Vladimir Chernyak

List of Publications by Year
in descending order

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100 papers	5,150 citations	94269 37 h-index	85405 71 g-index

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. Journal of Chemical Physics, 1998, 108, 7763-7774.	1.2	380
2	Electronic Coherence and Collective Optical Excitations of Conjugated Molecules. Science, 1997, 277, 781-787.	6.0	345
3	Stilbenoid Dimers:â€‰ Dissection of a Paracyclophane Chromophore. Journal of the American Chemical Society, 1998, 120, 9188-9204.	6.6	214
4	Through-Space Charge Transfer and Nonlinear Optical Properties of Substituted Paracyclophane. Journal of the American Chemical Society, 2000, 122, 11956-11962.	6.6	207
5	Localized Electronic Excitations in Phenylacetylene Dendrimers. Journal of Physical Chemistry B, 1998, 102, 3310-3315.	1.2	198
6	Exciton sizes of conducting polymers predicted by time-dependent density functional theory. Physical Review B, 2005, 71, .	1.1	192
7	Density-matrix representation of nonadiabatic couplings in time-dependent density functional (TDDFT) theories. Journal of Chemical Physics, 2000, 112, 3572-3579.	1.2	183
8	Nonadiabatic Excited-State Molecular Dynamics Modeling of Photoinduced Dynamics in Conjugated Molecules. Journal of Physical Chemistry B, 2011, 115, 5402-5414.	1.2	172
9	Multidimensional femtosecond correlation spectroscopies of electronic and vibrational excitons. Journal of Chemical Physics, 1999, 110, 5011-5028.	1.2	155
10	Two-Dimensional Raman Echoes:â€‰ Femtosecond View of Molecular Structure and Vibrational Coherence. Accounts of Chemical Research, 1999, 32, 145-154.	7.6	144
11	Bacteriochlorophyll and Carotenoid Excitonic Couplings in the LH2 System of Purple Bacteria. Journal of Physical Chemistry B, 2000, 104, 9540-9553.	1.2	127
12	Multidimensional femtosecond spectroscopies of molecular aggregates and semiconductor nanostructures: The nonlinear exciton equations. Journal of Chemical Physics, 1998, 109, 9587-9601.	1.2	124
13	Two-Dimensional Real-Space Analysis of Optical Excitations in Acceptor-Substituted Carotenoids. Journal of the American Chemical Society, 1997, 119, 11408-11419.	6.6	123
14	Exciton Hamiltonian for the Bacteriochlorophyll System in the LH2 Antenna Complex of Purple Bacteria. Journal of Physical Chemistry B, 2000, 104, 4519-4528.	1.2	114
15	Collective coordinates for nuclear spectral densities in energy transfer and femtosecond spectroscopy of molecular aggregates. Journal of Chemical Physics, 1996, 105, 4565-4583.	1.2	113
16	Classical chaos and fluctuation-dissipation relations for nonlinear response. Physical Review E, 1996, 53, R1-R4.	0.8	109
17	Solvent Reorganization in Long-Range Electron Transfer:Â Density Matrix Approach. Journal of Physical Chemistry A, 1998, 102, 1241-1251.	1.1	108
18	Size Scaling of Third-Order Off-Resonant Polarizabilities. Electronic Coherence in Organic Oligomers. Journal of the American Chemical Society, 2000, 122, 452-459.	6.6	91

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19	Exciton-scaling and optical excitations of self-similar phenylacetylene dendrimers. Journal of Chemical Physics, 1999, 110, 8161-8175.	1.2	90
20	Time-resolved x-ray spectroscopies:â€ƒNonlinear response functions and Liouville-space pathways. Physical Review A, 2001, 63, .	1.0	88
21	Nonadiabatic excited-state molecular dynamics: Numerical tests of convergence and parameters. Journal of Chemical Physics, 2012, 136, 054108.	1.2	84
22	Collective electronic oscillators for nonlinear optical response of conjugated molecules. Chemical Physics Letters, 1996, 259, 55-61.	1.2	80
23	Krylov-space algorithms for time-dependent Hartreeâ€“Fock and density functional computations. Journal of Chemical Physics, 2000, 113, 36-43.	1.2	79
24	Four-wave mixing and luminescence of confined excitons in molecular aggregates and nanostructures. many-body green function approach. Physics Reports, 1995, 263, 213-309.	10.3	78
25	Sizeâ€consistent quasiparticle representation of nonlinear optical susceptibilities in manyâ€electron systems. Journal of Chemical Physics, 1996, 104, 444-459.	1.2	76
26	Superradiance Coherence Sizes in Single-Molecule Spectroscopy of LH2 Antenna Complexes. Journal of Physical Chemistry B, 1999, 103, 3954-3962.	1.2	74
27	Recursive densityâ€matrixâ€spectralâ€moment algorithm for molecular nonlinear polarizabilities. Journal of Chemical Physics, 1996, 105, 8914-8928.	1.2	72
28	Simulations of two-dimensional femtosecond infrared photon echoes of glycine dipeptide. Journal of Raman Spectroscopy, 2000, 31, 125-135.	1.2	67
29	Polaron dynamics with a multitude of Davydov D2 trial states. Journal of Chemical Physics, 2015, 143, 014113.	1.2	63
30	Chemical Bonding and Size Scaling of Nonlinear Polarizabilities of Conjugated Polymers. Physical Review Letters, 1996, 77, 4656-4659.	2.9	62
31	Simulations of energy funneling and time- and frequency-gated fluorescence in dendrimers. Journal of Chemical Physics, 2001, 114, 2419-2429.	1.2	62
32	Multitime correlation functions for single molecule kinetics with fluctuating bottlenecks. Journal of Chemical Physics, 2002, 116, 4240-4251.	1.2	49
33	Third-order optical response of intermediate excitons with fractional nonlinear statistics. Journal of the Optical Society of America B: Optical Physics, 1996, 13, 1302.	0.9	45
34	Origin, scaling, and saturation of second order polarizabilities in donor/acceptor polyenes. Chemical Physics Letters, 1998, 287, 75-82.	1.2	42
35	Frenkel-exciton Hamiltonian for dendrimeric nanostar. Journal of Luminescence, 2000, 87-89, 115-118.	1.5	41
36	Effect of Quantum Collapse on the Distribution of Work in Driven Single Molecules. Physical Review Letters, 2004, 93, 048302.	2.9	41

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37	Simulation of threeâ€“pulseâ€“echo and fluorescence depolarization in photosynthetic aggregates. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 1998, 356, 405-419.	1.6	37
38	Scaling of Fluorescence Stokes Shift and Superradiance Coherence Size in Disordered Molecular Aggregates. Journal of Physical Chemistry A, 1999, 103, 10294-10299.	1.1	37
39	Excitonic Funneling in Extended Dendrimers with Nonlinear and Random Potentials. Physical Review Letters, 2000, 85, 282-285.	2.9	37
40	Exciton transport in molecular aggregates probed by time and frequency gated optical spectroscopy. Journal of Chemical Physics, 2000, 112, 7953-7963.	1.2	36
41	Interplay of multiple vibrational spectral densities in femtosecond nonlinear spectroscopy of liquids. Journal of Chemical Physics, 1996, 105, 8543-8555.	1.2	33
42	Excitonic Interactions and Stark Spectroscopy of Light Harvesting Systems. Journal of Physical Chemistry B, 1998, 102, 8893-8908.	1.2	33
43	Stochastic-trajectories and nonPoisson kinetics in single-molecule spectroscopy. Journal of Chemical Physics, 1999, 111, 7416-7425.	1.2	33
44	Semiclassical simulations of multidimensional Raman echoes. Journal of Chemical Physics, 1999, 110, 1711-1725.	1.2	33
45	Excited electronic states of carotenoids: Time-dependent density-matrix-response algorithm. International Journal of Quantum Chemistry, 1998, 70, 711-727.	1.0	32
46	Two-exciton states and spectroscopy of phenylacetylene dendrimers. Journal of Chemical Physics, 1999, 111, 4158-4168.	1.2	32
47	Vibrational-exciton relaxation probed by three-pulse echoes in polypeptides. Chemical Physics, 2001, 266, 285-294.	0.9	29
48	Cooperative radiative decay in the nonlinear optical response of excitonic nanostructures. Physical Review B, 1993, 48, 2470-2478.	1.1	28
49	Ground-state properties of sub-Ohmic spin-boson model with simultaneous diagonal and off-diagonal coupling. Physical Review B, 2014, 90, .	1.1	27
50	Two-dimensional correlation spectroscopies of localized vibrations. Chemical Physics, 2001, 266, 311-322.	0.9	25
51	Symmetry and the critical phase of the two-bath spin-boson model: Ground-state properties. Physical Review B, 2015, 91, .	1.1	25
52	Exciton-Wave Packet Dynamics in Molecular Aggregates Studied with Pumpâ^'Probe Spectroscopyâ€. Journal of Physical Chemistry B, 2000, 104, 3976-3983.	1.2	24
53	Path integral formulation of retardation effects in nonlinear optics. Journal of Chemical Physics, 1994, 100, 2953-2974.	1.2	23
54	Electronic versus vibrational optical nonlinearities of push-pull polymers. Chemical Physics Letters, 2000, 319, 261-264.	1.2	23

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55	Generalized sum rules for optical nonlinearities of manyâ€electron systems. Journal of Chemical Physics, 1995, 103, 7640-7644.	1.2	22
56	Collective Electronic Oscillators for Second-Order Polarizabilities of Pushâ^'Pull Carotenoids. Journal of Physical Chemistry A, 2001, 105, 5692-5703.	1.1	18
57	Semiclassical Scattering on Conical Intersections. Physical Review Letters, 2005, 95, 223001.	2.9	17
58	Ensemble of Thermostatically Controlled Loads: Statistical Physics Approach. Scientific Reports, 2017, 7, 8673.	1.6	17
59	Cooperative ultrafast nonlinear optical response of molecular nanostructures. Journal of Chemical Physics, 1994, 100, 2465-2480.	1.2	16
60	Real-space analysis of electronic excitations in free-base (H2P) and magnesium (MgP) porphins. Chemical Physics Letters, 1998, 297, 357-364.	1.2	15
61	Quadratic Brownian-oscillator model for solvation dynamics in optical response. Journal of Chemical Physics, 2001, 114, 10430-10435.	1.2	14
62	Stochastic Representation of Non-Markovian Fermionic Quantum Dissipation. Physical Review Letters, 2019, 123, 050601.	2.9	14
63	Two-Exciton Collective Photon Echoes in Disordered Molecular Nanostructures. Physical Review Letters, 1995, 74, 4895-4898.	2.9	13
64	Coherence and correlations in multitime quantum measurements of stochastic quantum trajectories. Physical Review E, 2006, 73, 036119.	0.8	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. Journal of Chemical Physics, 2014, 140, 161105.	1.2	13
66	Stochastic equation of motion approach to fermionic dissipative dynamics. I. Formalism. Journal of Chemical Physics, 2020, 152, 204105.	1.2	13
67	Electronic screening in second order optical polarizabilities of elongated Donor/Acceptor polyenes. Chemical Physics, 1999, 245, 145-163.	0.9	12
68	Stochastic equation of motion approach to fermionic dissipative dynamics. II. Numerical implementation. Journal of Chemical Physics, 2020, 152, 204106.	1.2	12
69	Bosonized squeezed-state coupled-cluster approach to electron correlations in nonlinear spectroscopy. Journal of Chemical Physics, 1999, 111, 4383-4396.	1.2	11
70	Complete Determination of Relaxation Parameters From Two-Dimensional Raman Spectroscopy. Laser Chemistry, 1999, 19, 109-116.	0.5	10
71	Intraband terahertz emission from coupled semiconductor quantum wells: A model study using the exciton representation. Physical Review B, 1999, 60, 2599-2609.	1.1	8
72	Gauge invariant formulation of molecular electrodynamics and the multipolar Hamiltonian. Chemical Physics, 1995, 198, 133-143.	0.9	7

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73	Excited-State Molecular Dynamics Simulations of Conjugated Oligomers Using the Electronic Density Matrix. Journal of Physical Chemistry A, 2001, 105, 7057-7071.	1.1	7
74	Optical Stark spectroscopy of molecular aggregates. Journal of Chemical Physics, 1996, 104, 5415-5423.	1.2	6
75	Utilizing Microcavities To Suppress Third-Order Cascades in Fifth-Order Raman Spectra. Journal of Physical Chemistry Letters, 2017, 8, 3387-3391.	2.1	6
76	Cooperative radiative decay of disordered molecular monolayers. Physical Review B, 1994, 50, 5609-5619.	1.1	5
77	Off-Resonant Electronic and Vibrational Molecular Polarizabilities. Time-Dependent Collective-Oscillator Expansion. Journal of Physical Chemistry A, 2000, 104, 4263-4271.	1.1	4
78	Compensation for extreme outages caused by polarization mode dispersion and amplifier noise. Optics Express, 2003, 11, 1607.	1.7	4
79	Exciton confinement and nonlocal nonlinear optical response of organic quantum wells. Physical Review B, 1994, 49, 17079-17091.	1.1	3
80	Optical Absorption of Long Range Electron Transfer Systems in Intense Fields. Journal of the Chinese Chemical Society, 2000, 47, 615-623.	0.8	3
81	Coherent-state representation of reduced density matrices of correlated electronic systems. Chemical Physics Letters, 2000, 327, 29-37.	1.2	3
82	Quantum quadratic brownian oscillator model for absorption lineshapes. Israel Journal of Chemistry, 2002, 42, 143-149.	1.0	3
83	Extreme outages caused by polarization mode dispersion. Optics Letters, 2003, 28, 2159.	1.7	2
84	Mechanical response functions of finite-temperature Bose-Einstein condensates. Physical Review A, 2003, 67, .	1.0	2
85	Disorder Influenced Absorption Line Shapes of a Chromophore Coupled to Two-Level Systems. Journal of Physical Chemistry A, 2013, 117, 12320-12331.	1.1	2
86	Two-Dimensional Femtosecond Spectroscopies of Coupled Chromophores. Springer Series in Chemical Physics, 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. Journal of Luminescence, 1998, 76-77, 15-21.	1.5	1
89	Geometric picture for coupled electron-nuclear dynamics. International Journal of Quantum Chemistry, 2002, 90, 799-811.	1.0	1
90	Lanczos Algorithm for Electron Transfer Rates in Solvents with Complex Spectral Densities. Advances in Chemical Physics, 2007, , 515-551.	0.3	1

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91	Disorder and spectral line shapes in two-level systems. Chemical Physics Letters, 2013, 582, 66-70.	1.2	1
92	Excited electronic states of carotenoids: Time-dependent density-matrix-response algorithm. , 1998, 70, 711.		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. Journal of Photonics for Energy, 2018, 8, 1.	0.8	1
94	Two-dimensional infrared femtosecond spectroscopy of cyclic pentapeptides. AIP Conference Proceedings, 2000, , .	0.3	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. Springer Series in Chemical Physics, 2001, , 595-597.	0.2	0
99	Energy funneling in the dendrimeric nanostar probed by time-resolved nonlinear spectroscopies. Springer Series in Chemical Physics, 2001, , 610-612.	0.2	0
100	Two-Dimensional Coherent Infrared Spectroscopy of Vibrational Excitons in Polypeptides. , 2001, , .		0