomens, O. Dopfer
Infrared spectra of isolated protonated polycyclic aromatic hydrocarbon molecules
Astrophys. J. **2009**, *706*, L66-L70
320. S. Molesworth, C.M. Leavitt, G.S. Groenewold, J. Oomens, J.D. Steill, M. van Stipdonk
Spectroscopic evidence for mobilization of amide position protons during CID of model peptide ions
J. Am. Soc. Mass Spectrom. **2009**, *20*, 1841-1845
321. J.S. Prell, J.T. O'Brien, J.D. Steill, J. Oomens, E.R. Williams
Structures of protonated dipeptides: the role of arginine in stabilizing salt bridges
J. Am. Chem. Soc. **2009**, *131*, 11442-11449
322. G.S. Groenewold, C.M. Leavitt, R.P. Dain, J. Oomens, J.D. Steill, M.J. van Stipdonk
Infrared spectrum of potassium-cationized triethylphosphate generated using tandem mass spectrometry and infrared multiple photon dissociation
Rapid Commun. Mass Spectrom. **2009**, *23*, 2706-2710

323. R.C. Dunbar, J.D. Steill, N.C. Polfer, J. Oomens
Peptide length, steric effects, and ion solvation govern Zwitterion stabilization in barium-chelated di- and tripeptides
J. Phys. Chem. B **2009**, *113*, 10552-10554
324. R.C. Dunbar, A.C. Hopkinson, J. Oomens, C.-K. Siu, K.W.M. Siu, J.D. Steill, U.H. Verkerk, J. Zhao
Conformation switching in gas-phase complexes of histidine with alkaline earth ions
J. Phys. Chem. B **2009**, *113*, 10403-10408
325. M.K. Drayß, D. Blunk, J. Oomens, B. Gao, T. Wyttenbach, M.T. Bowers, M. Schäfer
Systematic study of potassiated tertiary amino acids: salt bridge structures dominate
J. Phys. Chem. A **2009**, *113*, 9543-9550
326. A.L. Heaton, V.N. Bowman, J. Oomens, J.D. Steill, P.B. Armentrout
Infrared multiple photon dissociation spectroscopy of cationized asparagine: effects of metal cation size on gas-phase conformation
J. Phys. Chem. A **2009**, *113*, 5519-5530
327. B. Martinez-Haya, P. Hurtado, A.R. Hortal, J.D. Steill, J. Oomens, P.J. Merkling
Spectroscopic investigation of the gas-phase conformations of 15-crown-5 ether complexes with K⁺
J. Phys. Chem. A **2009**, *113*, 7748-7752
featured on journal cover
328. J.D. Steill, J. Oomens
Action spectroscopy of gas-phase carboxylate anions by multiple photon IR electron detachment/attachment
J. Phys. Chem. A **2009**, *113*, 4941-4946
329. C.M. Leavitt, J. Oomens, R.P. Dain, J. Steill, G.S. Groenewold, M.J. van Stipdonk
IRMPD spectroscopy of anionic group II metal nitrate cluster ions
J. Am. Soc. Mass Spectrom. **2009**, *20*, 772-782
330. J.T. O'Brien, J.S. Prell, J.D. Steill, J. Oomens, E.R. Williams
Changes in the binding motif of protonated heterodimers containing valine and amines investigated using IRMPD spectroscopy between 800 and 3700 cm⁻¹ and theory
J. Am. Chem. Soc. **2009**, *131*, 3905-3912
331. R.C. Dunbar, J.D. Steill, N.C. Polfer, J. Oomens
Gas-phase infrared spectroscopy of the protonated dipeptides H⁺PheAla and H⁺AlaPhe compared to condensed-phase results
Int. J. Mass Spectrom. **2009**, *283*, 77-84
332. K. Pagel, P. Kupser, F. Bierau, N.C. Polfer, J.D. Steill, J. Oomens, G. Meijer, B. Kokschi, G. von Helden
Gas-phase IR spectra of intact α -helical coiled coil protein complexes
Int. J. Mass Spectrom. **2009**, *283*, 161-168
333. M. Vala, J. Szczepanski, J. Oomens, J.D. Steill
H₂ ejection from polycyclic aromatic hydrocarbons: infrared multiphoton dissociation study of protonated 1,2-dihydronaphthalene



J. Am. Chem. Soc. **2009**, *131*, 5784-5791

334. J. Oomens, J.D. Steill, B. Redlich

Gas-phase IR spectroscopy of deprotonated amino acids

J. Am. Chem. Soc. **2009**, *131*, 4310-4319 - doi: [10.1021/ja807615v](https://doi.org/10.1021/ja807615v)

335. A.M. Rijs, I. Compagnon, J. Oomens, J.S. Hannam, D.A. Leigh, W.J. Buma

Stiff and sticky at the right places: binding interactions in isolated mechanically interlocked molecules probed by mid-infrared spectroscopy

J. Am. Chem. Soc. **2009**, *131*, 2428-2429

336. M.K. Drayss, D. Blunk, J. Oomens, N. Polfer, C. Schmuck, B. Gao, T. Wyttenbach, M.T. Bowers, M. Schäfer

Gas-phase structures of solution-phase zwitterions: charge solvation or salt bridge?

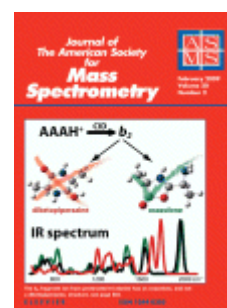
Int. J. Mass Spectrom. **2009**, *281*, 97-100

337. J. Oomens, S. Young, S. Molesworth, M. van Stipdonk

Spectroscopic evidence for an oxazolone structure of the b_2 fragment ion from protonated tri-alanine

J. Am. Soc. Mass Spectrom. **2009**, *20*, 334-339

featured on journal cover



338. J.S. Prell, M. Demireva, J. Oomens, E.R. Williams

Role of sequence in salt-bridge formation for alkali metal cationized GlyArg and ArgGly investigated with IRMPD spectroscopy and theory

J. Am. Chem. Soc. **2009**, *131*, 1232-1242

339. R.C. Dunbar, J.D. Steill, N.C. Polfer, J. Oomens

Dimeric complexes of tryptophan with M^{2+} metal ions

J. Phys. Chem. A **2009**, *113*, 845-851

340. M.F. Bush, J. Oomens, E.R. Williams

Proton affinity and zwitterion stability: new results from infrared spectroscopy and theory of cationized lysine and analogues in the gas phase

J. Phys. Chem. A **2009**, *113*, 431-438

341. J.D. Steill, J. Oomens, J.R. Eyler, R.N. Compton

Gas-phase infrared multiple photon dissociation spectroscopy of isolated SF_6^- and SF_5^- anions

J. Chem. Phys. **2008**, *129*, 244302

342. J. Steill, J. Zhao, C.-K. Siu, Y. Ke, U. Verkerk, J. Oomens, R.C. Dunbar, A.C. Hopkinson, K.W.M. Siu

Structure of the observable histidine radical cation in the gas phase: a captodative α -radical ion

Angew. Chem. Int. Ed. **2008**, *47*, 9666-9668

Angew. Chem. **2008**, *120*, 9812-9814

343. M.K. Drayss, D. Blunk, J. Oomens, M. Schäfer

Infrared multiple photon dissociation spectroscopy of potassiated proline

J. Phys. Chem. A **2008**, *112*, 11972-11974

344. P. Kupser, J.D. Steill, J. Oomens, G. Meijer, G. von Helden,

IR spectroscopy of gas-phase C_{60}^-

Phys. Chem. Chem. Phys. **2008**, *10*, 6862-6866

345. T.D. Vaden, S.A.N. Gowers, T.S.J.A. de Boer, J.D. Steill, J. Oomens, L.C. Snoek
Conformational preferences of an amyloidogenic peptide: IR spectroscopy of Ac-VQIVYK-NHMe
J. Am. Chem. Soc. **2008**, *130*, 14640-14650 - doi: [10.1021/ja804213s](https://doi.org/10.1021/ja804213s)
346. J. Oomens, E. Kraka, M.K. Nguyen, T.H. Morton
Structure, vibrational spectra, and unimolecular dissociation of gaseous 1-fluoro-1-phenethyl cations
J. Phys. Chem. A **2008**, *112*, 10774-10783 - doi: [10.1021/jp804706z](https://doi.org/10.1021/jp804706z)
347. J.T. O'Brien, J.S. Prell, J.D. Steill, J. Oomens, E.R. Williams
Interactions of mono- and divalent metal ions with aspartic and glutamic acid investigated with IR photodissociation spectroscopy and theory
J. Phys. Chem. A **2008**, *112*, 10823-10830 - doi: [10.1021/jp805787e](https://doi.org/10.1021/jp805787e)
348. M.F. Bush, J. Oomens, R.J. Saykally, E.R. Williams
Alkali metal ion binding to glutamine and glutamine derivatives investigated by infrared action spectroscopy and theory
J. Phys. Chem. A **2008**, *112*, 8578-8584
349. A. Simon, C. Joblin, N. Polfer, J. Oomens
Infrared spectroscopy of $[XFeC_{24}H_{12}]^+$ ($X = C_5H_5, C_5(CH_3)_5$) complexes in the gas phase: Experimental and computational studies of astrophysical interest
J. Phys. Chem. A **2008**, *112*, 8551-8560
350. M.F. Bush, J. Oomens, R.J. Saykally, E.R. Williams
Effects of alkaline earth metal ion complexation on amino acid zwitterion stability: Results from infrared action spectroscopy
J. Am. Chem. Soc. **2008**, *130*, 6463-6471 - doi: [10.1021/ja711343q](https://doi.org/10.1021/ja711343q)
351. J. Oomens, J.D. Steill,
Free carboxylate stretching modes
J. Phys. Chem. A **2008**, *112* 3281-3283 - doi: [10.1021/jp801806e](https://doi.org/10.1021/jp801806e)
352. G.S. Groenewold, M.J. van Stipdonk, W.A. de Jong, J. Oomens, G.L. Gresham, M.E. McIlwain, Da Gao, B. Siboulet, L. Visscher, M. Kullman, N. Polfer,
Infrared spectroscopy of dioxouranium(V) complexes with solvent molecules: effect of reduction
ChemPhysChem **2008**, *9*, 1278-1285
353. M.J. van Stipdonk, D.R. Kersetter, C.M. Leavitt, G.S. Groenewold, J.D. Steill, J. Oomens,
Spectroscopic investigation of H atom transfer in a gas-phase dissociation reaction: McLafferty rearrangement of model gas-phase peptide ions
Phys. Chem. Chem. Phys. **2008**, *10*, 3209-3221 - doi: [10.1039/b802314j](https://doi.org/10.1039/b802314j)
354. J. Oomens, L. Myers, R. Dain, C. Leavitt, V. Pham, G. Gresham, G. Groenewold, M. van Stipdonk,
Infrared multiple-photon photodissociation of gas-phase group II metal-nitrate anions
Int. J. Mass Spectrom. **2008**, *273*, 24-30 - doi: [10.1016/j.ijms.2008.02.013](https://doi.org/10.1016/j.ijms.2008.02.013)
355. N.C. Polfer, J. Oomens, R.C. Dunbar,
Alkali metal complexes of the dipeptides PheAla and AlaPhe: IRMPD spectroscopy

ChemPhysChem **2008**, *9*, 579-589

356. J. Oomens, T.H. Morton,
The cationic C=F⁺ stretching vibration in the gas phase
Angew. Chem. Int. Ed. **2008**, *47*, 2106-2108
Angew. Chem. **2008**, *120*, 2136-2138
357. P.B. Armentrout, M.T. Rodgers, J. Oomens, J.D. Steill
Infrared multiphoton dissociation spectroscopy of cationized serine: effects of alkali-metal cation size on gas-phase conformation
J. Phys. Chem. A **2008**, *112*, 2248-2257
358. M.T. Rodgers, P.B. Armentrout, J. Oomens, J.D. Steill
Infrared multiphoton dissociation spectroscopy of cationized threonine: effects of alkali-metal cation size on gas-phase conformation
J. Phys. Chem. A **2008**, *112*, 2258-2267
359. G. von Helden, I. Compagnon, M.N. Blom, M. Frankowski, U. Erlekam, J. Oomens, B. Brauer, R.B. Gerber, G. Meijer
Mid-IR spectra of different conformers of phenylalanine in the gas phase
Phys. Chem. Chem. Phys. **2008**, *10*, 1248-1256
360. G.S. Groenewold, J. Oomens, W.A. de Jong, G.L. Gresham, M.E. McIlwain, M.J. van Stipdonk
Vibrational spectroscopy of anionic nitrate complexes of UO₂²⁺ and Eu³⁺ in the gas phase
Phys. Chem. Chem. Phys. **2008**, *10*, 1192-1202
361. G.S. Groenewold, A.K. Gianotto, M.E. McIlwain, M.J. van Stipdonk, M. Kullman, D.T. Moore, N. Polfer, J. Oomens, I. Infante, L. Visscher, B. Siboulet, W.A. de Jong
Infrared spectroscopy of discrete uranyl anion complexes
J. Phys. Chem. A **2008**, *112*, 508-521
362. R.C. Dunbar, N.C. Polfer, J. Oomens
Gas-phase zwitterion stabilization by a metal dication
J. Am. Chem. Soc., **129** 14562-14563 (2007)
363. M.W. Forbes, M.F. Bush, N.C. Polfer, J. Oomens, R.C. Dunbar, E.R. Williams, R.A. Jockusch
Infrared spectroscopy of arginine cation complexes: direct observation of gas-phase zwitterions
J. Phys. Chem. A, **111** 11759-11770 (2007)
364. M.N. Blom, I. Compagnon, N.C. Polfer, G. von Helden, G. Meijer, S. Suhai, B. Paizs, J. Oomens
Stepwise solvation of an amino acid: the appearance of zwitterionic structures
J. Phys. Chem. A, **111** 7309-7316 (2007)
365. A. Abo-Riziq, B.O. Crews, I. Compagnon, J. Oomens, G. Meijer, G. von Helden, M. Kabelac, P. Hobza, M.S. de Vries
The mid-IR spectra of 9-ethyl guanine, guanosine, and 2-deoxyguanosine
J. Phys. Chem. A, **111** 7529-7536 (2007)
366. M.F. Bush, M.W. Forbes, R.A. Jockusch, J. Oomens, N.C. Polfer, R.J. Saykally, E.R. Williams
Infrared spectroscopy of cationized lysine and ε-N-methyllysine in the gas phase: Effects of alkali-metal ion size and proton affinity

- J. Phys. Chem. A, **111** 7753-7760 (2007)
367. N.C. Polfer, J. Oomens
Reaction products in mass spectrometry elucidated with infrared spectroscopy (invited)
Phys. Chem. Chem. Phys. **9** 3804-3817 (2007)
368. O. Pirali, M. Vervloet, J.E. Dahl, R.M.K. Carlson, A.G.G.M. Tielens, J. Oomens
Infrared spectroscopy of diamondoid molecules: New insights into the presence of nanodiamonds in the interstellar medium
Astrophys. J. **661** 919-925 (2007)
369. N.C. Polfer, J. Oomens, S. Suhai, B. Paizs
Infrared spectroscopy and theoretical studies of gas-phase protonated Leu-enkephalin and its fragments: Direct experimental evidence for the mobile proton
J. Am. Chem. Soc. **129** 5887-5897 (2007)
370. R.C. Dunbar, D.T. Moore, J. Oomens
IR spectroscopic characterization of intermediates in a gas-phase ionic reaction: The decarbonylation of Co⁺(acetophenone)
Int. J. Mass Spectrom. **265** 182-186 (2007)
371. N.C. Polfer, R.C. Dunbar, J. Oomens
Observation of zwitterion formation in the gas-phase H/D exchange with CH₃OD: Solution-phase structures in the gas phase
J. Am. Soc. Mass Spectrom. **18** 512-516 (2007)
372. G.S. Groenewold, A.K. Gianotto, K.C. Cossel, M.J. van Stipdonk, J. Oomens, N. Polfer, D.T. Moore, W.A. de Jong, M.E. McIlwain
Mid-infrared vibrational spectra of discrete acetone-ligated cerium hydroxide cations
Phys. Chem. Chem. Phys. **9** 596-606 (2007)
373. J. Szczepanski, H. Wang, M. Vala, A.G.G.M. Tielens, J.R. Eyler, J. Oomens
Infrared spectroscopy of gas-phase complexes of Fe⁺ and polycyclic aromatic hydrocarbon molecules
Astrophys. J. **646** 666-680 (2006)
374. J. Oomens, B.G. Sartakov, G. Meijer, G. von Helden
Gas-phase infrared multiple photon dissociation spectroscopy of mass-selected molecular ions (Review)
Int. J. Mass Spectrom. **254** 1-19 (2006) - doi: [10.1016/j.ijms.2006.05.009](https://doi.org/10.1016/j.ijms.2006.05.009)
375. R.C. Dunbar, D.T. Moore, J. Oomens
IR-spectroscopic characterization of acetophenone complexes with Fe⁺, Co⁺, and Ni⁺ using free-electron-laser IRMPD
J. Phys. Chem. A, **110** 8316-8326 (2006)
376. J. Oomens, N. Polfer, O. Pirali, Y. Ueno, R. Maboudian, P.W. May, J. Filik, J.E. Dahl, S. Liu, R.M. Carlson
Infrared spectroscopic investigation of higher diamondoids
J. Mol. Spectrosc. **238** 158-167 (2006)

377. N.C. Polfer, J. Oomens, R.C. Dunbar
IRMPD spectroscopy of metal-ion/tryptophan complexes
Phys. Chem. Chem. Phys. **8** 2744-2751 (2006)
378. G.S. Groenewold, A.K. Gianotto, K.C. Cossel, M.J. van Stipdonk, D.T. Moore, N. Polfer, J. Oomens, W.A. de Jong, L. Visscher
Vibrational spectroscopy of mass-selected $[UO_2(\text{ligand})_n]^{2+}$ complexes in the gas phase: comparison with theory
J. Am. Chem. Soc. **128** 4802-4813 (2006)
379. J. Oomens, G. Meijer, G. von Helden
An infrared spectroscopic study of protonated an cationic indazole
Int. J. Mass Spectrom. **249-250** 199-205 (2006) - doi: [10.1016/j.ijms.2005.12.034](https://doi.org/10.1016/j.ijms.2005.12.034)
380. I. Compagnon, J. Oomens, G. Meijer, G. von Helden
Mid-infrared spectroscopy of protected peptides in the gas phase: a probe of the backbone conformation
J. Am. Chem. Soc. **128** 3592-3597 (2006)
381. N.C. Polfer, J.J. Valle, D.T. Moore, J. Oomens, J.R. Eyler, B. Bendiak
Differentiation of isomers by wavelength-tunable infrared multiple-photon dissociation-mass spectrometry: application to glucose-containing disaccharides
Anal. Chem. **78** 670-679 (2006)
382. N.C. Polfer, J. Oomens, D.T. Moore, G. von Helden, G. Meijer, R.C. Dunbar
Infrared spectroscopy of phenylalanine Ag(I) and Zn(II) complexes in the gas phase
J. Am. Chem. Soc. **128** 517-525 (2006)
383. N.C. Polfer, J. Oomens, S. Suhai, B. Paizs
Spectroscopic and theoretical evidence for oxazolone ring formation in collision-induced dissociation in peptides
J. Am. Chem. Soc. **127** 17154-17155 (2005) - doi: [10.1021/ja056553x](https://doi.org/10.1021/ja056553x)
384. P. Çarçalı, R.A. Jockusch, I. Hünig, L.C. Snoek, R.T. Kroemer, B.G. Davis, D.P. Gamblin, I. Compagnon, J. Oomens, J.P. Simons
Hydrogen bonding and cooperativity in isolated and hydrated sugars: mannose, galactose, glucose, and lactose
J. Am. Chem. Soc. **127** 11414-11425 (2005)
385. N.C. Polfer, B. Paizs, L.C. Snoek, I. Compagnon, S. Suhai, G. Meijer, G. von Helden, J. Oomens,
Infrared fingerprint spectroscopy and theoretical studies of potassium ion tagged amino acids and peptides in the gas phase
J. Am. Chem. Soc. **127** 8571-8579 (2005)
386. D.T. Moore, J. Oomens, J.R. Eyler, G. von Helden, G. Meijer, R.C. Dunbar,
Infrared spectroscopy of gas-phase Cr^+ coordination complexes: determination of binding sites and electronic states
J. Am. Chem. Soc. **127** 7243-7254 (2005)
387. J. Oomens, N. Polfer, D.T. Moore, L. van der Meer, A.G. Marshall, J.R. Eyler, G. Meijer, G. von Helden,
Charge-state resolved mid-infrared spectroscopy of a gas-phase protein

Phys. Chem. Chem. Phys. **7** 1345-1348 (2005) - doi: [10.1039/B502322J](https://doi.org/10.1039/B502322J)

388. J.J. Valle, J.R. Eyler, J. Oomens, D.T. Moore, A.F.G. van der Meer, G. von Helden, G. Meijer, C.L. Hendrickson, A.G. Marshall, G.T. Blakney,
Free electron laser-Fourier transform ion cyclotron resonance mass spectrometry facility for obtaining infrared multiphoton dissociation spectra of gaseous ions
Rev. Sci. Instrum. **76** 023103 (2005)
389. I. Compagnon, J. Oomens, J. Bakker, G. Meijer, G. von Helden,
Vibrational spectroscopy of a non-aromatic amino acid based model peptide: identification of the γ -turn motif of the peptide backbone
Phys. Chem. Chem. Phys. **7** 13-15 (2005)
390. N. Polfer, B.G. Sartakov, J. Oomens
The infrared spectrum of the adamantyl cation
Chem. Phys. Lett. **400** 201-205 (2004) - doi: [10.1016/j.cplett.2004.10.108](https://doi.org/10.1016/j.cplett.2004.10.108)
391. D.T. Moore, J. Oomens, J.R. Eyler, G. Meijer, G. von Helden, D.P. Ridge
Gas-phase IR spectroscopy of anionic iron carbonyl clusters
J. Am. Chem. Soc. **126** 14726-14727 (2004)
392. J. Oomens, G. von Helden, G. Meijer,
Infrared photodissociation spectroscopy of the benzoic acid radical cation in a quadrupole trap
J. Phys. Chem. A, **108** 8273-8278 (2004)
393. J. Oomens, D.T. Moore, G. von Helden, G. Meijer, R.C. Dunbar,
The site of Cr^+ attachment to gas-phase aniline from infrared spectroscopy
J. Am. Chem. Soc. **126** 724-725 (2004)
394. D.T. Moore, J. Oomens, L. van der Meer, G. von Helden, G. Meijer, J. Valle, A.G. Marshall, J.R. Eyler,
Probing the vibrations of shared, OH^+O -bound protons in the gas phase,
ChemPhysChem, **5** 740-743 (2004)
395. J. Oomens, D.T. Moore, G. Meijer, G. von Helden,
Infrared multiple photon dissociation dynamics and spectroscopy of cationic PABA and its dehydroxylated fragment ion,
Phys. Chem. Chem. Phys. **6** 710-718 (2004)
396. J. Oomens, A.G.G.M. Tielens, B.G. Sartakov, G. von Helden, G. Meijer,
Laboratory infrared spectroscopy of cationic polycyclic aromatic hydrocarbon molecules
Astrophys. J. **591** 968-985 (2003) - doi: [10.1086/375515](https://doi.org/10.1086/375515)
397. J. Banisaukas, J. Szczepanski, J. Eyler, M. Vala, S. Hirata, M. Head-Gordon, J. Oomens, G. Meijer, G. von Helden
Vibrational and electronic spectroscopy of acenaphthylene and its cation
J. Phys. Chem. A, **107** 782-793 (2003)
398. J. Oomens, J.M. Bakker, B. G. Sartakov, G. Meijer and G. von Helden,
The Infrared Spectrum of the Benzoyl Cation,
Chem. Phys. Lett. **367** 576-580 (2003)

399. J. Oomens, G. von Helden and G. Meijer
Experimental Observation of Laser-induced Coherent Ion Motion in a Quadrupole Trap
Int. J. Mass Spectrom. **221** 163-176 (2002)
400. J. Oomens, B.G. Sartakov, A.G.G.M. Tielens, G. Meijer and G. von Helden,
Gas Phase Infrared Spectrum of the Coronene Cation,
Astrophys. J. Lett. **560** L99-L103 (2001)
401. J. Oomens, G. Meijer and G. von Helden,
Gas Phase Infrared Spectroscopy of Cationic Indane, Acenaphthene, Fluorene, and Fluoranthene,
J. Phys. Chem. A, **105** 8302-8309 (2001)
402. M. Kunze, J. Reuss, J. Oomens and D.H. Parker,
IR Excitation of Ethylene Molecules and Clusters Embedded in ⁴He Droplets,
J. Chem. Phys. **114** 9463-9469 (2001)
403. J.A. Piest, J. Oomens, J. Bakker, G. von Helden and G. Meijer,
Vibrational Spectroscopy of Gas-Phase Neutral and Cationic Phenanthrene in their Electronic Ground States,
Spectrochim. Acta A, **57** 717-735 (2001)
404. J. Oomens, S.T. Persijn, D.H. Parker, F.H.M. Harren
The Onset of Fermentation: Real-Time Measurements and Model Calculation of Ethanol and Acetaldehyde Emission,
Acta Horticulturae (ISHS), **553** 505-506 (2001)
405. M. Kunze, J. Reuss, J. Oomens, F. Harren and D.H. Parker,
Evidence for a Cage Effect in Superfluid Helium Droplets,
Z. Phys. Chem. **214** 1209-1212 (2000)
406. J. Oomens, A.J.A. van Roij, G. Meijer and G. von Helden,
Gas Phase Infrared Photodissociation Spectroscopy of Cationic Polyaromatic Hydrocarbons,
Astrophys. J. **542** 404-410 (2000)
407. S.T. Persijn, R.H. Veltman, J. Oomens, F.J.M. Harren and D.H. Parker,
CO Laser Absorption Coefficients for Gases of Biological Relevance: H₂O, CO₂, Ethanol, Acetaldehyde and Ethylene,
Appl. Spectrosc. **54** 62-71 (2000)
408. B.A. Paldus, T.G. Spence, R.N. Zare, J. Oomens, F.J.M. Harren, D.H. Parker, C. Gmachl, F. Capasso, D.L. Sivco, J.N. Baillargeon, A.L. Hutchinson and A.Y. Cho,
Photoacoustic Spectroscopy Using Quantum-Cascade Lasers,
Opt. Lett. **24** 178-180 (1999)
409. J. Oomens, H. Zuckermann, S. Persijn, D.H. Parker and F.J.M. Harren,
CO-Laser Based Photoacoustic Trace Gas Detection; Applications in Postharvest Physiology,
Appl. Phys. B, **67** 459-466 (1998)
410. J. Oomens and J. Reuss,
Tricky IR Monomer Spectroscopy in Planar Molecular Jets,
Israel J. Chem. **37** 367-378 (1997)

411. B.G. Sartakov, J. Oomens, J. Reuss and A. Fayt,
Interaction of Vibrational Fundamental and Combination States of Ethylene in the 3 μm Region,
J. Mol. Spectrosc. **185** 31-47 (1997)
412. J. Oomens, J. Reuss, G.C. Mellau, S. Klee, I. Gulaczyk and A. Fayt,
The Ethylene Hot Band Spectrum near 3000 cm^{-1} ,
J. Mol. Spectrosc. **180** 236-248 (1996)
413. J. Oomens and J. Reuss,
The $\nu_7+\nu_9 \leftarrow \nu_9$ Hot Band in Ethane,
J. Mol. Spectrosc. **177** 19-28 (1996)
414. J. Oomens and J. Reuss,
The $\nu_1+\nu_{10} \leftarrow \nu_{10}$ Hot Band in Propyne Studied in a Bimolecular Seeded Jet,
Chem. Phys. Lett. **250** 217-225 (1996)
415. J. Oomens and J. Reuss,
Hot Band Spectroscopy of Acetylene after Intermolecular Vibrational Energy Transfer from Ethylene,
J. Mol. Spectrosc. **173** 14-24 (1995)
416. J. Oomens, L. Oudejans, J. Reuss and A. Fayt,
The $\nu_7+\nu_9 \leftarrow \nu_7$ Hot Band in Ethylene Studied by Double Resonance Techniques,
Chem. Phys. **187** 57-72 (1994)
417. D. Consalvo, J. Oomens, D.H. Parker and J. Reuss,
DABCO: an Investigation of the Vibrational Structure of the S_0 and S_1 State through Two-Photon LIF Measurements,
Chem. Phys. **163** 223-239 (1992)

National journals

1. J. Oomens, J. Palotás, J. Martens, G. Berden
Het infraroodspectrum van geprotoneerd buckminsterfullereen
Nederlands Tijdschrift voor Natuurkunde, **2020**, 35-37
2. N. Polfer, J. Oomens
Het lot van eiwitten in een massaspectrometer
Nederlands Tijdschrift voor Natuurkunde, **2006**, 72, 94-97
3. J. Oomens, G. von Helden
Infraroodspectra van naakte eiwitten
Nederlands Tijdschrift voor Natuurkunde **2005**, 71, 178-180
4. J. Oomens
Spectroscopie van hete banden in koude moleculen
Nederlands Tijdschrift voor Natuurkunde **1998**, 64, 179-182
5. H.S.M. de Vries, A.C.R. van Schaik, S.P. Schouten, F.J.M. Harren, J. Oomens
Ethyleen goed te meten met lasertechniek
Vakblad voor Fruitteelt, **1997**, 26, 16-17

Contributions to books and conference proceedings

1. A.M. Rijs, J. Oomens
IR spectroscopic techniques to study isolated biomolecules
In "Topics in Current Chemistry 364: Gas-Phase IR Spectroscopy and Structure of Biological Molecules" edited by A.M. Rijs and J. Oomens, Springer, pp. 1-42 (2015), ISBN 978-3-319-19203-1
2. A.M. Rijs, J. Oomens
Preface
In "Topics in Current Chemistry 364: Gas-Phase IR Spectroscopy and Structure of Biological Molecules" edited by A.M. Rijs and J. Oomens, Springer, pp. v-vii (2015), ISBN 978-3-319-19203-1
3. J. Oomens, O. Pirali, A.G.G.M. Tielens
Laboratory IR spectroscopy of PAHs
In "Laboratory Astrochemistry" edited by S. Schlemmer, T. Giesen, H. Mutschke and C. Jäger, Wiley-VCH, pp. 49-68 (2015), ISBN 978-3-527-40889-4
4. J. Oomens
Laboratory infrared spectroscopy of PAHs
In "PAHs and the Universe" Edited by C. Joblin and A.G.G.M. Tielens, EDP Sciences, EAS Publication Series, **46** 61-73 (2011). DOI: 10.1051/eas/1146007
5. J. Oomens
Fragmentation chemistry of protonated and deprotonated peptides elucidated by IR spectroscopy
Abstracts of papers of the American Chemical Society **241**, 86-PHYS
6. J. Oomens, O. Pirali
Diamonds in the sky
in "Molecules in Space and Laboratory" Edited by J.L. Lemaire and F. Combes (2008) ISBN 9782901057581, pp. 291-292
7. O. Pirali, G. Mulas, G. Malloci, M. Vervloet, D.W. Tokaryk, J. Oomens, C. Joblin
High resolution spectroscopy of naphthalene and quinoline. Anharmonicity of the CH out-of-plane modes
in "Molecules in Space and Laboratory" Edited by J.L. Lemaire and F. Combes (2008) ISBN 9782901057581, pp. 291-292
8. J. Oomens, G. von Helden, G. Meijer
Infrared spectroscopy of ionic PAHs and related compounds
in "The dense interstellar medium in galaxies" Edited by S. Pfalzner, C. Kramer, C. Staubmeier, and A. Heithausen (2004), Springer-Verlag, Berlin, pp. 545-548
9. S.T. Persijn, J. Oomens, Q. Yu, F.J.M. Harren, R. Hartanto, Suparmo, M.A.J. Wasono
Application of sensitive trace gas detectors in post-harvest research
in "Production practices and quality assessment of food crops, Vol.4: Postharvest treatment and technology" Edited by R. Dris and S.M. Jain (2004), Kluwer Academic Publishers, 1-16
10. F.J.M. Harren, G. Cotti, J. Oomens and S. te Lintel Hekkert
Photoacoustic Spectroscopy in Trace Gas Monitoring

in "Encyclopedia of Analytical Chemistry" Edited by R.A. Meyers (2000), John Wiley & Sons Ltd, 2203-2226

11. J. Oomens, S.E. Bisson, M. Harting, T.J. Kulp and F.J. Harren
New Laser Sources for Photoacoustic Trace Gas Detection with Applications in Biomedical Science
in "Biomedical Optoacoustics" Edited by A.A. Oraevsky (2000), Proceedings of SPIE **3916** 295-300
12. F.J. Harren, J. Oomens, S. Persijn, R.H. Veltman, H.S. de Vries, and D.H. Parker
Multicomponent Trace Gas Analysis with a CO-Laser-Based Photoacoustic Detector: Emission of Ethanol, Acetaldehyde, Ethane, and Ethylene from Fruit
in "ROMOPTO '97" Edited by V.I. Vlad and D.C. Dumitras (1998), Proceedings of SPIE **3405** 556-562
13. J. Oomens, S. Persijn, R.H. Veltman, A.C.R. van Schaik, H.S.M. de Vries, F.J.M. Harren, D.H. Parker
Laser Based Detection of Trace Gases Released by Crops under Long Term Storage
in "Chemical, Biochemical and Environmental Fiber Sensors IX" Edited by R.A. Lieberman (1997), Proceedings of SPIE **3105** 387-395
14. J. Oomens, L. Oudejans, J. Reuss and A. Fayt
Double Resonance Spectroscopy of the $\nu_7+\nu_9 \leftarrow \nu_7$ Hot Band in Ethylene, Propensities in a Molecular Jet
EQEC '94 Technical Digest (1994), 284-285

Books

J. Oomens

Spectroscopie in actie – van astrochemie tot biomarker discovery
Inaugurele rede, uitgesproken bij de aanvaarding van het ambt van hoogleraar "Molecular Structure and Dynamics" aan de Radboud Universiteit, FNWI, 29 nov 2018

Weblink: <https://hdl.handle.net/2066/207751>

A.M. Rijs, J. Oomens (Eds.)

Topics in Current Chemistry 364: Gas-Phase IR Spectroscopy and Structure of Biological Molecules

Springer (2015), ISBN 978-3-319-19203-1

Thesis Advisor

Hector Alvaro Galué

Infrared spectroscopy of mass-selected aromatic and diamondoid molecular ions – A laboratory quest for the organic inventory in space
University of Amsterdam, May 16, 2012

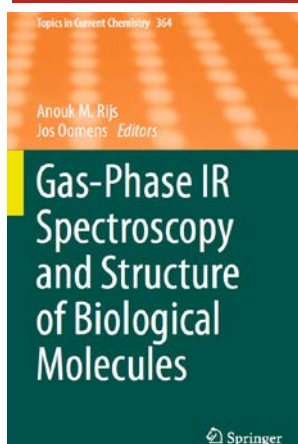
Vivike J.F. Lapoutre

Infrared spectra of strongly bound clusters: Extending the limits of action spectroscopy
University of Amsterdam, June 21, 2013

Sander Jaecx

Protein folding forces probed by infrared action spectroscopy
Radboud University, Oct 8, 2014

*Spectroscopie in actie -
van astrochemie tot
biomarker discovery*



Erik Tan Meng Meng
Structural dynamics of isolated biological & synthetic photoswitches
University of Amsterdam, Nov 25, 2014

Josipa Grzetic
Chemistry of peptide fragmentation – Molecular structures by ion spectroscopy
Radboud University, Nov 26, 2014

Juehan Gao
Laboratory spectroscopy of ionized polyaromatic hydrocarbon derivatives of astrophysical interest
Radboud University, June 8, 2017

Lisanne J.M. Kempkes
Reaction mechanisms of collision and electron induced peptide dissociation revealed by ion spectroscopy
Radboud University, March 19, 2019

Musleh U. Munshi
Infrared spectroscopic characterization of functional molecular ions isolated in the gas phase - Fingerprinting redox pairs
Radboud University, Oct 15, 2019
Sjors Bakels
Radboud University, April 11, 2022

Julianna Palotás
Infrared spectroscopy of ionized fullerene derivatives – The astrophysical implications of breaking symmetries
Radboud University, April 26, 2022