

Albert A Viggiano

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/6529359/publications.pdf>

Version: 2024-02-01

105
papers

2,305
citations

236612

25
h-index

264894

42
g-index

105
all docs

105
docs citations

105
times ranked

1246
citing authors

#	ARTICLE	IF	CITATIONS
1	Kinetic energy, temperature, and derived rotational temperature dependences for the reactions of Kr ⁺ (2P _{3/2}) and Ar ⁺ with HCl. <i>Journal of Chemical Physics</i> , 1990, 93, 1149-1157.	1.2	195
2	Rate constants for the reactions of O ⁺ with N ₂ and O ₂ as a function of temperature (300–1800 K). <i>Journal of Chemical Physics</i> , 1997, 106, 3540-3544.	1.2	126
3	Ambient and Modified Atmospheric Ion Chemistry: From Top to Bottom. <i>Chemical Reviews</i> , 2015, 115, 4542-4570.	23.0	107
4	Conversion of Methane to Methanol: Nickel, Palladium, and Platinum (d ⁹) Cations as Catalysts for the Oxidation of Methane by Ozone at Room Temperature. <i>Chemistry - A European Journal</i> , 2010, 16, 11605-11610.	1.7	89
5	Rotational and Vibrational Energy Effects on Ion–Molecule Reactivity As Studied by the VT-SIFDT Technique. <i>The Journal of Physical Chemistry</i> , 1996, 100, 19227-19240.	2.9	83
6	Laboratory studies of some ion-atom reactions related to interstellar molecular synthesis. <i>Astrophysical Journal</i> , 1980, 236, 492.	1.6	66
7	Reactions of mass-selected cluster ions in a thermal bath gas. <i>International Reviews in Physical Chemistry</i> , 1998, 17, 147-184.	0.9	56
8	Low-energy electron attachment to SF ₆ . I. Kinetic modeling of nondissociative attachment. <i>Journal of Chemical Physics</i> , 2007, 127, 244303.	1.2	53
9	Flowing afterglow apparatus for the study of ion–molecule reactions at high temperatures. <i>Review of Scientific Instruments</i> , 1996, 67, 2142-2148.	0.6	48
10	Activation of Methane by FeO ⁺ : Determining Reaction Pathways through Temperature-Dependent Kinetics and Statistical Modeling. <i>Journal of Physical Chemistry A</i> , 2014, 118, 2029-2039.	1.1	46
11	Low-energy electron attachment to SF ₆ . II. Temperature and pressure dependences of dissociative attachment. <i>Journal of Chemical Physics</i> , 2007, 127, 244304.	1.2	45
12	Teaching an Old Dog New Tricks: Using the Flowing Afterglow to Measure Kinetics of Electron Attachment to Radicals, Ion–Ion Mutual Neutralization, and Electron Catalyzed Mutual Neutralization. <i>Advances in Atomic, Molecular and Optical Physics</i> , 2012, 61, 209-294.	2.3	45
13	Evaluation of the exothermicity of the chemi-ionization reaction Sm + O → SmO ⁺ + e ⁻ . <i>Journal of Chemical Physics</i> , 2015, 142, 134307.	1.2	44
14	Low-energy electron attachment to SF ₆ . III. From thermal detachment to the electron affinity of SF ₆ . <i>Journal of Chemical Physics</i> , 2007, 127, 244305.	1.2	43
15	Further Insight into the Reaction FeO ⁺ + H ₂ → Fe ⁺ + H ₂ O: Temperature Dependent Kinetics, Isotope Effects, and Statistical Modeling. <i>Journal of Physical Chemistry A</i> , 2014, 118, 6789-6797.	1.1	38
16	Collisional Stabilization and Thermal Dissociation of Highly Vibrationally Excited C ₉ H ₁₂ ⁺ Ions from the Reaction O ₂ ⁺⁺ C ₉ H ₁₂ ⁺ → O ₂ ⁺ C ₉ H ₁₂ ⁺ . <i>Journal of Physical Chemistry A</i> , 2004, 108, 9652-9659.	1.1	33
17	Kinetics of the Reactions of F ⁻ with CF ₃ Br and CF ₃ I as a Function of Temperature, Kinetic Energy, Internal Temperature, and Pressure. <i>The Journal of Physical Chemistry</i> , 1994, 98, 3740-3746.	2.9	32
18	Pressure and temperature dependence of dissociative and non-dissociative electron attachment to CF ₃ : Experiments and kinetic modeling. <i>Journal of Chemical Physics</i> , 2011, 135, 054306.	1.2	32

#	ARTICLE	IF	CITATIONS
19	Reactions of CH ₃ OH ₂ ⁺ , CH ₃ OH ₂ ⁺ .cndot.(CH ₃ OH), and (CH ₃) ₂ OH ⁺ with methanol: effect of solvation. Journal of the American Chemical Society, 1991, 113, 5932-5936.	6.6	29
20	The Reaction of O ₂ ⁺ + C ₈ H ₁₀ (Ethylbenzene) as a Function of Pressure and Temperature. 2. Analysis of Collisional Energy Transfer of Highly Excited C ₈ H ₁₀ ⁺ . Journal of Physical Chemistry A, 2004, 108, 1574-1581.	1.1	28
21	Behavior of rate coefficients for ion-ion mutual neutralization, 300-550 K. Journal of Chemical Physics, 2012, 136, 204306.	1.2	28
22	Spin-inversion and spin-selection in the reactions FeO ⁺ + H ₂ and Fe ⁺ + N ₂ O. Physical Chemistry Chemical Physics, 2015, 17, 19709-19717.	1.3	28
23	Branching ratios and rate constants for reactions of ¹⁶ O ⁺ and ¹⁸ O ⁺ with N ₂ O and ¹⁴ N ¹⁵ N ¹⁶ O. Journal of Chemical Physics, 1990, 92, 3448-3452.	1.2	27
24	Reexamination of ionospheric chemistry: high temperature kinetics, internal energy dependences, unusual isomers, and corrections. Physical Chemistry Chemical Physics, 2006, 8, 2557.	1.3	27
25	Aluminum Cluster Anion Reactivity with Singlet Oxygen: Evidence of Al ₉ ⁻ Stability. Journal of Physical Chemistry C, 2011, 115, 9903-9908.	1.5	27
26	A physics-based model for the ionization of samarium by the MOSC chemical releases in the upper atmosphere. Radio Science, 2017, 52, 559-577.	0.8	27
27	Iron cation catalyzed reduction of N ₂ O by CO: gas-phase temperature dependent kinetics. Physical Chemistry Chemical Physics, 2013, 15, 11257.	1.3	26
28	Kinetics of chemi-ionization reactions of lanthanide metals (Nd, Sm) from 150 to 450 K. Journal of Chemical Physics, 2015, 143, 204303.	1.2	25
29	Temperature, kinetic energy, and internal energy dependences of the rate constant and branching fraction for the reaction of O ⁺ (4S) with CO ₂ . Journal of Chemical Physics, 1992, 96, 270-274.	1.2	24
30	Statistical modeling of the reactions Fe ⁺ + N ₂ O → FeO ⁺ + N ₂ and FeO ⁺ + CO → Fe ⁺ + CO ₂ . Physical Chemistry Chemical Physics, 2015, 17, 19700-19708.	1.3	24
31	Rate constants for the reaction of O ₂ ⁺ with NO from 300 to 1400 K. Journal of Chemical Physics, 1999, 110, 10746-10748.	1.2	23
32	Ozone Reactions with Alkaline-Earth Metal Cations and Dications in the Gas Phase: Room-Temperature Kinetics and Catalysis. Journal of Physical Chemistry A, 2007, 111, 13397-13402.	1.1	23
33	Artificial ionospheric modification: The Metal Oxide Space Cloud experiment. Radio Science, 2017, 52, 539-558.	0.8	23
34	Electronic, Rovibrational, and Translational Energy Effects in Ion-Alkylbenzene Charge-Transfer Reactions. Journal of Physical Chemistry A, 2000, 104, 10336-10346.	1.1	22
35	On the Temperature Dependence of the Thermal Electron Attachment to SF ₆ , SF ₅ Cl, and POCl ₃ . Zeitschrift Fur Physikalische Chemie, 2011, 225, 1405-1416.	1.4	22
36	Electron attachment to POCl ₃ . III. Measurement and kinetic modeling of branching fractions. Journal of Chemical Physics, 2011, 134, 094310.	1.2	22

#	ARTICLE	IF	CITATIONS
37	A novel technique for measurement of thermal rate constants and temperature dependences of dissociative recombination: CO ₂ ⁺ , CF ₃ ⁺ , N ₂ O ⁺ , C ₇ H ₈ ⁺ , C ₇ H ₇ ⁺ , C ₆ H ₆ ⁺ , C ₆ H ₅ ⁺ , C ₅ H ₆ ⁺ , C ₄ H ₄ ⁺ , and C ₃ H ₃ ⁺ . Journal of Chemical Physics, 2013, 138, 154201.	1.2	22
38	Kinetics of ion-ion mutual neutralization: Halide anions with polyatomic cations. Journal of Chemical Physics, 2014, 140, 224309.	1.2	22
39	Reaction of Mass-Selected, Thermalized V _n ⁺ /O _m ⁺ Clusters with CCl ₄ . Journal of Physical Chemistry A, 2019, 123, 4817-4824.	1.1	22
40	A new instrument for thermal electron attachment at high temperature: NF ₃ and CH ₃ Cl attachment rate constants up to 1100 K. Review of Scientific Instruments, 2009, 80, 034104.	0.6	20
41	Discrepancy Between Experimental and Theoretical Predictions of the Adiabaticity of Ti ⁺ +CH ₃ OH. Chemistry - A European Journal, 2017, 23, 11780-11783.	1.7	19
42	Old School Techniques with Modern Capabilities: Kinetics Determination of Dynamical Information Such as Barriers, Multiple Entrance Channel Complexes, Product States, Spin Crossings, and Size Effects in Metallic Ion-Molecule Reactions. Journal of Physical Chemistry A, 2021, 125, 3503-3527.	1.1	19
43	Mutual neutralization of atomic rare-gas cations (Ne ⁺ , Ar ⁺ , Kr ⁺ , Xe ⁺) with atomic halide anions (Cl ⁻). Tj ETQq1 1 0.784314 rgBT /Over	1.2	18
44	Photochemical determination of O densities in the Martian thermosphere: Effect of a revised rate coefficient. Geophysical Research Letters, 2017, 44, 8099-8106.	1.5	18
45	Electron attachment to POCl ₃ : Measurement and theoretical analysis of rate constants and branching ratios as a function of gas pressure and temperature, electron temperature, and electron energy. Journal of Chemical Physics, 2006, 124, 124322.	1.2	17
46	Experimental and modeling study of thermal rate coefficients and cross sections for electron attachment to C ₆ O. Journal of Chemical Physics, 2010, 132, 194307.	1.2	17
47	Kinetics of electron attachment to OH and HNO ₃ and mutual neutralization of Ar ⁺ with NO ⁻ and NO ₃ ⁻ at 300 and 500 K. Journal of Chemical Physics, 2012, 136, 124307.	1.2	17
48	Dissociative electron attachment to C ₂ F ₅ radicals. Journal of Chemical Physics, 2012, 137, 054310.	1.2	17
49	Temperature dependences for the reactions of O ₂ ⁻ and O ⁻ with N and O atoms in a selected-ion flow tube instrument. Journal of Chemical Physics, 2013, 139, 144302.	1.2	17
50	Electron attachment to POCl ₃ . II. Dependence of the attachment rate coefficients on gas and electron temperature. International Journal of Mass Spectrometry, 2011, 306, 123-128.	0.7	16
51	Effects of rotational, vibrational, and translational energy on the rate constants for the isotope exchange reactions OH ⁻ +D ₂ and OD ⁻ +H ₂ . Journal of Chemical Physics, 1994, 100, 2748-2753.	1.2	15
52	Electron attachment to 14 halogenated alkenes and alkanes, 300-600 K. Journal of Chemical Physics, 2012, 137, 164306.	1.2	15
53	Determination of the SmO ⁺ bond energy by threshold photodissociation of the cryogenically cooled ion. Journal of Chemical Physics, 2021, 155, 174303.	1.2	15
54	Electron attachment to CF ₃ and CF ₃ Br at temperatures up to 890 K: Experimental test of the kinetic modeling approach. Journal of Chemical Physics, 2013, 138, 204316.	1.2	13

#	ARTICLE	IF	CITATIONS
55	Kinetics of CO ⁺ and CO ₂ ⁺ with N and O atoms. <i>Journal of Chemical Physics</i> , 2018, 148, 084305.	1.2	13
56	Au ₂ ⁺ cannot catalyze conversion of methane to ethene at low temperature. <i>Catalysis Science and Technology</i> , 2019, 9, 2767-2780.	2.1	13
57	Kinetics of electron attachment to SF ₃ CN, SF ₃ C ₆ F ₅ , and SF ₃ and mutual neutralization of Ar ⁺ with CN ⁺ and C ₆ F ₅ ⁺ . <i>Journal of Chemical Physics</i> , 2011, 134, 044323.	1.2	12
58	Analysis by kinetic modeling of the temperature dependence of thermal electron attachment to CF ₃ Br. <i>Journal of Chemical Physics</i> , 2012, 137, 024303.	1.2	12
59	Electronic structure of SmO and SmO ⁺ via slow photoelectron velocity-map imaging spectroscopy and spin-orbit CASPT2 calculations. <i>Journal of Chemical Physics</i> , 2017, 147, 234311.	1.2	12
60	Lanthanides as Catalysts: Guided Ion Beam and Theoretical Studies of Sm ⁺ + COS. <i>Journal of Physical Chemistry A</i> , 2018, 122, 737-749.	1.1	12
61	Temperature and Isotope Dependent Kinetics of Nickel-Catalyzed Oxidation of Methane by Ozone. <i>Journal of Physical Chemistry A</i> , 2018, 122, 6655-6662.	1.1	12
62	Thermal activation of methane by MgO ⁺ : temperature dependent kinetics, reactive molecular dynamics simulations and statistical modeling. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 8913-8923.	1.3	12
63	Kinetics of the reaction of O ₂ ⁺ with CH ₄ from 500 to 1400 K: A case for state specific chemistry. <i>Journal of Chemical Physics</i> , 2001, 114, 6112-6118.	1.2	11
64	Incorporating time-of-flight detection on a selected ion flow tube apparatus. <i>International Journal of Mass Spectrometry</i> , 2015, 377, 479-483.	0.7	11
65	Chemi-ionization reactions of La, Pr, Tb, and Ho with atomic O and La with N ₂ O from 200 to 450 K. <i>Journal of Chemical Physics</i> , 2016, 145, 084302.	1.2	11
66	Redefining the Mechanism of O ₂ Etching of Al _n ⁺ Superatoms: An Early Barrier Controls Reactivity, Analogous to Surface Oxidation. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 217-220.	2.1	11
67	Methane Adducts of Gold Dimer Cations: Thermochemistry and Structure from Collision-Induced Dissociation and Association Kinetics. <i>Journal of Physical Chemistry A</i> , 2020, 124, 3335-3346.	1.1	11
68	Rate constants for reactions of NO ⁺ with N ₂ O, 14N ₁₅ NO, and 15NO ₂ . <i>Journal of Chemical Physics</i> , 1990, 92, 2342-2343.	1.2	10
69	Electron attachment to fluorocarbon radicals. <i>Journal of Chemical Physics</i> , 2012, 137, 214318.	1.2	10
70	Determining Rate Constants and Mechanisms for Sequential Reactions of Fe ⁺ with Ozone at 500 K. <i>Journal of Physical Chemistry A</i> , 2017, 121, 24-30.	1.1	10
71	Thermal Kinetics of Al _n ⁺ + O ₂ (<i>n</i> = 2-30): Measurable Reactivity of Al ₁₃ ⁺ . <i>Journal of Physical Chemistry A</i> , 2019, 123, 6123-6129.	1.1	10
72	Temperature dependences of rate coefficients for electron catalyzed mutual neutralization. <i>Journal of Chemical Physics</i> , 2011, 135, 024204.	1.2	9

#	ARTICLE	IF	CITATIONS
73	Selected-ion flow tube temperature-dependent measurements for the reactions of O ₂ ⁺ with N atoms and N ₂ ⁺ with O atoms. <i>Journal of Chemical Physics</i> , 2015, 142, 154305.	1.2	9
74	The Role of Non- σ -Reactive Binding Sites in the AlVO ₄ + CO/AlVO ₃ + N ₂ O Catalytic Cycle. <i>ChemPhysChem</i> , 2018, 19, 2835-2838.	1.0	9
75	Quantifying the Competition between Intersystem Crossing and Spin-Conserved Pathways in the Thermal Reaction of V ⁺ + N ₂ O. <i>Journal of Physical Chemistry A</i> , 2020, 124, 30-38.	1.1	9
76	Cyclotrimerization of Acetylene under Thermal Conditions: Gas-Phase Kinetics of V ⁺ and Fe ⁺ + C ₂ H ₂ . <i>Journal of Physical Chemistry A</i> , 2021, 125, 9327-9337.	1.1	8
77	Kinetics and Product Branching Fractions of Reactions between a Cation and a Radical: Ar ⁺ + CH ₃ and O ₂ ⁺ + CH ₃ . <i>Journal of Physical Chemistry A</i> , 2015, 119, 952-958.	1.1	7
78	Reactivity from excited state 4FeO ⁺ + CO sampled through reaction of ground state 4FeCO ⁺ + N ₂ O. <i>Journal of Chemical Physics</i> , 2016, 144, 234303.	1.2	7
79	Analysis of the Pressure and Temperature Dependence of the Complex-Forming Bimolecular Reaction CH ₃ OCH ₃ + Fe ⁺ . <i>Journal of Physical Chemistry A</i> , 2016, 120, 5264-5273.	1.1	7
80	Temperature and Pressure Dependences of the Reactions of Fe ⁺ with Methyl Halides CH ₃ X (X = Cl, Br, I): Experiments and Kinetic Modeling Results. <i>Journal of Physical Chemistry A</i> , 2017, 121, 4058-4068.	1.1	7
81	Surprising behaviors in the temperature dependent kinetics of diatomic interhalogens with anions and cations. <i>Journal of Chemical Physics</i> , 2017, 146, 214307.	1.2	7
82	Association Between Meteor Radio Afterglows and Optical Persistent Trains. <i>Journal of Geophysical Research: Space Physics</i> , 2020, 125, e2020JA028053.	0.8	7
83	Coupling an electrospray source and a solids probe/chemical ionization source to a selected ion flow tube apparatus. <i>Review of Scientific Instruments</i> , 2015, 86, 084101.	0.6	6
84	Kinetics of First-Row Transition Metal Cations (V ⁺ , Fe ⁺ , Co ⁺) with OCS at Thermal Energies. <i>Journal of Physical Chemistry A</i> , 2018, 122, 4246-4251.	1.1	5
85	Mechanistic details of the MnO ⁺ + H ₂ /D ₂ reaction through temperature-dependent kinetics and statistical modeling. <i>International Journal of Mass Spectrometry</i> , 2019, 435, 26-33.	0.7	5
86	Structures and Electron Affinities of Aluminum Hydride Clusters Al _n H (n = 1-10). <i>Journal of Physical Chemistry A</i> , 2019, 123, 1111-1120.	1.1	5
87	On the Role of Hydrogen Atom Transfer (HAT) in Thermal Activation of Methane by MnO ⁺ : Entropy vs. Energy. <i>Zeitschrift Fur Physikalische Chemie</i> , 2019, 233, 771-783.	1.4	4
88	Role of Spin in the Catalytic Oxidation of CO by N ₂ O Enabled by Co ⁺ : New Insights from Temperature-Dependent Kinetics and Statistical Modeling. <i>Journal of Physical Chemistry A</i> , 2020, 124, 7966-7972.	1.1	4
89	Gas-Phase Anionic Metal Clusters are Model Systems for Surface Oxidation: Kinetics of the Reactions of M _n ⁻ with O ₂ (M = V, Cr, Co, Ni; n = 1-15). <i>Journal of Physical Chemistry A</i> , 2021, 125, 2069-2076.	1.1	4
90	Electronic structure of NdO via slow photoelectron velocity-map imaging spectroscopy of NdO ⁻ . <i>Journal of Chemical Physics</i> , 2021, 155, 114305.	1.2	4

#	ARTICLE	IF	CITATIONS
91	Effect of Intersystem Crossings on the Kinetics of Thermal Ion ⁺ Molecule Reactions: Ti ⁺ + O ₂ , CO ₂ , and N ₂ O. Journal of Physical Chemistry A, 2022, 126, 859-869.	1.1	4
92	Electron attachment to C ₂ fluorocarbon radicals at high temperature. Journal of Chemical Physics, 2013, 139, 184306.	1.2	3
93	Time-of-flight detection coupled to a flowing afterglow: Improvements and characterization. International Journal of Mass Spectrometry, 2016, 403, 27-31.	0.7	3
94	Calculations of the active mode and energetic barrier to electron attachment to CF ₃ and comparison with kinetic modeling of experimental results. Physical Chemistry Chemical Physics, 2016, 18, 31064-31071.	1.3	3
95	Barrierless methane-to-methanol conversion: the unique mechanism of AlO ⁺ . Physical Chemistry Chemical Physics, 2020, 22, 14544-14550.	1.3	3
96	Catalytic Oxidation of CO by N ₂ O Enabled by Al ₂ O ₃ ⁺ : Temperature Dependent Kinetics and Statistical Modeling. Journal of Physical Chemistry A, 2020, 124, 1705-1711.	1.1	3
97	Temperature and energy dependences of ion ⁺ molecule reactions: Studies inspired by Diethard B ⁺ hme. Mass Spectrometry Reviews, 2021, , .	2.8	3
98	Gas-Phase Reactivity of Ozone with Lanthanide Ions (Sm ⁺ , Nd ⁺) and Their Higher Oxides. Journal of the American Society for Mass Spectrometry, 2022, , .	1.2	3
99	Electron attachment and positive ion chemistry of monohydrogenated fluorocarbon radicals. Journal of Chemical Physics, 2015, 143, 074309.	1.2	2
100	Kinetics of Cations with C ₂ Hydrofluorocarbon Radicals. Journal of Physical Chemistry A, 2017, 121, 8061-8068.	1.1	2
101	On the Competition Between Electron Autodetachment and Dissociation of Molecular Anions. Journal of the American Society for Mass Spectrometry, 2019, 30, 1828-1834.	1.2	2
102	Inconsistent kinetic isotope effect in ammonia charge exchange reaction measured in a Coulomb crystal and in a selected-ion flow tube. Nature Communications, 2022, 13, .	5.8	2
103	Thermal rate constants for electron attachment to N ₂ O: An example of endothermic attachment. Journal of Chemical Physics, 2020, 153, 074306.	1.2	1
104	Arrhenius behavior of electron attachment to CH ₃ Br from 303 to 1100K. International Journal of Mass Spectrometry, 2014, 365-366, 75-79.	0.7	0
105	An experimental and statistical modeling study of the reactivity of Co ⁺ (CH ₃ Br) _n (n = 0,1) with methyl bromide. International Journal of Mass Spectrometry, 2021, 469, 116671.	0.7	0