Nicholas S Shuman

List of Publications by Year
in descending order

117	1,978	304743	345221
papers	citations	22 h-index	36 g-index

117	117	117	1418
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Bond-Selective Control of a Heterogeneously Catalyzed Reaction. Science, 2008, 319, 790-793.	12.6	201
2	Ambient and Modified Atmospheric Ion Chemistry: From Top to Bottom. Chemical Reviews, 2015, 115, 4542-4570.	47.7	107
3	Specific Rate Constants k(E) of the Dissociation of the Halobenzene Ions: Analysis by Statistical Unimolecular Rate Theories. Journal of Physical Chemistry A, 2009, 113, 573-582.	2.5	78
4	On the ionization and dissociative photoionization of iodomethane: a definitive experimental enthalpy of formation of CH3I. Physical Chemistry Chemical Physics, 2009, 11, 11013.	2.8	71
5	Surface Temperature Dependence of Methane Activation on Ni(111). Journal of Physical Chemistry C, 2009, 113, 20618-20622.	3.1	54
6	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
7	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
8	Evaluation of the exothermicity of the chemi-ionization reaction Sm + O â†' SmO+ + eâ˜'. Journal of Chemical Physics, 2015, 142, 134307.	3.0	44
9	Temperature Dependence of the OH^{â€“} + CH₃I Reaction Kinetics. Experimental and Simulation Studies and Atomic-Level Dynamics. Journal of Physical Chemistry A, 2013, 117, 14019-14027.	2.5	40
10	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
11	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
12	Behavior of rate coefficients for ion-ion mutual neutralization, 300â€“550 K. Journal of Chemical Physics, 2012, 136, 204306.	3.0	28
13	Spin-inversion and spin-selection in the reactions FeO⁺ + H₂ and Fe⁺ + N₂O. Physical Chemistry Chemical Physics, 2015, 17, 19709-19717.	2.8	28
14	Aluminum Cluster Anion Reactivity with Singlet Oxygen: Evidence of Al₉^{â€“} Stability. Journal of Physical Chemistry C, 2011, 115, 9903-9908.	3.1	27
15	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
16	Iron cation catalyzed reduction of N2O by CO: gas-phase temperature dependent kinetics. Physical Chemistry Chemical Physics, 2013, 15, 11257.	2.8	26
17	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
18	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

#	Article	IF	Citations
19	Artificial ionospheric modification: The Metal Oxide Space Cloud experiment. Radio Science, 2017, 52, 539-558.	1.6	23
20	Experimental Thermochemistry of SiCl3R (R = Cl, H, CH3, C2H5, C2H3, CH2Cl, SiCl3), SiCl3+, and SiCl3â€¢. Journal of Physical Chemistry A, 2009, 113, 9458-9466.	2.5	22
21	Kinetics following addition of sulfur fluorides to a weakly ionized plasma from 300 to 500 K: Rate constants and product determinations for ionâ€“ion mutual neutralization and thermal electron attachment to SF5, SF3, and SF2. Journal of Chemical Physics, 2010, 133, 234304.	3.0	22
22	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
23	Electron attachment to POCl3. III. Measurement and kinetic modeling of branching fractions. Journal of Chemical Physics, 2011, 134, 094310.	3.0	22
24	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
25	Kinetics of ion-ion mutual neutralization: Halide anions with polyatomic cations. Journal of Chemical Physics, 2014, 140, 224309.	3.0	22
26	Reaction of Mass-Selected, Thermalized V_nO_m⁺ Clusters with CCl₄. Journal of Physical Chemistry A, 2019, 123, 4817-4824.	2.5	22
27	Heats of Formation of HCCl₃, HCCl₂Br, HCClBr₂, HCBr₃, and Their Fragment Ions Studied by Threshold Photoelectron Photoion Coincidence. Journal of Physical Chemistry A, 2008, 112, 10533-10538.	2.5	21
28	Variable Electron and Neutral Density Attachment Mass Spectrometry: Temperature-Dependent Kinetics of Electron Attachment to PSCl₃ and PSCl₂ and Mutual Neutralization of PSCl₂^{â^’} and PSCl^{â^’} with Ar⁺. Journal of Physical Chemistry A, 2010, 114, 11100-11108.	2.5	21
29	Dissociative Photoionization Study of Neopentane: A Path to an Accurate Heat of Formation of the t-Butyl Ion, t-Butyl Iodide, and t-Butyl Hydroperoxide. Journal of Physical Chemistry A, 2010, 114, 804-810.	2.5	20
30	Tunneling in a Simple Bond Scission: The Surprising Barrier in the H Loss from HCOOH⁺. Journal of Physical Chemistry A, 2010, 114, 10016-10023.	2.5	20
31	Exploring the Reactions of Fe⁺ and FeO⁺ with NO and NO₂. Journal of Physical Chemistry A, 2012, 116, 11500-11508.	2.5	20
32	TPEPICO Spectroscopy of Vinyl Chloride and Vinyl Iodide: Neutral and Ionic Heats of Formation and Bond Energies. Journal of Physical Chemistry A, 2008, 112, 5647-5652.	2.5	19
33	Discrepancy Between Experimental and Theoretical Predictions of the Adiabaticity of Ti⁺+CH₃OH. Chemistry - A European Journal, 2017, 23, 11780-11783.	3.3	19
34	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
35	Heats of Formation of t-Butyl Peroxy Radical and t-Butyl Diazyl Ion: RRKM vs SSACM Rate Theories in Systems with Kinetic and Competitive Shifts. Journal of Physical Chemistry A, 2010, 114, 232-240.	2.5	18
36	The Importance of NO⁺(H₂O)₄ in the Conversion of NO⁺(H₂O)_n to H₃O⁺(H₂O)_n: I. Kinetics Measurements and Statistical Rate Modeling. Journal of Physical Chemistry A, 2011, 115, 7582-7590.	2.5	18

#	Article	IF	Citations
37	Mutual neutralization of atomic rare-gas cations (Ne+, Ar+, Kr+, Xe+) with atomic halide anions (Clâ^',) Tj ETQq1 1 0.784314 rgBT /Ov	3.0	18
38	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
39	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
40	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
41	Dissociative electron attachment to C2F5 radicals. Journal of Chemical Physics, 2012, 137, 054310.	3.0	17
42	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
43	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
44	Experimental and Theoretical Kinetics for the H₂O⁺ + H₂/D₂ â†' H₃O⁺/H₂DO⁺ + H/D Reactions: Observation of the Rotational Effect in the Temperature Dependence. Journal of Physical Chemistry A, 2014, 118, 11485-11489.	2.5	16
45	Electron attachment to 14 halogenated alkenes and alkanes, 300-600 K. Journal of Chemical Physics, 2012, 137, 164306.	3.0	15
46	One- and Two-Dimensional Translational Energy Distributions in the Iodine-Loss Dissociation of 1,2-C₂H₄I₂⁺ and 1,3-C₃H₆I₂⁺: What Does This Mean?. Journal of Physical Chemistry A, 2012, 116, 2833-2844.	2.5	15
47	Determination of the SmO+ bond energy by threshold photodissociation of the cryogenically cooled ion. Journal of Chemical Physics, 2021, 155, 174303.	3.0	15
48	Electron Attachment to Fe(CO)_n (n = 0â€“5). Journal of Physical Chemistry A, 2013, 117, 1102-1109.	2.5	14
49	Heat of Formation of the Allyl Ion by TPEPICO Spectroscopy. Journal of Physical Chemistry A, 2009, 113, 10710-10716.	2.5	13
50	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
51	Kinetics of CO+ and CO2+ with N and O atoms. Journal of Chemical Physics, 2018, 148, 084305.	3.0	13
52	Au₂⁺ cannot catalyze conversion of methane to ethene at low temperature. Catalysis Science and Technology, 2019, 9, 2767-2780.	4.1	13
53	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
54	Analysis by kinetic modeling of the temperature dependence of thermal electron attachment to CF3Br. Journal of Chemical Physics, 2012, 137, 024303.	3.0	12

#	Article	IF	Citations
55	Temperature-dependent kinetic measurements and quasi-classical trajectory studies for the OH+ + H2/D2 â†' H2O+/HDO+ + H/D reactions. Journal of Chemical Physics, 2015, 143, 114310.	3.0	12
56	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
57	Lanthanides as Catalysts: Guided Ion Beam and Theoretical Studies of Sm⁺ + COS. Journal of Physical Chemistry A, 2018, 122, 737-749.	2.5	12
58	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
59	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
60	Isotope-Selective Chemical Vapor Deposition via Vibrational Activation. Journal of Physical Chemistry C, 2008, 112, 9822-9827.	3.1	11
61	Incorporating time-of-flight detection on a selected ion flow tube apparatus. International Journal of Mass Spectrometry, 2015, 377, 479-483.	1.5	11
62	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
63	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
64	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
65	Dissociation dynamics of energy-selected acetic acid ions: The gas phase heat of formation of the acetyl ion. International Journal of Mass Spectrometry, 2010, 294, 88-92.	1.5	10
66	Electron attachment to fluorocarbon radicals. Journal of Chemical Physics, 2012, 137, 214318.	3.0	10
67	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
68	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
69	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
70	Dissociative recombination of HCl+, H2Cl+, DCl+, and D2Cl+ in a flowing afterglow. Journal of Chemical Physics, 2016, 145, 244312.	3.0	9
71	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
72	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

#	Article	IF	Citations
73	Electron Attachment to C₇F₁₄, Thermal Detachment from C₇F₁₄^{â€“}, the Electron Affinity of C₇F₁₄, and Neutralization of C₇F₁₄^{â€“} by Ar⁺. Journal of Physical Chemistry A, 2012, 116, 10293-10300.	2.5	8
74	Reactions of Fe⁺ and FeO⁺ with C₂H₂, C₂H₄, and C₂H₆: Temperature-Dependent Kinetics. Journal of Physical Chemistry A, 2013, 117, 10178-10185.	2.5	8
75	Flowing afterglow measurements of the density dependence of gas-phase ion-ion mutual neutralization reactions. Journal of Chemical Physics, 2013, 138, 204302.	3.0	8
76	Electron attachment to the interhalogen compounds ClF, ICl, and IBr. Physical Review A, 2016, 93, .	2.5	8
77	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
78	Evidence of a Surprising Channeling of Ring-Opening Energy to the H2Product in the H + c-C3H6â† ' H2+ C3H5Abstraction Reaction. Journal of Physical Chemistry A, 2003, 107, 8380-8382.	2.5	7
79	Electron attachment to sulfur oxyhalides: SOF2, SOCl2, SO2F2, SO2Cl2, and SO2FCl attachment rate coefficients, 300â€“900 K. Journal of Chemical Physics, 2010, 132, 214302.	3.0	7
80	Dissociation Dynamics and Thermochemistry of Tin Species, (CH₃)₄Sn and (CH₃)₆Sn₂, by Threshold Photoelectronâ^'Photoion Coincidence Spectroscopy. Journal of Physical Chemistry A, 2011, 115, 402-409.	2.5	7
81	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
82	Dissociative recombination and mutual neutralization of heavier molecular ions: C10H8+, WF5+, and CnFm+. Journal of Chemical Physics, 2015, 142, 114304.	3.0	7
83	Reactivity from excited state 4FeO+ + CO sampled through reaction of ground state 4FeCO+ + N2O. Journal of Chemical Physics, 2016, 144, 234303.	3.0	7
84	Mutual neutralization of He+ with the anions Clâ^', Brâ^', Iâ^', and SF6â^'. Journal of Chemical Physics, 2016, 144, 204309.	3.0	7
85	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
86	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
87	Surprising behaviors in the temperature dependent kinetics of diatomic interhalogens with anions and cations. Journal of Chemical Physics, 2017, 146, 214307.	3.0	7
88	Association Between Meteor Radio Afterglows and Optical Persistent Trains. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA028053.	2.4	7
89	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
90	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

#	Article	IF	Citations
91	Mutual neutralization of H+ and D+ with the atomic halide anions Clâ^',Brâ^', and Iâ^'. Journal of Chemical Physics, 2018, 149, 044303.	3.0	5
92	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
93	Structures and Electron Affinities of Aluminum Hydride Clusters Al_nH (n =) Tj ETQq1 1 0.784314 rgBT /Ove	2.5	5
94	Reactivity of⁴Fe⁺(CO)_{n=0â€“2}+ O₂: oxidation of CO by O₂at an isolated metal atom. Physical Chemistry Chemical Physics, 2017, 19, 8768-8777.	2.8	4
95	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
96	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
97	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
98	Electronic structure of NdO via slow photoelectron velocity-map imaging spectroscopy of NdO---. Journal of Chemical Physics, 2021, 155, 114305.	3.0	4
99	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
100	Communication: Transfer ionization in a thermal reaction of a cation and anion: Ar+ with Brâ^' and Iâ^'. Journal of Chemical Physics, 2013, 139, 171102.	3.0	3
101	Time-of-flight detection coupled to a flowing afterglow: Improvements and characterization. International Journal of Mass Spectrometry, 2016, 403, 27-31.	1.5	3
102	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
103	Barrierless methane-to-methanol conversion: the unique mechanism of AlO⁺. Physical Chemistry Chemical Physics, 2020, 22, 14544-14550.	2.8	3
104	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
105	Temperature and energy dependences of ionâ€“molecule reactions: Studies inspired by Diethard BÃ¶hme. Mass Spectrometry Reviews, 2021, , .	5.4	3
106	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
107	Electron attachment and positive ion chemistry of monohydrogenated fluorocarbon radicals. Journal of Chemical Physics, 2015, 143, 074309.	3.0	2
108	Demonstration of the branching ratio inversion for the electron attachment to phosphoryl chloride POCl3 in the gas phase between 300 and 200 K. Chemical Physics Letters, 2016, 650, 144-147.	2.6	2

#	Article	IF	Citations
109	Kinetics of Cations with C2 Hydrofluorocarbon Radicals. Journal of Physical Chemistry A, 2017, 121, 8061-8068.	2.5	2
110	Reactions of C+ + Clâ˜, Brâ˜, and Iâ˜â€"A comparison of theory and experiment. Journal of Chemical Physics, 2019, 151, 244301.	3.0	2
111	Toward a quantitative analysis of the temperature dependence of electron attachment to SF6. Journal of Chemical Physics, 2020, 152, 124302.	3.0	2
112	Collisional stabilization of ion-molecule association complexes in He, H2, or N2 buffer gases. International Journal of Mass Spectrometry, 2021, 460, 116494.	1.5	2
113	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
114	Thermal rate constants for electron attachment to N2O: An example of endothermic attachment. Journal of Chemical Physics, 2020, 153, 074306.	3.0	1
115	Contrast between the mechanisms for dissociative electron attachment to CH3SCN and CH3NCS. Journal of Chemical Physics, 2018, 148, 184303.	3.0	0
116	Measurement of rate constants for ion-ion reactions â€“ O+ and N+ with the atomic halide anions Clâ˜, Brâ˜, and Iâ˜ at thermal energies. Chemical Physics Letters, 2020, 760, 137973.	2.6	0
117	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