Piotr S Zuchowski

List of Publications by Year
in descending order

67	1,981	236925 25	254184 43
papers	citations	h-index	g-index

69	69	69	1387
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Reactions of ultracold alkali-metal dimers. Physical Review A, 2010, 81, .	2.5	202
2	Observation of the isotope effect in sub-kelvin reactions. Nature Chemistry, 2014, 6, 332-335.	13.6	126
3	Ultracold RbSr Molecules Can Be Formed by Magnetoassociation. Physical Review Letters, 2010, 105, 153201.	7.8	105
4	Hyperfine energy levels of alkali-metal dimers: Ground-state polar molecules in electric and magnetic fields. Physical Review A, 2008, 78, .	2.5	100
5	Directly probing anisotropy in atomâ€“molecule collisions through quantum scattering resonances. Nature Physics, 2017, 13, 35-38.	16.7	99
6	Observation of Feshbach resonances between alkali and closed-shell atoms. Nature Physics, 2018, 14, 881-884.	16.7	70
7	Time-Independent Coupled-Cluster Theory of the Polarization Propagator. Collection of Czechoslovak Chemical Communications, 2005, 70, 1109-1132.	1.0	62
8	Symmetry-adapted perturbation theory utilizing density functional description of monomers for high-spin open-shell complexes. Journal of Chemical Physics, 2008, 129, 084101.	3.0	58
9	Large Effects of Electric Fields on Atom-Molecule Collisions at Millikelvin Temperatures. Physical Review Letters, 2011, 106, 193201.	7.8	58
10	Low-energy collisions of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>NH</mml:mtext></mml:mrow><mml:mn>3</mml:mn></mml:msu xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>ND</mml:mtext></mml:mrow><mml:mn>3</mml:mn></mml:msu ultracold Rb atoms. Physical Review A, 2009, 79, .	2.5	54
11	Scattering lengths in isotopologues of the RbYb system. Physical Review A, 2013, 88, .	2.5	53
12	Ab initio potential energy surfaces for NH(Î£3â¯)â€“NH(Î£3â¯) with analytical long range. Journal of Chemical Physics, 2009, 131, 224314.	3.0	42
13	Symmetry-adapted perturbation theory based on unrestricted Kohn-Sham orbitals for high-spin open-shell van der Waals complexes. Journal of Chemical Physics, 2012, 137, 164104.	3.0	42
14	Rovibrational line-shape parameters for H2 in He and new H2-He potential energy surface. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 202, 308-320.	2.3	42
15	van der Waals coefficients for systems with ultracold polar alkali-metal molecules. Physical Review A, 2013, 87, .	2.5	41
16	Prospects for sympathetic cooling of polar molecules: NH with alkali-metal and alkaline-earth atoms â€“ a new hope. Faraday Discussions, 2009, 142, 191.	3.2	40
17	The prospects of sympathetic cooling of NH molecules with Li atoms. European Physical Journal D, 2011, 65, 151-160.	1.3	40
18	Prospects for producing ultracold<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi mathvariant="normal">N</mml:mi><mml:msub><mml:mi mathvariant="normal">H</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>molecules by sympathetic cooling: A survey of interaction potentials. Physical Review A, 2008, 78, .	2.5	38

#	Article	IF	Citations
19	Cold and ultracold NH-NH collisions in magnetic fields. Physical Review A, 2011, 83, .	2.5	38
20	Aurophilic Interactions from Wave Function, Symmetry-Adapted Perturbation Theory, and Rangehybrid Approaches. Journal of Chemical Theory and Computation, 2011, 7, 2399-2407.	5.3	37
21	Interaction between LiH molecule and Li atom from state-of-the-art electronic structure calculations. Journal of Chemical Physics, 2011, 134, 114109.	3.0	36
22	Cold collisions of N (⁴S) atoms and NH (³Î£) molecules in magnetic fields. Physical Chemistry Chemical Physics, 2011, 13, 3669-3680.	2.8	35
23	Density Functional Theory Approach to Noncovalent Interactions via Monomer Polarization and Pauli Blockade. Physical Review Letters, 2010, 104, 163001.	7.8	34
24	Prospects for sympathetic cooling of molecules in electrostatic, ac and microwave traps. European Physical Journal D, 2011, 65, 141-149.	1.3	29
25	Ground- and excited-state properties of the polar and paramagnetic RbSr molecule: A comparative study. Physical Review A, 2014, 90, .	2.5	28
26	H2 -He collisions: Ab initio theory meets cavity-enhanced spectra. Physical Review A, 2020, 101, .	2.5	24
27	The water-nitric oxide intermolecular potential-energy surface revisited. Journal of Chemical Physics, 2009, 130, 104303.	3.0	22
28	Atom-molecule collisions, spin relaxation, and sympathetic cooling in an ultracold spin-polarized Rb(S2)â^'SrF(Î£+2) mixture. Physical Review A, 2018, 98, .	2.5	22
29	Dispersion interaction of high-spin open-shell complexes in the random phase approximation. Journal of Chemical Physics, 2003, 119, 10497-10511.	3.0	21
30	Dual Hg-Rb magneto-optical trap. Optics Express, 2017, 25, 3165.	3.4	21
31	Modeling the electronic structures of the ground and excited states of the ytterbium atom and the ytterbium dimer: A modern quantum chemistry perspective. International Journal of Quantum Chemistry, 2019, 119, e25983.	2.0	21
32	Derivation of the supermolecular interaction energy from the monomer densities in the density functional theory. Chemical Physics Letters, 2010, 486, 160-165.	2.6	20
33	Cold and ultracold NHâ€“NH collisions: The field-free case. Journal of Chemical Physics, 2011, 134, 124309.	3.0	20
34	Magnetically tunable Feshbach resonances in Li+Er. Physical Review A, 2015, 92, .	2.5	19
35	Interaction potential for the quintet state of the O2â€“O2 dimer from symmetry-adapted perturbation theory based on DFT description of monomers. Chemical Physics Letters, 2008, 450, 203-209.	2.6	18
36	Nonadditive interactions in ns2 and spin-polarized ns metal atom trimers. Journal of Chemical Physics, 2008, 129, 134302.	3.0	18

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37	First-principle interaction potentials for metastable He(3S) and Ne(3P) with closed-shell molecules: Application to Penning-ionizing systems. Journal of Chemical Physics, 2013, 139, 014307.	3.0	18
38	An ab initio investigation of the O(3P)â€“H2(1Î£+g) van der Waals well. Physical Chemistry Chemical Physics, 2006, 8, 4420-4426.	2.8	17
39	Absolute frequency and isotope shift measurements of mercury ¹S₀â€“³P₁ transition. Optics Express, 2019, 27, 11069.	3.4	17
40	Pythonic Black-box Electronic Structure Tool (PyBEST). An open-source Python platform for electronic structure calculations at the interface between chemistry and physics. Computer Physics Communications, 2021, 264, 107933.	7.5	16
41	Benchmarking the Accuracy of Seniority-Zero Wave Function Methods for Noncovalent Interactions. Journal of Chemical Theory and Computation, 2019, 15, 4021-4035.	5.3	15
42	Ultracold mixtures of metastable He and Rb: Scattering lengths fromab initiocalculations and thermalization measurements. Physical Review A, 2014, 90, .	2.5	14
43	Interactions of transition metal atoms in high-spin states: Cr2, Scâ€“Cr, and Scâ€“Kr. Journal of Chemical Physics, 2007, 127, 244302.	3.0	13
44	First-order symmetry-adapted perturbation theory for multiplet splittings. Journal of Chemical Physics, 2018, 148, 164110.	3.0	12
45	Magnetic Feshbach resonances in ultracold collisions between Cs and Yb atoms. Physical Review A, 2019, 100, .	2.5	12
46	Magnetically tunable Feshbach resonances in ultracold gases of europium atoms and mixtures of europium and alkali-metal atoms. Physical Review A, 2018, 98, .	2.5	11
47	Ab Initio Study of Chemical Reactions of Cold SrF and CaF Molecules with Alkali-Metal and Alkaline-Earth-Metal Atoms: The Implications for Sympathetic Cooling. Journal of Physical Chemistry A, 2017, 121, 4152-4159.	2.5	10
48	Interatomic potentials of metal dimers: probing agreement between experiment and advancedab initiocalculations for van der Waals dimer Cd₂. International Reviews in Physical Chemistry, 2017, 36, 541-620.	2.3	10
49	A density functional theory approach to noncovalent interactions via interacting monomer densities. Physical Chemistry Chemical Physics, 2010, 12, 14686.	2.8	9
50	Optical Feshbach resonances and ground-state-molecule production in the RbHg system. Physical Review A, 2017, 96, .	2.5	9
51	Collisional line-shape effects in accurate He-perturbed H<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math> spectra. Journal of Quantitative Spectroscopy and Radiative Transfer, 2022, 277, 107951.	2.3	8
52	Experimental and theoretical study of the B(2)2Î£+â†' X(1)2Î£+ system in the KSr molecule. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 210, 217-224.	2.3	7
53	Photoionization cross sections of the 5S1/2 and 5P3/2 states of Rb in simultaneous magneto-optical trapping of Rb and Hg. Physical Review A, 2018, 98, .	2.5	7
54	Nature of intermolecular interaction in squaraine dimers. Scientific Reports, 2020, 10, 19670.	3.3	7

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55	Quantum chaos in Feshbach resonances of the ErYb system. New Journal of Physics, 2020, 22, 023024.	2.9	7
56	Ab initiointeraction potentials and scattering lengths for ultracold mixtures of metastable helium and alkali-metal atoms. Physical Review A, 2015, 91, .	2.5	6
57	Dataset of noncovalent intermolecular interaction energy curves for 24 small high-spin open-shell dimers. Journal of Chemical Physics, 2021, 154, 134106.	3.0	5
58	Evidence of Nonrigidity Effects in the Description of Low-Energy Anisotropic Molecular Collisions of Hydrogen Molecules with Excited Metastable Helium Atoms. Journal of Chemical Theory and Computation, 2020, 16, 2450-2459.	5.3	4
59	Kinetic Isotope Effect in Low-Energy Collisions between Hydrogen Isotopologues and Metastable Helium Atoms: Theoretical Calculations Including the Vibrational Excitation of the Molecule. Journal of Chemical Theory and Computation, 2021, 17, 1008-1016.	5.3	4
60	Rotational excitation of highly excited H2O by H2. Monthly Notices of the Royal Astronomical Society, 2021, 502, 5356-5361.	4.4	3
61	NO+Â+ÂH2: Potential energy surface and bound state calculations. Chemical Physics Letters, 2021, 771, 138511.	2.6	2
62	CHAPTER 5. Interactions of Atoms and Molecules in Cold Chemistry. RSC Theoretical and Computational Chemistry Series, 2017, , 203-275.	0.7	2
63	Supramolecular Approach to Tuning the Photophysical Properties of Quadrupolar Squaraines. Frontiers in Chemistry, 2021, 9, 800541.	3.6	1
64	Experimental set-up for study of collisions of cold mercury atoms for optical frequency clocks. , 2014, , .		0
65	Mass scaling in photoassociation of spin-singlet atoms. Journal of Physics: Conference Series, 2015, 635, 092140.	0.4	0
66	Interatomic potentials of van der Waals dimers Hg2and Cd2: Probing discrepancies between theory and experiment. Journal of Physics: Conference Series, 2017, 810, 012018.	0.4	0
67	Product-state distribution after isotopic substitution in ultracold atomâ€“molecule collisions. Journal of Physics B: Atomic, Molecular and Optical Physics, 2020, 53, 07LT01.	1.5	0