

Timur V Tscherbul

List of Publications by Year in descending order

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58
papers

1,228
citations

304743

22
h-index

395702

33
g-index

59
all docs

59
docs citations

59
times ranked

686
citing authors

#	ARTICLE	IF	CITATIONS
1	Total angular momentum representation for state-to-state quantum scattering of cold molecules in a magnetic field. <i>Journal of Chemical Physics</i> , 2022, 156, 034112.	3.0	4
2	Near-threshold scaling of resonant inelastic collisions at ultralow temperatures. <i>Physical Review A</i> , 2022, 105, .	2.5	1
3	Coherent multichannel optical theorem: Quantum control of the total scattering cross section. <i>Physical Review A</i> , 2022, 105, .	2.5	3
4	Steady-state Fano coherences in a V-type system driven by polarized incoherent light. <i>Physical Review Research</i> , 2021, 3, .	3.6	11
5	Complete Quantum Coherent Control of Ultracold Molecular Collisions. <i>Physical Review Letters</i> , 2021, 126, 153403.	7.8	21
6	Universal stereodynamics of cold atom-molecule collisions in electric fields. <i>Physical Review A</i> , 2021, 103, .	2.5	0
7	Quantum Spin State Selectivity and Magnetic Tuning of Ultracold Chemical Reactions of Triplet Alkali-Metal Dimers with Alkali-Metal Atoms. <i>Physical Review Letters</i> , 2021, 127, 103402.	7.8	13
8	Coherent control of reactive scattering at low temperatures: Signatures of quantum interference in the differential cross sections for $F + H_2$ and $F + H_2$ and $F + H_2$	2.5	10
9	Magnetic tuning of ultracold barrierless chemical reactions. <i>Physical Review Research</i> , 2020, 2, .	3.6	13
10	Full-dimensional quantum scattering calculations on ultracold atom-molecule collisions in magnetic fields: The role of molecular vibrations. <i>Physical Review Research</i> , 2020, 2, .	3.6	7
11	Universal Probability Distributions of Scattering Observables in Ultracold Molecular Collisions. <i>Physical Review Letters</i> , 2019, 123, 013401.	7.8	13
12	Restricted basis set coupled-channel calculations on atom-molecule collisions in magnetic fields. <i>Journal of Chemical Physics</i> , 2019, 150, 074110.	3.0	4
13	Enhanced spin coherence of rubidium atoms in solid parahydrogen. <i>Physical Review B</i> , 2019, 100, .	3.2	10
14	Spin coherence and optical properties of alkali-metal atoms in solid parahydrogen. <i>Physical Review A</i> , 2019, 100, .	2.5	12
15	Non-equilibrium stationary coherences in photosynthetic energy transfer under weak-field incoherent illumination. <i>Journal of Chemical Physics</i> , 2018, 148, 124114.	3.0	30
16	Secular versus nonsecular Redfield dynamics and Fano coherences in incoherent excitation: An experimental proposal. <i>Physical Review A</i> , 2018, 97, .	2.5	29
17	Atom-molecule collisions, spin relaxation, and sympathetic cooling in an ultracold spin-polarized $Rb(S_2) \hat{a} \sim SrF(\hat{l}+2)$ mixture. <i>Physical Review A</i> , 2018, 98, .	2.5	22
18	Phase Locking between Different Partial Waves in Atom-Ion Spin-Exchange Collisions. <i>Physical Review Letters</i> , 2018, 121, 173402.	7.8	24

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19	Diagrammatic Monte-Carlo Approach to Angular Momentum in Quantum Many-Particle Systems. <i>Physical Review Letters</i> , 2018, 121, 165301.	7.8	14
20	Long-lived quantum coherences in a V-type system strongly driven by a thermal environment. <i>Physical Review A</i> , 2018, 98, .	2.5	13
21	Cold Anisotropically Interacting van der Waals Molecule: TiHe. <i>Physical Review Letters</i> , 2017, 118, 213401.	7.8	12
22	Cold collisions of heavy SrOH^+ molecules with alkali-metal atoms in a magnetic field: <i>Ab initio</i> analysis and prospects for sympathetic cooling of SrOH^+ . <i>CHAPTER 6. Effects of External Magnetic Fields on Cold Molecular Collisions. RSC Theoretical and Computational Chemistry Series</i> , 2017, , 276-312.	2.5	18
23	CHAPTER 6. Effects of External Magnetic Fields on Cold Molecular Collisions. <i>RSC Theoretical and Computational Chemistry Series</i> , 2017, , 276-312.	0.7	1
24	Cold NH_2^+ -NH collisions in a magnetic field: Basis set convergence versus sensitivity to the interaction potential. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2016, 49, 204002.	1.5	7
25	Quantum dynamics of incoherently driven V-type systems: Analytic solutions beyond the secular approximation. <i>Journal of Chemical Physics</i> , 2016, 144, 244108.	3.0	35
26	Coherent dynamics of V-type systems driven by time-dependent incoherent radiation. <i>Journal of Chemical Physics</i> , 2016, 145, 244313.	3.0	30
27	Spin-Orbit Interactions and Quantum Spin Dynamics in Cold Ion-Atom Collisions. <i>Physical Review Letters</i> , 2016, 117, 143201.	7.8	17
28	Tuning Bimolecular Chemical Reactions by Electric Fields. <i>Physical Review Letters</i> , 2015, 115, 023201.	7.8	29
29	Quantum coherence effects in natural light-induced processes: cis \rightarrow trans photoisomerization of model retinal under incoherent excitation. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 30904-30913.	2.8	34
30	Partial secular Bloch-Redfield master equation for incoherent excitation of multilevel quantum systems. <i>Journal of Chemical Physics</i> , 2015, 142, 104107.	3.0	41
31	Adiabatic channel capture theory applied to cold atom \rightarrow molecule reactions: $\text{Li} + \text{CaH} \rightarrow \text{LiH} + \text{Ca}$ at 1K. <i>New Journal of Physics</i> , 2015, 17, 035010.	2.9	14
32	Long-Lived Quasistationary Coherences in a V-type System Driven by Incoherent Light. <i>Physical Review Letters</i> , 2014, 113, 113601.	7.8	66
33	Coherent dynamics of Rydberg atoms in cosmic-microwave-background radiation. <i>Physical Review A</i> , 2014, 89, .	2.5	11
34	Excitation of Biomolecules with Incoherent Light: Quantum Yield for the Photoisomerization of Model Retinal. <i>Journal of Physical Chemistry A</i> , 2014, 118, 3100-3111.	2.5	26
35	Spin-Orbit Suppression of Cold Inelastic Collisions of Aluminum and Helium. <i>Physical Review Letters</i> , 2013, 110, 173202.	7.8	4
36	Zeeman relaxation induced by spin-orbit coupling in cold antimony-helium collisions. <i>Physical Review A</i> , 2013, 88, .	2.5	2

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37	Cold collisions of polyatomic molecular radicals with S -state atoms in a magnetic field: An <i>ab initio</i> study of $\text{He} + \text{CH}_2(X^1\Sigma^+)$ collisions. <i>Journal of Chemical Physics</i> , 2012, 137, 104302.	3.0	10
38	Formation and dynamics of van der Waals molecules in buffer-gas traps. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 19125.	2.8	21
39	Cold heteromolecular dipolar collisions. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 19059.	2.8	85
40	$\text{He}^+\text{ThO}(1^1\Sigma^+)$ interactions at low temperatures: Elastic and inelastic collisions, transport properties, and complex formation in cold ^4He gas. <i>Journal of Chemical Physics</i> , 2011, 134, 144301.	3.0	6
41	Cold N^+NH Collisions in a Magnetic Trap. <i>Physical Review Letters</i> , 2011, 106, 053201.	7.8	82
42	Quantum theory of molecular collisions in a magnetic field: Efficient calculations based on the total angular momentum representation. <i>Journal of Chemical Physics</i> , 2010, 133, 184104.	3.0	26
43	Mechanism of Collisional Spin Relaxation in N^+NH Molecules. <i>Physical Review Letters</i> , 2009, 102, 013002.	7.8	44
44	Dynamics of $\text{OH}(2^1\Sigma^+)$ He collisions in combined electric and magnetic fields. <i>Faraday Discussions</i> , 2009, 142, 127.	3.2	23
45	Cold Collisions of $\text{OH}(2^1\Sigma^+)$ Molecules with He Atoms in External Fields. <i>Journal of Physical Chemistry A</i> , 2009, 113, 14670-14680.	2.5	20
46	Effects of External Electromagnetic Fields on Collisions of Molecules at Low Temperatures. , 2009, , .		2
47	Differential scattering of cold molecules in superimposed electric and magnetic fields. <i>Journal of Chemical Physics</i> , 2008, 128, 244305.	3.0	15
48	On the Role of Scattering Resonances in the $\text{F} + \text{HD}$ Reaction Dynamics. <i>Journal of Physical Chemistry A</i> , 2007, 111, 12538-12549.	2.5	34
49	Non-adiabatic $E \hat{a}^+ D$, $D \hat{a}^2$, \hat{I}^2 , \hat{I}^3 , \hat{I}^+ transitions in the first ion-pair tier of molecular iodine induced by collisions with I_2 , He, Ar, Kr, Xe. <i>Chemical Physics Letters</i> , 2007, 436, 1-6.	2.6	17
50	Interactions of $2P$ Atoms with Closed-Shell Diatomic Molecules: An Alternative Diabatic Representations for the Electronic Anisotropy. <i>Journal of Physical Chemistry A</i> , 2006, 110, 5458-5463.	2.5	5
51	Manipulating spin-dependent interactions in rotationally excited cold molecules with electric fields. <i>Journal of Chemical Physics</i> , 2006, 125, 194311.	3.0	39
52	Collision-induced nonadiabatic transitions in the second-tier ion-pair states of iodine molecule: Experimental and theoretical study of the $\text{I}_2(f0g^+)$ collisions with rare gas atoms. <i>Journal of Chemical Physics</i> , 2005, 122, 204318.	3.0	23
53	Direct evaluation of the lifetime matrix by the hyperquantization algorithm: Narrow resonances in the $\text{F} + \text{H}_2$ reaction dynamics and their splitting for nonzero angular momentum. <i>Journal of Chemical Physics</i> , 2005, 123, 054314.	3.0	55
54	Interaction potentials of the $\text{RG}^+ \text{I}^-$ anions, neutrals, and cations ($\text{RG} = \text{He}, \text{Ne}, \text{Ar}$). <i>Journal of Chemical Physics</i> , 2005, 122, 194311.	3.0	38

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55	Quantum scattering equations for non-adiabatic transitions in collisions between a Hund case (c) diatomic molecule and a structureless atom with application to I ₂ (E ₀ +g) + Ar. Journal of Physics B: Atomic, Molecular and Optical Physics, 2004, 37, 1605-1619.	1.5	13
56	State-to-state rate constants for rotational relaxation of CO in collisions with Ar: a quantum study. Chemical Physics Letters, 2004, 393, 58-63.	2.6	2
57	Collision-induced non-adiabatic transitions between the ion-pair states of molecular iodine: A challenge for experiment and theory. Physical Chemistry Chemical Physics, 2004, 6, 3201.	2.8	53
58	Modeling of the non-adiabatic E ₀ +g _{â†} 'D ₀ +u transitions induced by Ar in molecular iodine: a first attempt. Chemical Physics Letters, 2003, 370, 563-571.	2.6	14