

# Dieter Gerlich

## List of Publications by Year in descending order

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84  
papers

5,146  
citations

87723

38  
h-index

88477

70  
g-index

84  
all docs

84  
docs citations

84  
times ranked

2225  
citing authors

#	ARTICLE	IF	CITATIONS
1	Laboratory confirmation of C60+ as the carrier of two diffuse interstellar bands. <i>Nature</i> , 2015, 523, 322-323.	13.7	469
2	Integral cross sections for ion-molecule reactions. I. The guided beam technique. <i>Chemical Physics</i> , 1974, 4, 417-427.	0.9	410
3	Inhomogeneous RF Fields: A Versatile Tool for the Study of Processes with Slow Ions. <i>Advances in Chemical Physics</i> , 2007, , 1-176.	0.3	397
4	Experimental investigation of radiative association processes as related to interstellar chemistry. <i>Chemical Reviews</i> , 1992, 92, 1509-1539.	23.0	254
5	Ion-neutral collisions in a 22-pole trap at very low energies. <i>Physica Scripta</i> , 1995, T59, 256-263.	1.2	222
6	H <sub>3</sub> <sup>++</sup> HD <sup>+</sup> H <sub>2</sub> D <sup>++</sup> H <sub>2</sub> : low-temperature laboratory measurements and interstellar implications. <i>Planetary and Space Science</i> , 2002, 50, 1275-1285.	0.9	167
7	Helium Tagging Infrared Photodissociation Spectroscopy of Reactive Ions. <i>Accounts of Chemical Research</i> , 2016, 49, 223-230.	7.6	135
8	Infrared spectroscopy of trapped molecular dications below 4K. <i>International Journal of Mass Spectrometry</i> , 2013, 354-355, 204-210.	0.7	127
9	Experimental investigations of ion-molecule reactions relevant to interstellar chemistry. <i>Journal of the Chemical Society, Faraday Transactions</i> , 1993, 89, 2199-2208.	1.7	125
10	Investigations of Protonated and Deprotonated Water Clusters Using a Low-Temperature 22-Pole Ion Trap. <i>Journal of Physical Chemistry A</i> , 2003, 107, 4217-4225.	1.1	117
11	Laser excited N <sub>2</sub> <sup>+</sup> in a 22-pole ion trap. <i>International Journal of Mass Spectrometry</i> , 1999, 185-187, 589-602.	0.7	112
12	Ortho-paratransitions in reactive H <sup>+</sup> +H <sub>2</sub> collisions. <i>Journal of Chemical Physics</i> , 1990, 92, 2377-2388.	1.2	109
13	High-Resolution Dissociative Recombination of Cold H <sub>3</sub> <sup>+</sup> and First Evidence for Nuclear Spin Effects. <i>Physical Review Letters</i> , 2005, 95, 263201.	2.9	106
14	GAS PHASE ABSORPTION SPECTROSCOPY OF AND IN A CRYOGENIC ION TRAP: COMPARISON WITH ASTRONOMICAL MEASUREMENTS*. <i>Astrophysical Journal</i> , 2016, 822, 17.	1.6	101
15	Nondestructive high-resolution and absolute mass determination of single charged particles in a three-dimensional quadrupole trap. <i>Journal of Applied Physics</i> , 2001, 90, 5410-5418.	1.1	99
16	Laser induced reactions in a 22-pole ion trap: C <sub>2</sub> H <sub>2</sub> <sup>++</sup> +h <sup>1/2</sup> +H <sub>2</sub> <sup>+</sup> C <sub>2</sub> H <sub>3</sub> <sup>++</sup> +H. <i>Journal of Chemical Physics</i> , 2002, 117, 2068-2075.	1.2	89
17	Deuterium fractionation in gas-phase reactions measured in the laboratory. <i>Planetary and Space Science</i> , 2002, 50, 1287-1297.	0.9	78
18	A Novel Method to Measure Electronic Spectra of Cold Molecular Ions. <i>Journal of Physical Chemistry Letters</i> , 2013, 4, 4051-4054.	2.1	78

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19	The effect of vibration and translational energy on the reaction dynamics of the H <sub>2</sub> <sup>+</sup> +H <sub>2</sub> system. Journal of Chemical Physics, 1981, 75, 2153-2162.	1.2	76
20	Complex formation in proton+D <sub>2</sub> collisions. Chemical Physics, 1980, 47, 245-255.	0.9	72
21	BerlinTrap: A new cryogenic 22-pole ion trap spectrometer. Journal of Molecular Spectroscopy, 2017, 332, 8-15.	0.4	65
22	Action spectroscopy and temperature diagnostics of H <sub>3</sub> <sup>+</sup> by chemical probing. Journal of Chemical Physics, 2004, 121, 11030.	1.2	62
23	Ion trap studies of association processes in collisions of CH <sub>3</sub> <sup>+</sup> and CD <sub>3</sub> <sup>+</sup> with n-H <sub>2</sub> , p-H <sub>2</sub> , D <sub>2</sub> , and He at 80 K. Astrophysical Journal, 1989, 347, 849.	1.6	62
24	Probing Isomers of the Benzene Dication in a Low-Temperature Trap. Journal of the American Chemical Society, 2014, 136, 2960-2962.	6.6	61
25	C <sub>2</sub> <sup>+</sup> +H <sub>2</sub> →CH <sub>2</sub> <sup>+</sup> : The effect of reagent rotation on the integral cross section in the threshold region. Journal of Chemical Physics, 1987, 87, 350-359.	1.2	59
26	On the dynamics of the reaction of positive hydrogen cluster ions (H <sub>5</sub> <sup>+</sup> to H <sub>23</sub> <sup>+</sup> ) with para and normal hydrogen at 10 K. International Journal of Mass Spectrometry and Ion Processes, 1995, 149-150, 373-387.	1.9	57
27	Laboratory astrochemistry: studying molecules under inter- and circumstellar conditions. Physica Scripta, 2006, 73, C25-C31.	1.2	50
28	Two-Color Infrared Predissociation Spectroscopy of C <sub>6</sub> H <sub>6</sub> <sup>2+</sup> Isomers Using Helium Tagging. Journal of Physical Chemistry A, 2015, 119, 2532-2542.	1.1	48
29	Controlled synthesis and analysis of HeH <sub>3</sub> <sup>+</sup> in a 3.7 K ion trap. Molecular Physics, 2015, 113, 2320-2332.	0.8	46
30	REACTIONS OF COLD TRAPPED CH <sub>3</sub> <sup>+</sup> IONS WITH SLOW H ATOMS. Astrophysical Journal, 2011, 737, 60.	1.6	45
31	Apparatus for the study of electronic spectra of collisionally cooled cations: para-dichlorobenzene. Journal of Molecular Structure, 2006, 795, 93-97.	1.6	44
32	Single and Merged Beam Studies of the Reaction H <sub>2</sub> <sup>+</sup> (v = 0,1; j = 0,4) + H <sub>2</sub> → H <sub>3</sub> <sup>+</sup> + H. Israel Journal of Chemistry, 1997, 37, 343-352.	1.8	43
33	Dynamical constraints and nuclear spin caused restrictions in collision systems. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 3007-3034.	1.0	41
34	LOW-TEMPERATURE ION TRAP STUDIES OF N <sub>3</sub> <sup>+</sup> (j = 0,1) + H <sub>2</sub> <sup>+</sup> → NH <sub>3</sub> <sup>+</sup> + H. Astrophysical Journal, 2013, 768, 86.	1.6	41
35	Infrared spectroscopy of cold trapped molecular ions using He tagging. Journal of the Chinese Chemical Society, 2018, 65, 637-653.	1.6	41
36		0.8	41

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37	Energy partitioning in Ar <sup>++</sup> O <sub>2</sub> collisions at low energies: Analysis of product states by laser-induced predissociation. Journal of Chemical Physics, 1989, 90, 1610-1623.	1.2	40
38	ION TRAP STUDIES OF H <sup>+</sup> + H <sub>2</sub> <sup>+</sup> BETWEEN 10 AND 135 K. Astrophysical Journal, 2012, 749, 22.	1.6	39
39	Buffer gas cooling of polyatomic ions in rf multi-electrode traps. Faraday Discussions, 2009, 142, 57.	1.6	37
40	Reactive scattering of N <sup>++</sup> H <sub>2</sub> and deuterated analogs: Statistical calculation of cross sections and rate coefficients. Journal of Chemical Physics, 1989, 90, 3574-3581.	1.2	35
41	Temperature variable ion trap studies of C <sub>3</sub> H <sub>n</sub> <sup>+</sup> with H <sub>2</sub> and HD. Physical Chemistry Chemical Physics, 2005, 7, 1026.	1.3	34
42	Dynamics of the D <sup>+</sup> + H <sub>2</sub> and H <sup>+</sup> + D <sub>2</sub> reactions: a detailed comparison between theory and experiment. Physical Chemistry Chemical Physics, 2012, 14, 3346.	1.3	34
43	Kinematic averaging effects in thermal and low energy ion-molecule collisions: Influence on product ion kinetic energy distributions. Journal of Chemical Physics, 1989, 90, 127-139.	1.2	33
44	Variable temperature ion trap studies of CH <sub>4</sub> <sup>++</sup> H <sub>2</sub> , HD and D <sub>2</sub> : negative temperature dependence and significant isotope effect. Chemical Physics, 2004, 298, 97-105.	0.9	33
45	Action spectroscopy of and D <sub>2</sub> H <sup>+</sup> using overtone excitation. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 2931-2942.	1.6	33
46	The Study of Cold Collisions Using Ion Guides and Traps. , 2008, , 121-174.		33
47	Spin-forbidden radiative decay of the <sup>4</sup> Σ <sup>+</sup> state of O <sub>2</sub> . Journal of Chemical Physics, 1987, 86, 508-515.	1.2	31
48	Interaction of electrons and molecules with a single trapped nanoparticle. Applied Physics A: Materials Science and Processing, 2004, 78, 629-636.	1.1	29
49	State-to-State Dynamics of High-n Rydberg H-Atom Scattering with D <sub>2</sub> . Physical Review Letters, 2005, 95, 013201.	2.9	28
50	Effects of molecular rotation in low-energy electron collisions of. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 2981-2997.	1.6	28
51	Reactions of CO <sub>2</sub> <sup>+</sup> with H, H <sub>2</sub> and deuterated analogues. International Journal of Mass Spectrometry, 2009, 280, 218-225.	0.7	28
52	Nuclear Spin Effect on Recombination of $H_3^+$ Ions with Electrons at 77 Å. Physical Review Letters, 2011, 106, 203201.	2.9	28
53	The Production and Study of Ultra-Cold Molecular Ions. , 2008, , 295-343.		25
54	State Specific Stabilization of H <sup>+</sup> + H <sub>2</sub> <sup>+</sup> Collision Complexes. Journal of Physical Chemistry A, 2013, 117, 10068-10075.	1.1	25

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55	H/D exchange in reactions of OH <sup>+</sup> with D <sub>2</sub> and of OD <sup>+</sup> with H <sub>2</sub> at low temperatures. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 8732-8739.	1.3	25
56	Reactions between Cold CH <sub>3</sub> <sup>+</sup> and Slow H and H <sub>2</sub> . <i>Zeitschrift Fur Physikalische Chemie</i> , 2011, 225, 475-492.	1.4	24
57	Formation of H <sub>2</sub> O <sup>+</sup> and H <sub>3</sub> O <sup>+</sup> Cations in Reactions of OH <sup>+</sup> and H <sub>2</sub> O <sup>+</sup> with H <sub>2</sub> : Experimental Studies of the Reaction Rate Coefficients from T=15 to 300 K. <i>Astrophysical Journal</i> , 2018, 854, 25.	1.6	24
58	Association reactions with state selected ions at meV collision energies: CO <sup>+</sup> (v=0,j) + 2 CO → (CO) <sub>2</sub> + CO. <i>Zeitschrift für Physik D-Atoms Molecules and Clusters</i> , 1989, 13, 259-268.	1.0	23
59	Stabilization of H <sub>2</sub> <sup>+</sup> ← H <sub>2</sub> collision complexes between 11 and 28K. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2012, 370, 5066-5073.	1.6	23
60	On the combination of a linear field free trap with a time-of-flight mass spectrometer. <i>Review of Scientific Instruments</i> , 2001, 72, 2900-2908.	0.6	22
61	Probing the structure of CH <sub>5</sub> <sup>+</sup> and deuterated variants via collisions. <i>Physical Chemistry Chemical Physics</i> , 2005, 7, 1583.	1.3	22
62	Reactions of C <sub>n</sub> (n=1-3) with ions stored in a temperature-variable radio-frequency trap. <i>International Journal of Mass Spectrometry</i> , 2005, 240, 139-147.	0.7	21
63	IR Spectroscopy of Fullerene Ions in a Cryogenic Quadrupole Trap. <i>Astrophysical Journal</i> , 2018, 864, 62.	1.6	20
64	Trapping ions at high temperatures: thermal decay of C <sub>60</sub> <sup>+</sup> . <i>Applied Physics B: Lasers and Optics</i> , 2014, 114, 257-266.	1.1	19
65	Applications of rf fields and collision dynamics in atomic mass spectrometry The opinions expressed in the following article are entirely those of the author and do not necessarily represent the views of the Royal Society of Chemistry, the Editor or the Editorial Board of JAAS.. <i>Journal of Analytical Atomic Spectrometry</i> , 2004, 19, 581.	1.6	18
66	Resonance-enhanced multiphoton ionization of argon: reactivity as a probe for the 2P <sub>1/2</sub> /2P <sub>3/2</sub> population. <i>International Journal of Mass Spectrometry and Ion Processes</i> , 1994, 135, 1-17.	1.9	17
67	Collisions of FeO <sup>+</sup> with H <sub>2</sub> and He in a Cryogenic Ion Trap. <i>ChemPhysChem</i> , 2016, 17, 3723-3739.	1.0	17
68	Low-temperature Experiments on the Formation of Deuterated C <sub>3</sub> H <sub>3</sub> . <i>Astrophysical Journal</i> , 2005, 621, 1163-1170.	1.6	13
69	Transfer of a proton between H <sub>2</sub> <sup>+</sup> and O <sub>2</sub> <sup>+</sup> . <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2012, 370, 5041-5054.	1.6	13
70	Single Nanoparticle Mass Spectrometry as a High Temperature Kinetics Tool: Sublimation, Oxidation, and Emission Spectra of Hot Carbon Nanoparticles. <i>Journal of Physical Chemistry A</i> , 2015, 119, 12538-12550.	1.1	13
71	REMPI in a focusing rf-quadrupole: a new source for mass-, energy-, and state-selected ions. <i>International Reviews in Physical Chemistry</i> , 1996, 15, 283-298.	0.9	12
72	Interaction of O <sup>+</sup> and H <sub>2</sub> at low temperatures. <i>Journal of Chemical Physics</i> , 2015, 142, 014304.	1.2	12

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73	Electronic spectra of ions of astrochemical interest: from fast overview spectra to high resolution. Faraday Discussions, 2019, 217, 98-113.	1.6	12
74	Ternary association of H <sup>+</sup> ion with H <sub>2</sub> at 11 ÅK, experimental study. EPJ Applied Physics, 2011, 56, 24010.	0.3	11
75	OH <sup>+</sup> Formation in the Low-temperature O <sup>+</sup> (O <sup>4+</sup> S) + H <sub>2</sub> Reaction. Astrophysical Journal, 2018, 856, 100.	1.6	10
76	Tagging fullerene ions with helium in a cryogenic quadrupole trap. International Journal of Mass Spectrometry, 2019, 438, 78-86.	0.7	10
77	Effect of rotational excitation of H <sub>2</sub> on isotopic exchange reaction with OD <sup>+</sup> at low temperatures. Astronomy and Astrophysics, 2018, 615, L6.	2.1	9
78	Formation of H <sub>3</sub> <sup>+</sup> in Collisions of H <sub>2</sub> <sup>+</sup> with H <sub>2</sub> Studied in a Guided Ion Beam Instrument. ChemPhysChem, 2020, 21, 1429-1435.	1.0	9
79	Near- and Mid-IR Gas-Phase Absorption Spectra of H <sub>2</sub> @C <sub>60</sub> <sup>+</sup> -He. Journal of Physical Chemistry A, 2018, 122, 8162-8166.	1.1	8
80	Variable-Temperature Rate Coefficients for the Electron Transfer Reaction N <sub>2</sub> <sup>+</sup> + H <sub>2</sub> O Measured with a Coaxial Molecular Beam Radio Frequency Ring Electrode Ion Trap. Journal of Physical Chemistry A, 2011, 115, 25-29.	1.1	6
81	Electron Transfer and Associative Detachment in Low-Temperature Collisions of D <sup>+</sup> with H. Journal of Physical Chemistry Letters, 2015, 6, 4762-4766.	2.1	5
82	The HeH <sup>+</sup> complex. II. Infrared predissociation spectrum and energy term diagram. Journal of Chemical Physics, 2022, 156, 144308.	1.2	3
83	The HeH <sup>+</sup> complex. I. Vibration-rotation-tunneling states and transition probabilities. Journal of Chemical Physics, 2022, 156, 144307.	1.2	2
84	Some Routes in Forming C <sub>3</sub> H <sub>n</sub> <sup>+</sup> Ions and Deuterated Variants under Interstellar Conditions. AIP Conference Proceedings, 2006, , .	0.3	1