

Vladimir Chernyak

List of Publications by Year in descending order

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100
papers

5,150
citations

94433

37
h-index

85541

71
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103
all docs

103
docs citations

103
times ranked

2769
citing authors

#	ARTICLE	IF	CITATIONS
1	Exciton-migration and three-pulse femtosecond optical spectroscopies of photosynthetic antenna complexes. <i>Journal of Chemical Physics</i> , 1998, 108, 7763-7774.	3.0	380
2	Electronic Coherence and Collective Optical Excitations of Conjugated Molecules. <i>Science</i> , 1997, 277, 781-787.	12.6	345
3	Stilbenoid Dimers: Dissection of a Paracyclophane Chromophore. <i>Journal of the American Chemical Society</i> , 1998, 120, 9188-9204.	13.7	214
4	Through-Space Charge Transfer and Nonlinear Optical Properties of Substituted Paracyclophane. <i>Journal of the American Chemical Society</i> , 2000, 122, 11956-11962.	13.7	207
5	Localized Electronic Excitations in Phenylacetylene Dendrimers. <i>Journal of Physical Chemistry B</i> , 1998, 102, 3310-3315.	2.6	198
6	Exciton sizes of conducting polymers predicted by time-dependent density functional theory. <i>Physical Review B</i> , 2005, 71, .	3.2	192
7	Density-matrix representation of nonadiabatic couplings in time-dependent density functional (TDDFT) theories. <i>Journal of Chemical Physics</i> , 2000, 112, 3572-3579.	3.0	183
8	Nonadiabatic Excited-State Molecular Dynamics Modeling of Photoinduced Dynamics in Conjugated Molecules. <i>Journal of Physical Chemistry B</i> , 2011, 115, 5402-5414.	2.6	172
9	Multidimensional femtosecond correlation spectroscopies of electronic and vibrational excitons. <i>Journal of Chemical Physics</i> , 1999, 110, 5011-5028.	3.0	155
10	Two-Dimensional Raman Echoes: Femtosecond View of Molecular Structure and Vibrational Coherence. <i>Accounts of Chemical Research</i> , 1999, 32, 145-154.	15.6	144
11	Bacteriochlorophyll and Carotenoid Excitonic Couplings in the LH2 System of Purple Bacteria. <i>Journal of Physical Chemistry B</i> , 2000, 104, 9540-9553.	2.6	127
12	Multidimensional femtosecond spectroscopies of molecular aggregates and semiconductor nanostructures: The nonlinear exciton equations. <i>Journal of Chemical Physics</i> , 1998, 109, 9587-9601.	3.0	124
13	Two-Dimensional Real-Space Analysis of Optical Excitations in Acceptor-Substituted Carotenoids. <i>Journal of the American Chemical Society</i> , 1997, 119, 11408-11419.	13.7	123
14	Exciton Hamiltonian for the Bacteriochlorophyll System in the LH2 Antenna Complex of Purple Bacteria. <i>Journal of Physical Chemistry B</i> , 2000, 104, 4519-4528.	2.6	114
15	Collective coordinates for nuclear spectral densities in energy transfer and femtosecond spectroscopy of molecular aggregates. <i>Journal of Chemical Physics</i> , 1996, 105, 4565-4583.	3.0	113
16	Classical chaos and fluctuation-dissipation relations for nonlinear response. <i>Physical Review E</i> , 1996, 53, R1-R4.	2.1	109
17	Solvent Reorganization in Long-Range Electron Transfer: A Density Matrix Approach. <i>Journal of Physical Chemistry A</i> , 1998, 102, 1241-1251.	2.5	108
18	Size Scaling of Third-Order Off-Resonant Polarizabilities. <i>Electronic Coherence in Organic Oligomers</i> . <i>Journal of the American Chemical Society</i> , 2000, 122, 452-459.	13.7	91

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19	Exciton-scaling and optical excitations of self-similar phenylacetylene dendrimers. <i>Journal of Chemical Physics</i> , 1999, 110, 8161-8175.	3.0	90
20	Time-resolved x-ray spectroscopies: Nonlinear response functions and Liouville-space pathways. <i>Physical Review A</i> , 2001, 63, .	2.5	88
21	Nonadiabatic excited-state molecular dynamics: Numerical tests of convergence and parameters. <i>Journal of Chemical Physics</i> , 2012, 136, 054108.	3.0	84
22	Collective electronic oscillators for nonlinear optical response of conjugated molecules. <i>Chemical Physics Letters</i> , 1996, 259, 55-61.	2.6	80
23	Krylov-space algorithms for time-dependent Hartree-Fock and density functional computations. <i>Journal of Chemical Physics</i> , 2000, 113, 36-43.	3.0	79
24	Four-wave mixing and luminescence of confined excitons in molecular aggregates and nanostructures. many-body green function approach. <i>Physics Reports</i> , 1995, 263, 213-309.	25.6	78
25	Size-consistent quasiparticle representation of nonlinear optical susceptibilities in many-electron systems. <i>Journal of Chemical Physics</i> , 1996, 104, 444-459.	3.0	76
26	Superradiance Coherence Sizes in Single-Molecule Spectroscopy of LH2 Antenna Complexes. <i>Journal of Physical Chemistry B</i> , 1999, 103, 3954-3962.	2.6	74
27	Recursive density-matrix spectral-moment algorithm for molecular nonlinear polarizabilities. <i>Journal of Chemical Physics</i> , 1996, 105, 8914-8928.	3.0	72
28	Simulations of two-dimensional femtosecond infrared photon echoes of glycine dipeptide. <i>Journal of Raman Spectroscopy</i> , 2000, 31, 125-135.	2.5	67
29	Polaron dynamics with a multitude of Davydov D2 trial states. <i>Journal of Chemical Physics</i> , 2015, 143, 014113.	3.0	63
30	Chemical Bonding and Size Scaling of Nonlinear Polarizabilities of Conjugated Polymers. <i>Physical Review Letters</i> , 1996, 77, 4656-4659.	7.8	62
31	Simulations of energy funneling and time- and frequency-gated fluorescence in dendrimers. <i>Journal of Chemical Physics</i> , 2001, 114, 2419-2429.	3.0	62
32	Multitime correlation functions for single molecule kinetics with fluctuating bottlenecks. <i>Journal of Chemical Physics</i> , 2002, 116, 4240-4251.	3.0	49
33	Third-order optical response of intermediate excitons with fractional nonlinear statistics. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1996, 13, 1302.	2.1	45
34	Origin, scaling, and saturation of second order polarizabilities in donor/acceptor polyenes. <i>Chemical Physics Letters</i> , 1998, 287, 75-82.	2.6	42
35	Frenkel-exciton Hamiltonian for dendrimeric nanostar. <i>Journal of Luminescence</i> , 2000, 87-89, 115-118.	3.1	41
36	Effect of Quantum Collapse on the Distribution of Work in Driven Single Molecules. <i>Physical Review Letters</i> , 2004, 93, 048302.	7.8	41

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37	Simulation of three-pulse echo and fluorescence depolarization in photosynthetic aggregates. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 1998, 356, 405-419.	3.4	37
38	Scaling of Fluorescence Stokes Shift and Superradiance Coherence Size in Disordered Molecular Aggregates. Journal of Physical Chemistry A, 1999, 103, 10294-10299.	2.5	37
39	Excitonic Funneling in Extended Dendrimers with Nonlinear and Random Potentials. Physical Review Letters, 2000, 85, 282-285.	7.8	37
40	Exciton transport in molecular aggregates probed by time and frequency gated optical spectroscopy. Journal of Chemical Physics, 2000, 112, 7953-7963.	3.0	36
41	Interplay of multiple vibrational spectral densities in femtosecond nonlinear spectroscopy of liquids. Journal of Chemical Physics, 1996, 105, 8543-8555.	3.0	33
42	Excitonic Interactions and Stark Spectroscopy of Light Harvesting Systems. Journal of Physical Chemistry B, 1998, 102, 8893-8908.	2.6	33
43	Stochastic-trajectories and nonPoisson kinetics in single-molecule spectroscopy. Journal of Chemical Physics, 1999, 111, 7416-7425.	3.0	33
44	Semiclassical simulations of multidimensional Raman echoes. Journal of Chemical Physics, 1999, 110, 1711-1725.	3.0	33
45	Excited electronic states of carotenoids: Time-dependent density-matrix-response algorithm. International Journal of Quantum Chemistry, 1998, 70, 711-727.	2.0	32
46	Two-exciton states and spectroscopy of phenylacetylene dendrimers. Journal of Chemical Physics, 1999, 111, 4158-4168.	3.0	32
47	Vibrational-exciton relaxation probed by three-pulse echoes in polypeptides. Chemical Physics, 2001, 266, 285-294.	1.9	29
48	Cooperative radiative decay in the nonlinear optical response of excitonic nanostructures. Physical Review B, 1993, 48, 2470-2478.	3.2	28
49	Ground-state properties of sub-Ohmic spin-boson model with simultaneous diagonal and off-diagonal coupling. Physical Review B, 2014, 90, .	3.2	27
50	Two-dimensional correlation spectroscopies of localized vibrations. Chemical Physics, 2001, 266, 311-322.	1.9	25
51	Symmetry and the critical phase of the two-bath spin-boson model: Ground-state properties. Physical Review B, 2015, 91, .	3.2	25
52	Exciton-Wave Packet Dynamics in Molecular Aggregates Studied with Pump-Probe Spectroscopy. Journal of Physical Chemistry B, 2000, 104, 3976-3983.	2.6	24
53	Path integral formulation of retardation effects in nonlinear optics. Journal of Chemical Physics, 1994, 100, 2953-2974.	3.0	23
54	Electronic versus vibrational optical nonlinearities of push-pull polymers. Chemical Physics Letters, 2000, 319, 261-264.	2.6	23

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55	Generalized sum rules for optical nonlinearities of many-electron systems. <i>Journal of Chemical Physics</i> , 1995, 103, 7640-7644.	3.0	22
56	Collective Electronic Oscillators for Second-Order Polarizabilities of Push-Pull Carotenoids. <i>Journal of Physical Chemistry A</i> , 2001, 105, 5692-5703.	2.5	18
57	Semiclassical Scattering on Conical Intersections. <i>Physical Review Letters</i> , 2005, 95, 223001.	7.8	17
58	Ensemble of Thermostatically Controlled Loads: Statistical Physics Approach. <i>Scientific Reports</i> , 2017, 7, 8673.	3.3	17
59	Cooperative ultrafast nonlinear optical response of molecular nanostructures. <i>Journal of Chemical Physics</i> , 1994, 100, 2465-2480.	3.0	16
60	Real-space analysis of electronic excitations in free-base (H2P) and magnesium (MgP) porphins. <i>Chemical Physics Letters</i> , 1998, 297, 357-364.	2.6	15
61	Quadratic Brownian-oscillator model for solvation dynamics in optical response. <i>Journal of Chemical Physics</i> , 2001, 114, 10430-10435.	3.0	14
62	Stochastic Representation of Non-Markovian Fermionic Quantum Dissipation. <i>Physical Review Letters</i> , 2019, 123, 050601.	7.8	14
63	Two-Exciton Collective Photon Echoes in Disordered Molecular Nanostructures. <i>Physical Review Letters</i> , 1995, 74, 4895-4898.	7.8	13
64	Coherence and correlations in multitime quantum measurements of stochastic quantum trajectories. <i>Physical Review E</i> , 2006, 73, 036119.	2.1	13
65	Communication: Spin-boson model with diagonal and off-diagonal coupling to two independent baths: Ground-state phase transition in the deep sub-Ohmic regime. <i>Journal of Chemical Physics</i> , 2014, 140, 161105.	3.0	13
66	Stochastic equation of motion approach to fermionic dissipative dynamics. I. Formalism. <i>Journal of Chemical Physics</i> , 2020, 152, 204105.	3.0	13
67	Electronic screening in second order optical polarizabilities of elongated Donor/Acceptor polyenes. <i>Chemical Physics</i> , 1999, 245, 145-163.	1.9	12
68	Stochastic equation of motion approach to fermionic dissipative dynamics. II. Numerical implementation. <i>Journal of Chemical Physics</i> , 2020, 152, 204106.	3.0	12
69	Bosonized squeezed-state coupled-cluster approach to electron correlations in nonlinear spectroscopy. <i>Journal of Chemical Physics</i> , 1999, 111, 4383-4396.	3.0	11
70	Complete Determination of Relaxation Parameters From Two-Dimensional Raman Spectroscopy. <i>Laser Chemistry</i> , 1999, 19, 109-116.	0.5	10
71	Intraband terahertz emission from coupled semiconductor quantum wells: A model study using the exciton representation. <i>Physical Review B</i> , 1999, 60, 2599-2609.	3.2	8
72	Gauge invariant formulation of molecular electrodynamics and the multipolar Hamiltonian. <i>Chemical Physics</i> , 1995, 198, 133-143.	1.9	7

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73	Excited-State Molecular Dynamics Simulations of Conjugated Oligomers Using the Electronic Density Matrix. <i>Journal of Physical Chemistry A</i> , 2001, 105, 7057-7071.	2.5	7
74	Optical Stark spectroscopy of molecular aggregates. <i>Journal of Chemical Physics</i> , 1996, 104, 5415-5423.	3.0	6
75	Utilizing Microcavities To Suppress Third-Order Cascades in Fifth-Order Raman Spectra. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 3387-3391.	4.6	6
76	Cooperative radiative decay of disordered molecular monolayers. <i>Physical Review B</i> , 1994, 50, 5609-5619.	3.2	5
77	Off-Resonant Electronic and Vibrational Molecular Polarizabilities. Time-Dependent Collective-Oscillator Expansion. <i>Journal of Physical Chemistry A</i> , 2000, 104, 4263-4271.	2.5	4
78	Compensation for extreme outages caused by polarization mode dispersion and amplifier noise. <i>Optics Express</i> , 2003, 11, 1607.	3.4	4
79	Exciton confinement and nonlocal nonlinear optical response of organic quantum wells. <i>Physical Review B</i> , 1994, 49, 17079-17091.	3.2	3
80	Optical Absorption of Long Range Electron Transfer Systems in Intense Fields. <i>Journal of the Chinese Chemical Society</i> , 2000, 47, 615-623.	1.4	3
81	Coherent-state representation of reduced density matrices of correlated electronic systems. <i>Chemical Physics Letters</i> , 2000, 327, 29-37.	2.6	3
82	Quantum quadratic brownian oscillator model for absorption lineshapes. <i>Israel Journal of Chemistry</i> , 2002, 42, 143-149.	2.3	3
83	Extreme outages caused by polarization mode dispersion. <i>Optics Letters</i> , 2003, 28, 2159.	3.3	2
84	Mechanical response functions of finite-temperature Bose-Einstein condensates. <i>Physical Review A</i> , 2003, 67, .	2.5	2
85	Disorder Influenced Absorption Line Shapes of a Chromophore Coupled to Two-Level Systems. <i>Journal of Physical Chemistry A</i> , 2013, 117, 12320-12331.	2.5	2
86	Two-Dimensional Femtosecond Spectroscopies of Coupled Chromophores. <i>Springer Series in Chemical Physics</i> , 1998, , 663-665.	0.2	2
87	LOCALIZED AND DELOCALIZED ELECTRONIC EXCITATIONS IN BIOLOGICAL AND ARTIFICIAL ANTENNA COMPLEXES. , 2000, , .		2
88	Collective coordinates for semiclassical femtosecond dissipative dynamics in Liouville space. <i>Journal of Luminescence</i> , 1998, 76-77, 15-21.	3.1	1
89	Geometric picture for coupled electron-nuclear dynamics. <i>International Journal of Quantum Chemistry</i> , 2002, 90, 799-811.	2.0	1
90	Lanczos Algorithm for Electron Transfer Rates in Solvents with Complex Spectral Densities. <i>Advances in Chemical Physics</i> , 2007, , 515-551.	0.3	1

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91	Disorder and spectral line shapes in two-level systems. <i>Chemical Physics Letters</i> , 2013, 582, 66-70.	2.6	1
92	Excited electronic states of carotenoids: Time-dependent density-matrix-response algorithm. <i>International Journal of Quantum Chemistry</i> , 1998, 70, 711-727.	2.0	1
93	Solvent effects and charge transfer states in organic photovoltaics: a time-dependent density functional theory study on the PCPDTBT:PCBM low band gap system. <i>Journal of Photonics for Energy</i> , 2018, 8, 1.	1.3	1
94	Two-dimensional infrared femtosecond spectroscopy of cyclic pentapeptides. <i>AIP Conference Proceedings</i> , 2000, , .	0.4	0
95	Molecular Dynamics Simulations of Collective Electronic and Nuclear Modes in Conjugated Systems. , 2000, , .		0
96	Ultrafast nonlinear spectroscopy of energy funneling in the dendrimeric nanostar. , 2000, , .		0
97	Origin, Scaling, and Saturation of Nonlinear Polarizabilities in Donor/Acceptor Polymers. , 2000, , .		0
98	Molecular Dynamics Simulations of Collective Electronic and Nuclear Modes in Conjugated Systems. <i>Springer Series in Chemical Physics</i> , 2001, , 595-597.	0.2	0
99	Energy funneling in the dendrimeric nanostar probed by time-resolved nonlinear spectroscopies. <i>Springer Series in Chemical Physics</i> , 2001, , 610-612.	0.2	0
100	Two-Dimensional Coherent Infrared Spectroscopy of Vibrational Excitons in Polypeptides. , 2001, , .		0