Albert A Viggiano

List of Publications by Year
in descending order

105	2,305	236925	265206
papers	citations	25 h-index	42 g-index

105	105	105	1246
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Kinetic energy, temperature, and derived rotational temperature dependences for the reactions of Kr+(2P3/2) and Ar+ with HCl. Journal of Chemical Physics, 1990, 93, 1149-1157.	3.0	195
2	Rate constants for the reactions of O+ with N2 and O2 as a function of temperature (300â€“1800 K). Journal of Chemical Physics, 1997, 106, 3540-3544.	3.0	126
3	Ambient and Modified Atmospheric Ion Chemistry: From Top to Bottom. Chemical Reviews, 2015, 115, 4542-4570.	47.7	107
4	Conversion of Methane to Methanol: Nickel, Palladium, and Platinum (d⁹) Cations as Catalysts for the Oxidation of Methane by Ozone at Room Temperature. Chemistry - A European Journal, 2010, 16, 11605-11610.	3.3	89
5	Rotational and Vibrational Energy Effects on Ionâ˜Molecule Reactivity As Studied by the VT-SIFDT Technique. The Journal of Physical Chemistry, 1996, 100, 19227-19240.	2.9	83
6	Laboratory studies of some ion-atom reactions related to interstellar molecular synthesis. Astrophysical Journal, 1980, 236, 492.	4.5	66
7	Reactions of mass-selected cluster ions in a thermal bath gas. International Reviews in Physical Chemistry, 1998, 17, 147-184.	2.3	56
8	Low-energy electron attachment to SF6. I. Kinetic modeling of nondissociative attachment. Journal of Chemical Physics, 2007, 127, 244303.	3.0	53
9	Flowing afterglow apparatus for the study of ionâ€“molecule reactions at high temperatures. Review of Scientific Instruments, 1996, 67, 2142-2148.	1.3	48
10	Activation of Methane by FeO⁺: Determining Reaction Pathways through Temperature-Dependent Kinetics and Statistical Modeling. Journal of Physical Chemistry A, 2014, 118, 2029-2039.	2.5	46
11	Low-energy electron attachment to SF6. II. Temperature and pressure dependences of dissociative attachment. Journal of Chemical Physics, 2007, 127, 244304.	3.0	45
12	Teaching an Old Dog New Tricks: Using the Flowing Afterglow to Measure Kinetics of Electron Attachment to Radicals, Ionâ€Ion Mutual Neutralization, and Electron Catalyzed Mutual Neutralization. Advances in Atomic, Molecular and Optical Physics, 2012, 61, 209-294.	2.3	45
13	Evaluation of the exothermicity of the chemi-ionization reaction Sm + O â†’ SmO+ + eâ˜. Journal of Chemical Physics, 2015, 142, 134307.	3.0	44
14	Low-energy electron attachment to SF6. III. From thermal detachment to the electron affinity of SF6. Journal of Chemical Physics, 2007, 127, 244305.	3.0	43
15	Further Insight into the Reaction FeO⁺ + H₂ â†’ Fe⁺ + H₂O: Temperature Dependent Kinetics, Isotope Effects, and Statistical Modeling. Journal of Physical Chemistry A, 2014, 118, 6789-6797.	2.5	38
16	Collisional Stabilization and Thermal Dissociation of Highly Vibrationally Excited C9H12+Ions from the Reaction O2++ C9H12â†’ O2+ C9H12+â€. Journal of Physical Chemistry A, 2004, 108, 9652-9659.	2.5	33
17	Kinetics of the Reactions of F- with CF3Br and CF3I as a Function of Temperature, Kinetic Energy, Internal Temperature, and Pressure. The Journal of Physical Chemistry, 1994, 98, 3740-3746.	2.9	32
18	Pressure and temperature dependence of dissociative and non-dissociative electron attachment to CF3: Experiments and kinetic modeling. Journal of Chemical Physics, 2011, 135, 054306.	3.0	32

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19	Reactions of CH3OH2+, CH3OH2+.cntdot.(CH3OH), and (CH3)2OH+ with methanol: effect of solvation. Journal of the American Chemical Society, 1991, 113, 5932-5936.	13.7	29
20	The Reaction of O2+ + C8H10 (Ethylbenzene) as a Function of Pressure and Temperature. 2. Analysis of Collisional Energy Transfer of Highly Excited C8H10+. Journal of Physical Chemistry A, 2004, 108, 1574-1581.	2.5	28
21	Behavior of rate coefficients for ion-ion mutual neutralization, 300â€“550 K. Journal of Chemical Physics, 2012, 136, 204306.	3.0	28
22	Spin-inversion and spin-selection in the reactions FeO⁺ + H₂ and Fe⁺ + N₂O. Physical Chemistry Chemical Physics, 2015, 17, 19709-19717.	2.8	28
23	Branching ratios and rate constants for reactions of 16Oâ˙ and 18Oâ˙ with N2O and 14N15N16O. Journal of Chemical Physics, 1990, 92, 3448-3452.	3.0	27
24	Reexamination of ionospheric chemistry: high temperature kinetics, internal energy dependences, unusual isomers, and corrections. Physical Chemistry Chemical Physics, 2006, 8, 2557.	2.8	27
25	Aluminum Cluster Anion Reactivity with Singlet Oxygen: Evidence of Al₉^{â€“} Stability. Journal of Physical Chemistry C, 2011, 115, 9903-9908.	3.1	27
26	A physicsâ€based model for the ionization of samarium by the MOSC chemical releases in the upper atmosphere. Radio Science, 2017, 52, 559-577.	1.6	27
27	Iron cation catalyzed reduction of N2O by CO: gas-phase temperature dependent kinetics. Physical Chemistry Chemical Physics, 2013, 15, 11257.	2.8	26
28	Kinetics of chemi-ionization reactions of lanthanide metals (Nd, Sm) from 150 to 450 K. Journal of Chemical Physics, 2015, 143, 204303.	3.0	25
29	Temperature, kinetic energy, and internal energy dependences of the rate constant and branching fraction for the reaction of O+ (4S) with CO2. Journal of Chemical Physics, 1992, 96, 270-274.	3.0	24
30	Statistical modeling of the reactions Fe⁺ + N₂O â†’ FeO⁺ + N₂ and FeO⁺ + CO â†’ Fe⁺ + CO₂. Physical Chemistry Chemical Physics, 2015, 17, 19700-19708.	2.8	24
31	Rate constants for the reaction of O2+ with NO from 300 to 1400 K. Journal of Chemical Physics, 1999, 110, 10746-10748.	3.0	23
32	Ozone Reactions with Alkaline-Earth Metal Cations and Dications in the Gas Phase:â€‰ Room-Temperature Kinetics and Catalysis. Journal of Physical Chemistry A, 2007, 111, 13397-13402.	2.5	23
33	Artificial ionospheric modification: The Metal Oxide Space Cloud experiment. Radio Science, 2017, 52, 539-558.	1.6	23
34	Electronic, Rovibrational, and Translational Energy Effects in Ionâ˙Alkylbenzene Charge-Transfer Reactionsâ€. Journal of Physical Chemistry A, 2000, 104, 10336-10346.	2.5	22
35	On the Temperature Dependence of the Thermal Electron Attachment to SF6, SF5Cl, and POCl3. Zeitschrift Fur Physikalische Chemie, 2011, 225, 1405-1416.	2.8	22
36	Electron attachment to POCl3. III. Measurement and kinetic modeling of branching fractions. Journal of Chemical Physics, 2011, 134, 094310.	3.0	22

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37	A novel technique for measurement of thermal rate constants and temperature dependences of dissociative recombination: CO2+, CF3+, N2O+, C7H8+, C7H7+, C6H6+, C6H5+, C5H6+, C4H4+, and C3H3+. Journal of Chemical Physics, 2013, 138, 154201.	3.0	22
38	Kinetics of ion-ion mutual neutralization: Halide anions with polyatomic cations. Journal of Chemical Physics, 2014, 140, 224309.	3.0	22
39	Reaction of Mass-Selected, Thermalized V_nO_m⁺ Clusters with CCl₄. Journal of Physical Chemistry A, 2019, 123, 4817-4824.	2.5	22
40	A new instrument for thermal electron attachment at high temperature: NF3 and CH3Cl attachment rate constants up to 1100 K. Review of Scientific Instruments, 2009, 80, 034104.	1.3	20
41	Discrepancy Between Experimental and Theoretical Predictions of the Adiabaticity of Ti⁺+CH₃OH. Chemistry - A European Journal, 2017, 23, 11780-11783.	3.3	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 Ionâ€“Molecule Reactions. Journal of Physical Chemistry A, 2021, 125, 3503-3527.	2.5	19
43	Mutual neutralization of atomic rare-gas cations (Ne+, Ar+, Kr+, Xe+) with atomic halide anions (Clâ^',) Tj ETQq1 1 0.784314 rgBT /Over	3.0	18
44	Photochemical determination of O densities in the Martian thermosphere: Effect of a revised rate coefficient. Geophysical Research Letters, 2017, 44, 8099-8106.	4.0	18
45	Electron attachment to POCl3: 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.	3.0	17
46	Experimental and modeling study of thermal rate coefficients and cross sections for electron attachment to C60. Journal of Chemical Physics, 2010, 132, 194307.	3.0	17
47	Kinetics of electron attachment to OH and HNO3 and mutual neutralization of Ar+ with NO2â^' and NO3â^' at 300 and 500 K. Journal of Chemical Physics, 2012, 136, 124307.	3.0	17
48	Dissociative electron attachment to C2F5 radicals. Journal of Chemical Physics, 2012, 137, 054310.	3.0	17
49	Temperature dependences for the reactions of O2â^'and Oâ^'with N and O atoms in a selected-ion flow tube instrument. Journal of Chemical Physics, 2013, 139, 144302.	3.0	17
50	Electron attachment to POCl3. II. Dependence of the attachment rate coefficients on gas and electron temperature. International Journal of Mass Spectrometry, 2011, 306, 123-128.	1.5	16
51	Effects of rotational, vibrational, and translational energy on the rate constants for the isotope exchange reactions OHâ^'+D2 and ODâ^'+H2. Journal of Chemical Physics, 1994, 100, 2748-2753.	3.0	15
52	Electron attachment to 14 halogenated alkenes and alkanes, 300-600 K. Journal of Chemical Physics, 2012, 137, 164306.	3.0	15
53	Determination of the SmO+ bond energy by threshold photodissociation of the cryogenically cooled ion. Journal of Chemical Physics, 2021, 155, 174303.	3.0	15
54	Electron attachment to CF3and CF3Br at temperatures up to 890 K: Experimental test of the kinetic modeling approach. Journal of Chemical Physics, 2013, 138, 204316.	3.0	13

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55	Kinetics of CO+ and CO2+ with N and O atoms. Journal of Chemical Physics, 2018, 148, 084305.	3.0	13
56	Au₂⁺ cannot catalyze conversion of methane to ethene at low temperature. Catalysis Science and Technology, 2019, 9, 2767-2780.	4.1	13
57	Kinetics of electron attachment to SF3CN, SF3C6F5, and SF3 and mutual neutralization of Ar+ with CNâ^' and C6F5â^'. Journal of Chemical Physics, 2011, 134, 044323.	3.0	12
58	Analysis by kinetic modeling of the temperature dependence of thermal electron attachment to CF3Br. Journal of Chemical Physics, 2012, 137, 024303.	3.0	12
59	Electronic structure of SmO and SmOâ^' via slow photoelectron velocity-map imaging spectroscopy and spin-orbit CASPT2 calculations. Journal of Chemical Physics, 2017, 147, 234311.	3.0	12
60	Lanthanides as Catalysts: Guided Ion Beam and Theoretical Studies of Sm⁺ + COS. Journal of Physical Chemistry A, 2018, 122, 737-749.	2.5	12
61	Temperature and Isotope Dependent Kinetics of Nickel-Catalyzed Oxidation of Methane by Ozone. Journal of Physical Chemistry A, 2018, 122, 6655-6662.	2.5	12
62	Thermal activation of methane by MgO⁺: temperature dependent kinetics, reactive molecular dynamics simulations and statistical modeling. Physical Chemistry Chemical Physics, 2020, 22, 8913-8923.	2.8	12
63	Kinetics of the reaction of O2+ with CH4 from 500 to 1400 K: A case for state specific chemistry. Journal of Chemical Physics, 2001, 114, 6112-6118.	3.0	11
64	Incorporating time-of-flight detection on a selected ion flow tube apparatus. International Journal of Mass Spectrometry, 2015, 377, 479-483.	1.5	11
65	Chemi-ionization reactions of La, Pr, Tb, and Ho with atomic O and La with N2O from 200 to 450 K. Journal of Chemical Physics, 2016, 145, 084302.	3.0	11
66	Redefining the Mechanism of O₂ Etching of Al_n^{â€“} Superatoms: An Early Barrier Controls Reactivity, Analogous to Surface Oxidation. Journal of Physical Chemistry Letters, 2020, 11, 217-220.	4.6	11
67	Methane Adducts of Gold Dimer Cations: Thermochemistry and Structure from Collision-Induced Dissociation and Association Kinetics. Journal of Physical Chemistry A, 2020, 124, 3335-3346.	2.5	11
68	Rate constants for reactions of NOâ^' with N2O, 14N15NO, and 15NO2. Journal of Chemical Physics, 1990, 92, 2342-2343.	3.0	10
69	Electron attachment to fluorocarbon radicals. Journal of Chemical Physics, 2012, 137, 214318.	3.0	10
70	Determining Rate Constants and Mechanisms for Sequential Reactions of Fe⁺ with Ozone at 500 K. Journal of Physical Chemistry A, 2017, 121, 24-30.	2.5	10
71	Thermal Kinetics of Al_n^{â€“} + O₂ (n = 2â€“30): Measurable Reactivity of Al₁₃^{â€“}. Journal of Physical Chemistry A, 2019, 123, 6123-6129.	2.5	10
72	Temperature dependences of rate coefficients for electron catalyzed mutual neutralization. Journal of Chemical Physics, 2011, 135, 024204.	3.0	9

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73	Selected-ion flow tube temperature-dependent measurements for the reactions of O2+ with N atoms and N2+ with O atoms. Journal of Chemical Physics, 2015, 142, 154305.	3.0	9
74	The Role of Nonâ€Reactive Binding Sites in the AlVO 4 + +CO/AlVO 3 + +N 2 O Catalytic Cycle. ChemPhysChem, 2018, 19, 2835-2838.	2.1	9
75	Quantifying the Competition between Intersystem Crossing and Spin-Conserved Pathways in the Thermal Reaction of V⁺ + N₂O. Journal of Physical Chemistry A, 2020, 124, 30-38.	2.5	9
76	Cyclotrimerization of Acetylene under Thermal Conditions: Gas-Phase Kinetics of V⁺ and Fe⁺ + C₂H₂. Journal of Physical Chemistry A, 2021, 125, 9327-9337.	2.5	8
77	Kinetics and Product Branching Fractions of Reactions between a Cation and a Radical: Ar⁺ + CH₃ and O₂⁺ + CH₃. Journal of Physical Chemistry A, 2015, 119, 952-958.	2.5	7
78	Reactivity from excited state 4FeO+ + CO sampled through reaction of ground state 4FeCO+ + N2O. Journal of Chemical Physics, 2016, 144, 234303.	3.0	7
79	Analysis of the Pressure and Temperature Dependence of the Complex-Forming Bimolecular Reaction CH3OCH3 + Fe+. Journal of Physical Chemistry A, 2016, 120, 5264-5273.	2.5	7
80	Temperature and Pressure Dependences of the Reactions of Fe⁺ with Methyl Halides CH₃X (X = Cl, Br, I): Experiments and Kinetic Modeling Results. Journal of Physical Chemistry A, 2017, 121, 4058-4068.	2.5	7
81	Surprising behaviors in the temperature dependent kinetics of diatomic interhalogens with anions and cations. Journal of Chemical Physics, 2017, 146, 214307.	3.0	7
82	Association Between Meteor Radio Afterglows and Optical Persistent Trains. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA028053.	2.4	7
83	Coupling an electrospray source and a solids probe/chemical ionization source to a selected ion flow tube apparatus. Review of Scientific Instruments, 2015, 86, 084101.	1.3	6
84	Kinetics of First-Row Transition Metal Cations (V+, Fe+, Co+) with OCS at Thermal Energies. Journal of Physical Chemistry A, 2018, 122, 4246-4251.	2.5	5
85	Mechanistic details of the MnO+ + H2/D2 reaction through temperature-dependent kinetics and statistical modeling. International Journal of Mass Spectrometry, 2019, 435, 26-33.	1.5	5
86	Structures and Electron Affinities of Aluminum Hydride Clusters Al_nH (n =) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	2.5	5
87	On the Role of Hydrogen Atom Transfer (HAT) in Thermal Activation of Methane by MnO⁺: Entropy vs. Energy. Zeitschrift Fur Physikalische Chemie, 2019, 233, 771-783.	2.8	4
88	Role of Spin in the Catalytic Oxidation of CO by N2O Enabled by Co+: New Insights from Temperature-Dependent Kinetics and Statistical Modeling. Journal of Physical Chemistry A, 2020, 124, 7966-7972.	2.5	4
89	Gas-Phase Anionic Metal Clusters are Model Systems for Surface Oxidation: Kinetics of the Reactions of M_n^{â€“} with O₂ (M = V, Cr, Co, Ni; n = 1â€“15). Journal of Physical Chemistry A, 2021, 125, 2069-2076.	2.5	4
90	Electronic structure of NdO via slow photoelectron velocity-map imaging spectroscopy of NdO---. Journal of Chemical Physics, 2021, 155, 114305.	3.0	4

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91	Effect of Intersystem Crossings on the Kinetics of Thermal Ionâ€“Molecule Reactions: Ti⁺ + O₂, CO₂, and N₂O. Journal of Physical Chemistry A, 2022, 126, 859-869.	2.5	4
92	Electron attachment to C2fluorocarbon radicals at high temperature. Journal of Chemical Physics, 2013, 139, 184306.	3.0	3
93	Time-of-flight detection coupled to a flowing afterglow: Improvements and characterization. International Journal of Mass Spectrometry, 2016, 403, 27-31.	1.5	3
94	Calculations of the active mode and energetic barrier to electron attachment to CF₃ and comparison with kinetic modeling of experimental results. Physical Chemistry Chemical Physics, 2016, 18, 31064-31071.	2.8	3
95	Barrierless methane-to-methanol conversion: the unique mechanism of AlO⁺. Physical Chemistry Chemical Physics, 2020, 22, 14544-14550.	2.8	3
96	Catalytic Oxidation of CO by N₂O Enabled by Al₂O_{2/3}⁺: Temperature Dependent Kinetics and Statistical Modeling. Journal of Physical Chemistry A, 2020, 124, 1705-1711.	2.5	3
97	Temperature and energy dependences of ionâ€“molecule reactions: Studies inspired by Diethard BÃ¶hme. Mass Spectrometry Reviews, 2021, , .	5.4	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, , .	2.8	3
99	Electron attachment and positive ion chemistry of monohydrogenated fluorocarbon radicals. Journal of Chemical Physics, 2015, 143, 074309.	3.0	2
100	Kinetics of Cations with C2 Hydrofluorocarbon Radicals. Journal of Physical Chemistry A, 2017, 121, 8061-8068.	2.5	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.	2.8	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, .	12.8	2
103	Thermal rate constants for electron attachment to N2O: An example of endothermic attachment. Journal of Chemical Physics, 2020, 153, 074306.	3.0	1
104	Arrhenius behavior of electron attachment to CH3Br from 303 to 1100K. International Journal of Mass Spectrometry, 2014, 365-366, 75-79.	1.5	0
105	An experimental and statistical modeling study of the reactivity of Co+(CH3Br)n (nÂ= 0,1) with methyl bromide. International Journal of Mass Spectrometry, 2021, 469, 116671.	1.5	0