Zhigang Sun

List of Publications by Year
in descending order

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65 papers	2,672 citations	159358 30 h-index	189595 50 g-index
66 all docs	66 docs citations	66 times ranked	1163 citing authors

#	Article	IF	Citations
1	Quantum interference between spin-orbit split partial waves in the F + HD â†' HF + D reaction. Science, 2021, 371, 936-940.	6.0	17
2	Interaction-Asymptotic Region Decomposition Method for an Insertion Reaction: Application to the S(¹D) + H₂ Reaction. Journal of Physical Chemistry A, 2021, 125, 2007-2018.	1.1	5
3	Interaction-Asymptotic Region Decomposition Method for a Triatomic Reactive Scattering with Symmetry Adoption. Journal of Physical Chemistry A, 2021, 125, 2460-2471.	1.1	4
4	Quantum Wave Packet Treatment of Cold Nonadiabatic Reactive Scattering at the State-To-State Level. Journal of Physical Chemistry A, 2021, 125, 10111-10120.	1.1	15
5	State-to-state chemical kinetic mechanism for HF chemical lasers. Combustion Theory and Modelling, 2020, 24, 129-141.	1.0	3
6	Observation of the geometric phase effect in the H+HDâ†'H2+D reaction below the conical intersection. Nature Communications, 2020, 11, 3640.	5.8	30
7	Quantum interference in H + HD â†' H ₂ + D between direct abstraction and roaming insertion pathways. Science, 2020, 368, 767-771.	6.0	52
8	Experimental and Theoretical Study of the Vibrationally Excited Reaction Cl + D₂ (v) Tj ETQq0 0 0 rgBT /Overlock 10	1.1	3
9	Imaging the State-to-State Dynamics of the H + D₂ â†' HD + D Reaction at 1.42 eV. Journal of Physical Chemistry Letters, 2020, 11, 1222-1227.	2.1	8
10	Vibrationally resolved above-threshold ionization in NO molecules by intense ultrafast two-color laser pulses: An experimental and theoretical study. Physical Review A, 2019, 100, .	1.0	9
11	Dynamics studies of the H + HBr reaction: Based on a new potential energy surface. Journal of Chemical Physics, 2019, 151, 185102.	1.2	17
12	Coherent interference of molecular electronic states in NO by two-color femtosecond laser pulses. Physical Review A, 2019, 99, .	1.0	18
13	Enhanced reactivity of fluorine with para-hydrogen in cold interstellar clouds by resonance-induced quantum tunnelling. Nature Chemistry, 2019, 11, 744-749.	6.6	34
14	An interaction-asymptotic region decomposition method for general state-to-state reactive scatterings. Journal of Chemical Physics, 2019, 150, 134105.	1.2	23
15	High Order Split Operators for the Time-Dependent Wavepacket method of Triatomic Reactive Scattering in Hyperspherical Coordinates. Entropy, 2019, 21, 979.	1.1	4
16	Direct observation of forward-scattering oscillations in the H+HDâ†'H2+D reaction. Nature Chemistry, 2018, 10, 653-658.	6.6	46
17	Dynamical resonances in $$hbox {F}+ {hbox {H}}_2/hbox {HD}$$ F + H 2 / HD reaction scattering. Theoretical Chemistry Accounts, 2018, 137, 1.	0.5	3
18	Quantum real wave packet method by using spectral difference for a triatomic reactive scattering. Chemical Physics, 2018, 509, 20-29.	0.9	3

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19	State-to-state mode specificity in H + DOH(Î½OH = 1) â†' HD + OH(Î½2 = 0) reaction: vibrational non-adiabaticity or local-mode excitation?. Physical Chemistry Chemical Physics, 2018, 20, 191-198.	1.3	12
20	A new potential energy surface of the OH₂⁺ system and state-to-state quantum dynamics studies of the O⁺ + H₂ reaction. Physical Chemistry Chemical Physics, 2018, 20, 1039-1050.	1.3	19
21	Observation of the geometric phase effect in the H + HD â†' H ₂ + D reaction. Science, 2018, 362, 1289-1293.	6.0	99
22	Quantum wavepacket method for state-to-state reactive cross sections in hyperspherical coordinates. Journal of Chemical Physics, 2018, 149, 174103.	1.2	11
23	Dynamical resonances in chemical reactions. Chemical Society Reviews, 2018, 47, 6744-6763.	18.7	34
24	Launching Phonon Polaritons by Natural Boron Nitride Wrinkles with Modifiable Dispersion by Dielectric Environments. Advanced Materials, 2017, 29, 1702494.	11.1	53
25	Calculated vibrational states of ozone up to dissociation. Journal of Chemical Physics, 2016, 144, 074302.	1.2	39
26	A reactant-coordinate-based wave packet method for full-dimensional state-to-state quantum dynamics of tetra-atomic reactions: Application to both the abstraction and exchange channels in the H + H2O reaction. Journal of Chemical Physics, 2016, 144, 064104.	1.2	36
27	State-to-state differential cross sections for D2 + OH â†' D + DOH reaction: Influence of vibrational excitation of OH reactant. Journal of Chemical Physics, 2016, 145, 134308.	1.2	21
28	A reactant-coordinate-based approach to state-to-state differential cross sections for tetratomic reactions. Journal of Chemical Physics, 2016, 145, 184106.	1.2	17
29	State-to-state mode selectivity in the HD + OH reaction: Perspectives from two product channels. Journal of Chemical Physics, 2016, 144, 214303.	1.2	20
30	Communication: State-to-state dynamics of the Cl + H2O â†' HCl + OH reaction: Energy flow into reaction coordinate and transition-state control of product energy disposal. Journal of Chemical Physics, 2015, 142, 241101.	1.2	39
31	An accurate potential energy surface for the F + H2 â†' HF + H reaction by the coupled-cluster method. Journal of Chemical Physics, 2015, 142, 024303.	1.2	40
32	Development of the potential energy surface and current stage of the quantum dynamics studies of the Fâ€‰+â€‰H₂/HD reaction. International Journal of Quantum Chemistry, 2015, 115, 689-699.	1.0	9
33	Theoretical Study of FH₂^{â€“} Electron Photodetachment Spectra on New Ab Initio Potential Energy Surfaces. Journal of Physical Chemistry A, 2015, 119, 12193-12208.	1.1	12
34	Extremely short-lived reaction resonances in Cl + HD (v = 1) â†' DCl + H due to chemical bond softening. Science, 2015, 347, 60-63.	6.0	91
35	An improved Lobatto discrete variable representation by a phase optimisation and variable mapping method. Chemical Physics, 2015, 458, 41-51.	0.9	6
36	State-to-state reaction dynamics of 18O+32O2 studied by a time-dependent quantum wavepacket method. Journal of Chemical Physics, 2015, 142, 064308.	1.2	41

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37	H + H2 quantum dynamics using potential energy surfaces based on the XYG3 type of doubly hybrid density functionals: Validation of the density functionals. Journal of Chemical Physics, 2015, 142, 084107.	1.2	11
38	Kinetic isotope effect of the 16O + 36O2 and 18O + 32O2 isotope exchange reactions: Dominant role of reactive resonances revealed by an accurate time-dependent quantum wavepacket study. Journal of Chemical Physics, 2015, 142, 174312.	1.2	70
39	Effect of Reagent Vibrational Excitation on the Dynamics of F + H₂(v = 1, j =) Tj ETQq1 1 0.784314 rgBT /Ov	1.1	11
40	State-to-State Mode Specificity: Energy Sequestration and Flow Gated by Transition State. Journal of the American Chemical Society, 2015, 137, 15964-15970.	6.6	35
41	Time-dependent quantum wave packet and quasiclassical trajectory studies of the Au(²S) + H₂(X¹â^'⁺_g) â†' AuH(X¹â^'⁺_g) + H(²S) reaction. Molecular Physics, 2014, 112, 2945-2953.	0.8	15
42	Calculation of state-to-state differential and integral cross sections for atom-diatom reactions with transition-state wave packets. Journal of Chemical Physics, 2014, 140, 234110.	1.2	31
43	Product fine-structure resolved photodissociation dynamics: The A band of H2O. Journal of Chemical Physics, 2014, 140, 024310.	1.2	22
44	Calculation of state-to-state cross sections for triatomic reaction by the multi-configuration time-dependent Hartree method. Journal of Chemical Physics, 2014, 140, 164108.	1.2	11
45	Calculation of the state-to-state S-matrix for tetra-atomic reactions with transition-state wave packets: H2/D2 + OH â†' H/D + H2O/HOD. Journal of Chemical Physics, 2014, 141, 154112.	1.2	31
46	Communication: Rigorous quantum dynamics of O + O2 exchange reactions on an ab initio potential energy surface substantiate the negative temperature dependence of rate coefficients. Journal of Chemical Physics, 2014, 141, 081102.	1.2	34
47	Efficient Fourth-Order Split Operator for Solving the Triatomic Reactive SchrÃ¶dinger Equation in the Time-Dependent Wavepacket Approach. Journal of Physical Chemistry A, 2014, 118, 9801-9810.	1.1	19
48	Coriolis coupling effect of state-to-state quantum dynamics for HeÂ+ÂHeH+. Theoretical Chemistry Accounts, 2014, 133, 1.	0.5	6
49	Isotope-Dependent Rotational States Distributions Enhanced by Dynamic Resonance States: A Comparison Study of the F + HD â†' HF(v_{HF} = 2) + D and F + H₂ â†' HF(v_{HF} = 2) + H Reaction. Journal of Physical Chemistry Letters, 2014, 5, 3049-3055.	2.1	15
50	Dynamical Resonances Accessible Only by Reagent Vibrational Excitation in the F + HDâ†'HF + D Reaction. Science, 2013, 342, 1499-1502.	6.0	107
51	Higher-order split operator schemes for solving the SchrÃ¶dinger equation in the time-dependent wave packet method: applications to triatomic reactive scattering calculations. Physical Chemistry Chemical Physics, 2012, 14, 1827.	1.3	38
52	Experimental and Theoretical Differential Cross Sections for a Four-Atom Reaction: HD + OH â†' H ₂ O + D. Science, 2011, 333, 440-442.	6.0	152
53	Time-dependent wavepacket investigation of state-to-state reactive scattering of Cl with para-H2 including the open-shell character of the Cl atom. Journal of Chemical Physics, 2010, 132, 034308.	1.2	38
54	State-to-state quantum dynamics of OÂ+ÂO ₂ isotope exchange reactions reveals nonstatistical behavior at atmospheric conditions. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 555-558.	3.3	69

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55	Extraction of state-to-state reactive scattering attributes from wave packet in reactant Jacobi coordinates. Journal of Chemical Physics, 2010, 132, 084112.	1.2	119
56	Comparison of second-order split operator and Chebyshev propagator in wave packet based state-to-state reactive scattering calculations. Journal of Chemical Physics, 2009, 130, 174102.	1.2	95
57	A Reactant-Coordinate-Based Time-Dependent Wave Packet Method for Triatomic State-to-State Reaction Dynamics: Application to the H + O₂ Reaction. Journal of Physical Chemistry A, 2009, 113, 4145-4154.	1.1	133
58	State-to-State Dynamics of H + O2 Reaction, Evidence for Nonstatistical Behavior. Journal of the American Chemical Society, 2008, 130, 14962-14963.	6.6	52
59	Quantum theory of (femtosecond) time-resolved stimulated Raman scattering. Journal of Chemical Physics, 2008, 128, 144114.	1.2	63
60	Probing the resonance potential in the F atom reaction with hydrogen deuteride with spectroscopic accuracy. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 12662-12666.	3.3	75
61	The Extent of Nonâ€“Born-Oppenheimer Coupling in the Reaction of Cl(² P) with para- H ₂. Science, 2008, 322, 573-576.	6.0	95
62	HF(vâ€² = 3) forward scattering in the F + H ₂ reaction: Shape resonance and slow-down mechanism. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 6227-6231.	3.3	72
63	Observation of Feshbach Resonances in the F + H2 -> HF + H Reaction. Science, 2006, 311, 1440-1443.	6.0	278
64	Aâ€Š2A2â†Xâ€Š2B1 absorption and Raman spectra of the OClO molecule: A three-dimensional time-dependent wave packet study. Journal of Chemical Physics, 2005, 122, 054316.	1.2	6
65	Autler-Townes Splitting in the Multiphoton Resonance Ionization Spectrum of Molecules Produced by Ultrashort Laser Pulses. Physical Review Letters, 2003, 91, 023002.	2.9	66