

Alexander N Petrov

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/7823429/publications.pdf>

Version: 2024-02-01

85
papers

2,243
citations

186265

28
h-index

243625

44
g-index

87
all docs

87
docs citations

87
times ranked

1134
citing authors

#	ARTICLE	IF	CITATIONS
1	Sensitivity of the YbOH molecule to P -odd effects in an external electric field. Physical Review A, 2022, 105, .	2.5	12
2	T -odd effects for the RaOH molecule in the excited vibrational state. Physical Review A, 2021, 103, .	2.5	15
3	Photon-spin-dependent contribution to the P,T -odd Faraday rotation effect for atoms. Journal of Physics B: Atomic, Molecular and Optical Physics, 2021, 54, 055001.	1.5	2
4	P,T -odd Faraday rotation in intracavity absorption spectroscopy with a molecular beam as a possible way to improve the sensitivity of the search for time-reflection-noninvariant effects in nature. Physical Review A, 2021, 103, .	2.5	3
5	Electric-field-dependent g factor for the ground state of lead monofluoride, PbF. Physical Review A, 2021, 104, .	2.5	1
6	Relativistic aspects of orbital and magnetic anisotropies in the chemical bonding and structure of lanthanide molecules. New Journal of Physics, 2021, 23, 085007.	2.9	7
7	P,T -odd Faraday rotation in intracavity absorption spectroscopy with particle beam as a possible way to improve the sensitivity of the search for the time reflection noninvariant effects in nature. Annals of Physics, 2021, 434, 168591.	2.8	1
8	Rovibrational structure of the ytterbium monohydroxide molecule and the P,T -violation searches. Journal of Chemical Physics, 2021, 155, 164301.	3.0	8
9	Calculating $^{179}\text{Hf}^+$ to Find the Spatial Parity and Time Invariance Violation Effects. Optics and Spectroscopy (English Translation of Optika i Spektroskopiya), 2021, 129, 941-947.	0.6	2
10	Effects of conical intersections on hyperfine quenching of hydroxyl OH in collision with an ultracold Sr atom. Scientific Reports, 2020, 10, 14130.	3.3	1
11	Calculation of the energy-level structure of the $^{179}\text{Hf}^+$ ion to search for parity-nonconservation effects. Physical Review A, 2020, 102, .	2.5	1
12	Photon-mediated charge exchange reactions between ^{39}K atoms and $^{40}\text{Ca}^+$ ions in a hybrid trap. Physical Chemistry Chemical Physics, 2020, 22, 10870-10881.	2.8	7
13	Energy levels of radium monofluoride RaF in external electric and magnetic fields to search for P - and T -violation effects. Physical Review A, 2020, 102, .	2.5	13
14	Interference between the E1 and M1 Amplitudes of the Transition from the H State to C of a ThO Molecule. Optics and Spectroscopy (English Translation of Optika i Spektroskopiya), 2019, 126, 331-335.	0.6	2
15	$^{179}\text{Hf}^+$ as a candidate to search for the nuclear weak quadrupole moment. Physical Review A, 2019, 99, .	2.5	3
16	Universal Scattering of Ultracold Atoms and Molecules in Optical Potentials. Atoms, 2019, 7, 36.	1.6	9
17	Excitation-assisted nonadiabatic charge-transfer reaction in a mixed atom-ion system. Physical Review A, 2019, 99, .	2.5	9
18	Emulating optical cycling centers in polyatomic molecules. Communications Physics, 2019, 2, .	5.3	18

#	ARTICLE	IF	CITATIONS
19	Hyperfine coupling of the iodine $\{D\}_{0}^{\{u\}^{\{+\}}$ and $\hat{1}g$ -ion-pair states. Journal of Physics B: Atomic, Molecular and Optical Physics, 2018, 51, 095101.	1.5	2
20	The Iodine Molecule. , 2018, , .		15
21	Evaluation of CP -violation in HfF ion-pair state. Physical Review A, 2018, 98, .	2.5	21
22	Systematic effects in the HfF ion-pair experiment to search for the electron electric dipole moment. Physical Review A, 2018, 97, .	2.5	16
23	Intramolecular Perturbations in the Electronically Excited States. , 2018, , 57-90.		0
24	Laser controlled charge-transfer reaction at low temperatures. Journal of Chemical Physics, 2017, 146, 084304.	3.0	8
25	$\hat{1}^3$ state of HfF ion-pair state. Physical Review A, 2017, 95, .	2.5	20
26	Universality and chaoticity in ultracold K+K R b chemical reactions. Nature Communications, 2017, 8, 15897.	12.8	56
27	$\hat{1}^3$ to $\hat{1}^1$ transition in H ion-pair state. Physical Review A, 2017, 95, .	2.5	9
28	Pendular trapping conditions for ultracold polar molecules enforced by external electric fields. Physical Review A, 2017, 95, .	2.5	7
29	Quantum-State Resolved Study of the Ultracold K+K R b Reaction. Journal of Physics: Conference Series, 2017, 875, 082004.	0.4	0
30	Near-resonant rovibronic Raman scattering from $0g + (bb)$ valence state via the $DOu +$ ion-pair state in iodine molecule. Optics and Spectroscopy (English Translation of Optika I Spektroskopiya), 2016, 121, 798-803.	0.6	0
31	Photoassociative production of ultracold heteronuclear $YbLi$ ion-pair state. Physical Review A, 2016, 94, .	2.5	18
32	ac Stark effect in ThO $\hat{1}^3$ state for the electron electric-dipole-moment search. Physical Review A, 2015, 91, .	2.5	18
33	Further investigation of g -factors for the lead monofluoride ground state. Physical Review A, 2015, 92, .	2.5	11
34	TaN molecule as a candidate for the search for a T, P -violating nuclear magnetic quadrupole moment. Physical Review A, 2015, 92, .	2.5	31
35	Ultracold Dipolar Molecules Composed of Strongly Magnetic Atoms. Physical Review Letters, 2015, 115, 203201.	7.8	76
36	Photodissociation spectroscopy of the dysprosium monochloride molecular ion. Journal of Chemical Physics, 2015, 143, 124309.	3.0	4

#	ARTICLE	IF	CITATIONS
37	Emergence of Chaotic Scattering in Ultracold Er and Dy. <i>Physical Review X</i> , 2015, 5, .	8.9	81
38	Magnetic field dependent interactions in an ultracold $\text{Li}^{\text{a}}\text{Yb}(\text{P})_2$ mixture. <i>New Journal of Physics</i> , 2015, 17, 055007.	2.9	19
39	Magnetic control of ultra-cold ^6Li and $^{174}\text{Yb}(\text{P})_2$ atom mixtures with Feshbach resonances. <i>New Journal of Physics</i> , 2015, 17, 045010.	2.9	11
40	Ultracold chemistry with alkali-metal-rare-earth molecules. <i>Physical Review A</i> , 2015, 91, .	2.5	29
41	CP-Violating Effect of the Th Nuclear Magnetic Quadrupole Moment: Accurate Many-Body Study of ThO. <i>Physical Review Letters</i> , 2014, 113, 263006.	7.8	34
42	Search for parity- and time-and-parity-violation effects in lead monofluoride (PbF): <i>Ab initio</i> molecular study. <i>Physical Review A</i> , 2014, 90, .	2.5	32
43	Zeeman interaction in ThO $\langle \text{H} \rangle$ the electron electric dipole moment search. <i>Physical Review A</i> , 2014, 90, .	2.5	39
44	Ultracold Heteronuclear Mixture of Ground and Excited State Atoms. <i>Physical Review Letters</i> , 2014, 112, 033201.	7.8	44
45	Action spectroscopy of SrCl^+ using an integrated ion trap time-of-flight mass spectrometer. <i>Journal of Chemical Physics</i> , 2014, 141, 014309.	3.0	9
46	Quantum chaos in ultracold collisions of gas-phase erbium atoms. <i>Nature</i> , 2014, 507, 475-479.	27.8	196
47	<i>Ab initio</i> study of radium monofluoride (RaF) as a candidate to search for parity- and time-and-parity-violation effects. <i>Physical Review A</i> , 2014, 90, .	2.5	68
48	Enhanced effects of temporal variation of the fundamental constants in $2^{11}/2$ -term diatomic molecules: $^{207}\text{Pb}^{19}\text{F}$. <i>Physical Review A</i> , 2013, 88, .	2.5	13
49	Calculation of the parity- and time-reversal-violating interaction in RaO . <i>Physical Review A</i> , 2013, 87, .	2.5	25
50	Optical spectroscopy of tungsten carbide for uncertainty analysis in electron electric-dipole-moment search. <i>Physical Review A</i> , 2013, 87, .	2.5	30
51	Generalized relativistic effective core potential calculations of the adiabatic potential curve and spectroscopic constants for the ground electronic state of the Ca_2 molecule. <i>International Journal of Quantum Chemistry</i> , 2013, 113, 2277-2281.	2.0	3
52	External field control of spin-dependent rotational decoherence of ultracold polar molecules. <i>Molecular Physics</i> , 2013, 111, 1731-1737.	1.7	6
53	Centrifugal correction to hyperfine structure constants in the ground state of lead monofluoride. <i>Physical Review A</i> , 2013, 88, .	2.5	29
54	Communication: Theoretical study of ThO for the electron electric dipole moment search. <i>Journal of Chemical Physics</i> , 2013, 139, 221103.	3.0	78

#	ARTICLE	IF	CITATIONS
55	Anisotropic Polarizability of Ultracold Polar Molecules. Physical Review Letters, 2012, 109, 230403.	7.8	85
56	Broadband velocity modulation spectroscopy of HfF ⁺ : Towards a measurement of the electron electric dipole moment. Chemical Physics Letters, 2012, 546, 1-11.	2.6	49
57	Anisotropy-Induced Feshbach Resonances in a Quantum Dipolar Gas of Highly Magnetic Atoms. Physical Review Letters, 2012, 109, 103002.	7.8	60
58	Hyperfine and Zeeman interactions of the electron electric dipole moment in Eu ⁺ . Physical Review Letters, 2011, 106, 103001.	2.5	28
59	Enhancement of the electron electric dipole moment in Eu ⁺ . Physical Review A, 2011, 84, .	2.5	37
60	Anisotropy in the interaction of ultracold dysprosium. Physical Chemistry Chemical Physics, 2011, 13, 19165.	2.8	31
61	The effect of the iterative triple and quadruple cluster amplitudes on the adiabatic potential curve in the coupled cluster calculations of the ground electronic state of the Yb dimer. International Journal of Quantum Chemistry, 2011, 111, 3793-3798.	2.0	8
62	Universalities in ultracold reactions of alkali-metal polar molecules. Physical Review A, 2011, 84, .	2.5	46
63	Precision spectroscopy of the Pb ⁺ ion. Physical Review Letters, 2011, 106, 103001.	2.5	16
64	Molecular-ion trap-depletion spectroscopy of BaCl ⁺ . Physical Review A, 2011, 83, .	2.5	26
65	Ab initio properties of Li-group-II molecules for ultracold matter studies. Journal of Chemical Physics, 2011, 135, 164108.	3.0	45
66	Measurement of a Large Chemical Reaction Rate between Ultracold Closed-Shell Atoms and Open-Shell Atoms. Physical Review Letters, 2009, 103, 030401.	7.8	127
67	Progress toward the electron electric-dipole-moment search: Theoretical study of the PbF molecule. Physical Review A, 2010, 82, .	2.5	32
68	Theoretical study of low-lying electronic terms and transition moments for Hf ⁺ . Physical Review A, 2009, 79, .	2.5	23
69	Violation of the Pauli Exclusion Principle in the Electron Electric Dipole Moment Search. Physical Review Letters, 2009, 103, 030401.	2.5	23
70	On the search for time variation in the fine-structure constant: Ab initio calculation of HfF ⁺ . JETP Letters, 2009, 88, 578-581.	1.4	15
71	Ab initio calculation of the spectroscopic properties of TlF ⁺ . Optics and Spectroscopy (English) Tj ETQq1 1 0.784314 rgBT / Overlock 0.6	0.6	7
72	Ab initio study of Hg-Hg and E112-E112 van der Waals interactions. Physics of Atomic Nuclei, 2009, 72, 396-400.	0.4	11

#	ARTICLE	IF	CITATIONS
73	Search for the nuclear Schiff moment in liquid xenon. Physical Review A, 2007, 75, .	2.5	1
74	Theoretical study of $\langle \mathbf{r}^{-1} \mathbf{H}_f \mathbf{r} \rangle$ search of the electron electric dipole moment. Physical Review A, 2007, 76, .	2.5	62
75	P,T-PARITY VIOLATION EFFECTS IN POLAR HEAVY-ATOM MOLECULES. , 2006, , 253-283.		73
76	GENERALIZED RECP ACCOUNTING FOR BREIT EFFECTS: URANIUM, PLUTONIUM AND SUPERHEAVY ELEMENTS 112, 113, 114. , 2006, , 229-251.		43
77	Two-step method for precise calculation of core properties in molecules. International Journal of Quantum Chemistry, 2005, 104, 223-239.	2.0	27
78	Configuration-interaction calculation of hyperfine and P,T-odd constants on Pb ²⁰⁷ O excited states for electron electric-dipole-moment experiments. Physical Review A, 2005, 72, .	2.5	29
79	In Search of the Electron Electric Dipole Moment: Relativistic Correlation Calculations of the P,T-Violating Effect in the Ground State of HI ⁺ . Physical Review Letters, 2005, 95, 163004.	7.8	17
80	Accounting for the Breit interaction in relativistic effective core potential calculations of actinides. Journal of Physics B: Atomic, Molecular and Optical Physics, 2004, 37, 4621-4637.	1.5	37
81	In search of the electron dipole moment: Ab initio calculations on Pb ²⁰⁷ O excited states. Physical Review A, 2004, 69, .	2.5	32
82	Accuracy and efficiency of modern methods for electronic structure calculation on heavy-and superheavy-element compounds. Physics of Atomic Nuclei, 2003, 66, 1152-1162.	0.4	7
83	Calculation of P,T-Odd Effects in T ₂₀₅ Including Electron Correlation. Physical Review Letters, 2002, 88, 073001.	7.8	53
84	Electronic structure and fluorescence spectrum of the HeO ⁺ cation. Optics and Spectroscopy (English Translation of Optika i Spektroskopiya), 2001, 90, 367-370.	0.6	2
85	Theoretical study of low-lying electronic states and emission spectra of the excimer ions NaHe ⁺ and NaNe ⁺ . Computational and Theoretical Chemistry, 1999, 490, 189-200.	1.5	2