Eric Bittner

List of Publications by Year
in descending order

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117 papers	3,498 citations	126907 33 h-index	155660 55 g-index
121 all docs	121 docs citations	121 times ranked	2560 citing authors

#	Article	IF	Citations
1	Quantum decoherence in mixed quantumâ€classical systems: Nonadiabatic processes. Journal of Chemical Physics, 1995, 103, 8130-8143.	3.0	350
2	Quantum decoherence and the isotope effect in condensed phase nonadiabatic molecular dynamics simulations. Journal of Chemical Physics, 1996, 104, 5942-5955.	3.0	331
3	Conformational Disorder and Ultrafast Exciton Relaxation in PPV-family Conjugated Polymers. Journal of Physical Chemistry B, 2009, 113, 656-667.	2.6	143
4	Quantum wave packet dynamics with trajectories: Implementation with adaptive Lagrangian grids. Journal of Chemical Physics, 2000, 113, 8898-8907.	3.0	111
5	Noise-induced quantum coherence drives photo-carrier generation dynamics at polymeric semiconductor heterojunctions. Nature Communications, 2014, 5, 3119.	12.8	111
6	Rigorous Franckâ€“Condon absorption and emission spectra of conjugated oligomers from quantum chemistry. Journal of Chemical Physics, 2000, 113, 11372-11381.	3.0	104
7	Franckâ€“Condon spectra and electron-libration coupling in para-polyphenyls. Journal of Chemical Physics, 2001, 114, 5863-5870.	3.0	90
8	Spin-Dependent Electron-Hole Capture Kinetics in Luminescent Conjugated Polymers. Physical Review Letters, 2003, 90, 057402.	7.8	90
9	Phonon-Driven Ultrafast Exciton Dissociation at Donor-Acceptor Polymer Heterojunctions. Physical Review Letters, 2008, 100, 107402.	7.8	89
10	Decoherent histories and nonadiabatic quantum molecular dynamics simulations. Journal of Chemical Physics, 1997, 107, 8611-8618.	3.0	81
11	Quantum tunneling dynamics using hydrodynamic trajectories. Journal of Chemical Physics, 2000, 112, 9703-9710.	3.0	80
12	Integrating the quantum Hamiltonâ€“Jacobi equations by wavefront expansion and phase space analysis. Journal of Chemical Physics, 2000, 113, 8888-8897.	3.0	65
13	Exciton dissociation at donor-acceptor polymer heterojunctions: Quantum nonadiabatic dynamics and effective-mode analysis. Journal of Chemical Physics, 2007, 126, 021103.	3.0	63
14	Polaronâ€“excitons and electronâ€“vibrational band shapes in conjugated polymers. Journal of Chemical Physics, 2003, 118, 4291-4296.	3.0	58
15	Time-convolutionless master equation for mesoscopic electron-phonon systems. Journal of Chemical Physics, 2006, 125, 104906.	3.0	57
16	Exciton dissociation dynamics in model donor-acceptor polymer heterojunctions. I. Energetics and spectra. Journal of Chemical Physics, 2005, 122, 214719.	3.0	56
17	Quantum molecular dynamics study of polaron recombination in conjugated polymers. Physical Review B, 2000, 62, 11473-11486.	3.2	55
18	Nonadiabatic quantum dynamics based on a hierarchical electron-phonon model: Exciton dissociation in semiconducting polymers. Journal of Chemical Physics, 2007, 127, 034706.	3.0	52

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19	Ultrafast decoherence dynamics govern photocarrier generation efficiencies in polymer solar cells. Scientific Reports, 2016, 6, 29437.	3.3	52
20	Calculations of the exciton coupling elements between the DNA bases using the transition density cube method. Journal of Chemical Physics, 2008, 128, 035101.	3.0	51
21	Lattice theory of ultrafast excitonic and charge-transfer dynamics in DNA. Journal of Chemical Physics, 2006, 125, 094909.	3.0	49
22	Quantum relaxation dynamics using Bohmian trajectories. Journal of Chemical Physics, 2001, 115, 6309-6316.	3.0	44
23	Frenkel exciton model of ultrafast excited state dynamics in AT DNA double helices. Journal of Photochemistry and Photobiology A: Chemistry, 2007, 190, 328-334.	3.9	42
24	Fluorescence depolarization in poly[2-methoxy-5-((2-ethylhexyl)oxy)-1,4-phenylenevinylene]: Sites versus eigenstates hopping. Journal of Chemical Physics, 2009, 131, 194905.	3.0	41
25	Exciton Dynamics in Disordered Poly(p-phenylenevinylene). 2. Exciton Diffusion. Journal of Physical Chemistry A, 2012, 116, 10319-10327.	2.5	41
26	Electronâ€“Phonon Couplings Inherent in Polarons Drive Exciton Dynamics in Two-Dimensional Metal-Halide Perovskites. Chemistry of Materials, 2019, 31, 7085-7091.	6.7	40
27	Phonon-Driven Exciton Dissociation at Donorâ^'Acceptor Polymer Heterojunctions:â€‰ Direct versus Bridge-Mediated Vibronic Coupling Pathways. Journal of Physical Chemistry B, 2008, 112, 495-506.	2.6	39
28	How disorder controls the kinetics of triplet charge recombination in semiconducting organic polymer photovoltaics. Physical Chemistry Chemical Physics, 2014, 16, 20321-20328.	2.8	37
29	Quantum initial value representations using approximate Bohmian trajectories. Journal of Chemical Physics, 2003, 119, 1358-1364.	3.0	36
30	Estimating Bohmâ€™s quantum force using Bayesian statistics. Journal of Chemical Physics, 2003, 119, 6465-6474.	3.0	35
31	Quantum origins of molecular recognition and olfaction in drosophila. Journal of Chemical Physics, 2012, 137, 22A551.	3.0	34
32	Spectroscopic Investigation of the Effect of Microstructure and Energetic Offset on the Nature of Interfacial Charge Transfer States in Polymer: Fullerene Blends. Journal of the American Chemical Society, 2019, 141, 4634-4643.	13.7	34
33	Relaxation of quantum hydrodynamic modes. International Journal of Quantum Chemistry, 2002, 89, 313-321.	2.0	33
34	Dissipative dynamics of spin-dependent electronâ€“hole capture in conjugated polymers. Journal of Chemical Physics, 2003, 119, 3988-3995.	3.0	33
35	Quantum dissipation in unbounded systems. Physical Review E, 2002, 65, 026143.	2.1	31
36	Electroluminescence Yield in Donorâ^'Acceptor Copolymers and Diblock Polymers:Â A Comparative Theoretical Studyâ€. Journal of Physical Chemistry B, 2004, 108, 10219-10225.	2.6	30

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37	Identifying electron transfer coordinates in donor-bridge-acceptor systems using mode projection analysis. Nature Communications, 2017, 8, 14554.	12.8	27
38	Quantum decoherence: a consistent histories treatment of condensed-phase non-adiabatic quantum molecular dynamics. Computational and Theoretical Chemistry, 1997, 389, 203-216.	1.5	24
39	Theory of non-Condon emission from the interchain exciton in conjugated polymer aggregates. Journal of Chemical Physics, 2007, 126, 191102.	3.0	24
40	Energy and charge-transfer dynamics using projected modes. Journal of Chemical Physics, 2009, 131, 034104.	3.0	22
41	Quantum Light Emission from Coupled Defect States in DNA-Functionalized Carbon Nanotubes. ACS Nano, 2021, 15, 10406-10414.	14.6	22
42	Random growth statistics of long-chain single molecule poly-(p-phenylene vinylene). Journal of Chemical Physics, 2001, 115, 9585-9593.	3.0	21
43	The chlorine nuclear quadrupole coupling tensor in chlorotrifluoroethylene. Journal of Molecular Spectroscopy, 1988, 132, 369-379.	1.2	20
44	Quantum Dissipation in the Hydrodynamic Moment Hierarchy:Â A Semiclassical Truncation Strategyâ€. Journal of Physical Chemistry B, 2002, 106, 7981-7990.	2.6	20
45	Supersymmetric Quantum Mechanics, Excited State Energies and Wave Functions, and the Rayleighâ˜Ritz Variational Principle: A Proof of Principle Study. Journal of Physical Chemistry A, 2009, 113, 15257-15264.	2.5	20
46	A dynamic model for exciton self-trapping in conjugated polymers. I. Theory. Journal of Chemical Physics, 2000, 112, 5399-5409.	3.0	19
47	Excitation Transfer in Aggregated and Linearly Confined Poly(p-phenylene vinylene) Chains. Journal of Physical Chemistry A, 2003, 107, 7092-7100.	2.5	19
48	Quantum hydrodynamics: Capturing a reactive scattering resonance. Journal of Chemical Physics, 2005, 123, 054107.	3.0	19
49	Estimating the conditions for polariton condensation in organic thin-film microcavities. Journal of Chemical Physics, 2012, 136, 034510.	3.0	19
50	Intramolecular Charge- and Energy-Transfer Rates with Reduced Modes: Comparison to Marcus Theory for Donorâ€“Bridgeâ€“Acceptor Systems. Journal of Physical Chemistry A, 2014, 118, 5196-5203.	2.5	19
51	Exciton Regeneration Dynamics in Model Donorâ˜Acceptor Polymer Heterojunctions. Journal of Physical Chemistry B, 2006, 110, 21001-21009.	2.6	18
52	Tripodal amine ligands for accelerating Cu-catalyzed azideâ€“alkyne cycloaddition: efficiency and stability against oxidation and dissociation. Catalysis Science and Technology, 2017, 7, 2474-2485.	4.1	17
53	Excitonic coupling dominates the homogeneous photoluminescence excitation linewidth in semicrystalline polymeric semiconductors. Physical Review B, 2017, 95, .	3.2	17
54	Carâ€“Parrinello molecular dynamics on excited state surfaces. Journal of Chemical Physics, 1999, 110, 6645-6656.	3.0	16

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55	Quantum hydrodynamics: Mixed states, dissipation, and a new hybrid quantum-classical approach. International Journal of Quantum Chemistry, 2004, 100, 1153-1162.	2.0	16
56	Ground-state potential energy curves of phenylenevinylene oligomers. Chemical Physics, 2002, 276, 81-91.	1.9	14
57	Excited state calculations on fluorene-based polymer blends: Effect of stacking orientation and solvation. Journal of Chemical Physics, 2007, 126, 181101.	3.0	14
58	Supersymmetric Approach to Excited States. Journal of Physical Chemistry A, 2009, 113, 15276-15280.	2.5	14
59	Probing dynamical symmetry breaking using quantum-entangled photons. Quantum Science and Technology, 2018, 3, 015003.	5.8	14
60	Using quantum trajectories and adaptive grids to solve quantum dynamical problems. Computing in Science and Engineering, 2003, 5, 22-30.	1.2	13
61	New Generalization of Supersymmetric Quantum Mechanics to Arbitrary Dimensionality or Number of Distinguishable Particles. Journal of Physical Chemistry A, 2010, 114, 8202-8216.	2.5	13
62	Mixed quantum classical simulations of excitons in peptide helices. Journal of Chemical Physics, 2011, 134, 205103.	3.0	13
63	The role of structural fluctuations and environmental noise in the electron/hole separation kinetics at organic polymer bulk-heterojunction interfaces. Physical Chemistry Chemical Physics, 2015, 17, 28853-28859.	2.8	13
64	Quantum stochastic approach for molecule/surface scattering. II. Adsorption resonances of He atoms on Xe overlayers. Journal of Chemical Physics, 1994, 101, 2446-2454.	3.0	12
65	Thermodynamics of Atomic Clusters Using Variational Quantum Hydrodynamicsâ€. Journal of Physical Chemistry A, 2007, 111, 10345-10352.	2.5	12
66	Probing polaron excitation spectra in organic semiconductors by photoinduced-absorption-detected two-dimensional coherent spectroscopy. Chemical Physics, 2016, 481, 281-286.	1.9	12
67	Photon entanglement entropy as a probe of many-body correlations and fluctuations. Journal of Chemical Physics, 2019, 150, 184106.	3.0	12
68	Stochastic scattering theory for excitation-induced dephasing: Time-dependent nonlinear coherent exciton lineshapes. Journal of Chemical Physics, 2020, 153, 164706.	3.0	12
69	Energy relaxation dynamics and universal scaling laws in organic light-emitting diodes. International Journal of Quantum Chemistry, 2003, 95, 521-531.	2.0	11
70	A Self-Consistent Field Quantum Hydrodynamic Approach for Molecular Clustersâ€. Journal of Physical Chemistry A, 2006, 110, 5333-5341.	2.5	11
71	The microwave spectrum and structure of kryptonâ€"phosphorus trifluoride. Journal of Molecular Structure, 1988, 189, 105-110.	3.6	10
72	A dynamic model for exciton self-trapping in conjugated polymers. II. Implementation. Journal of Chemical Physics, 2000, 112, 5410-5419.	3.0	10

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73	Exactly solvable approximating models for Rabi Hamiltonian dynamics. Physical Chemistry Chemical Physics, 2006, 8, 1378.	2.8	10
74	Frenkel biexcitons in hybrid HJ photophysical aggregates. Science Advances, 2021, 7, eabi5197.	10.3	10
75	Photoconductivity and current producing states in molecular semiconductors. Journal of Chemical Physics, 2005, 122, 034707.	3.0	9
76	Drift-diffusion of a localized quantum state along a thermal gradient in a model Î±-helix. Chemical Physics, 2010, 370, 137-142.	1.9	9
77	Thermodynamics of exciton/polaritons in one and two dimensional organic single-crystal microcavities. Physical Chemistry Chemical Physics, 2012, 14, 3226.	2.8	9
78	Probing exciton/exciton interactions with entangled photons: Theory. Journal of Chemical Physics, 2020, 152, 071101.	3.0	9
79	Hyperfine Structure in the Microwave Spectrum of Trifluorophosphine Oxide and Sulfide. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 1987, 42, 1415-1417.	1.5	8
80	Quantum transport in chains with noisy off-diagonal couplings. Journal of Chemical Physics, 2005, 123, 244903.	3.0	8
81	Computing intramolecular charge and energy transfer rates using optimal modes. Journal of Chemical Physics, 2015, 142, 244114.	3.0	8
82	Ultrafast Photophysics of Organic Semiconductor Junctions. Springer Series in Chemical Physics, 2009, , 183-212.	0.2	8
83	Quantum Dynamics. , 0, , .		8
84	Quantum stochastic approach for molecule/surface scattering. I. Atomâ€“phonon interactions. Journal of Chemical Physics, 1993, 99, 8229-8237.	3.0	7
85	On the low energy limits of inelastic moleculeâ€“surface scattering. Journal of Chemical Physics, 1994, 100, 5314-5322.	3.0	7
86	Manyâ€body effects and resonances in universal quantum sticking of cold atoms to surfaces. Journal of Chemical Physics, 1995, 102, 2614-2621.	3.0	7
87	The Cisâ^'Trans Isomerization of 1,2,5,6-Tetrasilacycloocta-3,7-dienes:Â Analysis by Mechanistic Probes and Density Functional Theory. Journal of Organic Chemistry, 2001, 66, 5275-5283.	3.2	7
88	Simplifying organic complexity. Nature Physics, 2006, 2, 591-592.	16.7	7
89	Reply to â€œComment on 'New Generalization of Supersymmetric Quantum Mechanics to Arbitrary Dimensionality or Number of Distinguishable Particles'â€• Journal of Physical Chemistry A, 2011, 115, 950-950.	2.5	7
90	Quantum Symmetry Breaking of Exciton/Polaritons in a Metal-Nanorod Plasmonic Array. Journal of Physical Chemistry A, 2016, 120, 3109-3116.	2.5	7

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91	Stochastic scattering theory for excitation-induced dephasing: Comparison to the Andersonâ€“Kubo lineshape. Journal of Chemical Physics, 2020, 153, 154115.	3.0	7
92	Homogeneous Optical Line Widths in Hybrid Ruddlesdenâ€“Popper Metal Halides Can Only Be Measured Using Nonlinear Spectroscopy. Journal of Physical Chemistry C, 2022, 126, 5378-5387.	3.1	7
93	Isotopic effect and temperature dependent intramolecular excitation energy transfer in a model donorâ€“acceptor dyad. Physical Chemistry Chemical Physics, 2010, 12, 7418.	2.8	6
94	Relating free energy and open-circuit voltage to disorder in organic photovoltaic systems. Journal of Chemical Physics, 2018, 149, 244123.	3.0	6
95	A quantum molecular dynamics study of exciton self-trapping in conjugated polymers: Temperature dependence and spectroscopy. Journal of Chemical Physics, 2000, 112, 7684-7692.	3.0	5
96	Exciton and Charge-Transfer Dynamics in Polymer Semiconductors. Springer Series in Chemical Physics, 2007, , 57-85.	0.2	5
97	Unexpected Cis,Cis to Trans,Trans Isomerization of a Disilanyl Analogue of 1,5-Cyclooctadiene. Journal of Organic Chemistry, 1998, 63, 8624-8625.	3.2	4
98	How charges separate: correlating disorder, free energy, and open-circuit voltage in organic photovoltaics. Faraday Discussions, 2019, 216, 236-251.	3.2	4
99	Does interchain stacking morphology contribute to the singletâ€“triplet interconversion dynamics in polymer heterojunctions?. Chemical Physics, 2009, 357, 159-162.	1.9	3
100	Hamiltonian approach for wave packet dynamics: Beyond Gaussian wave functions. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 2215-2218.	2.1	3
101	Quantum Simulations of Charge Separation at a Model Donor-Acceptor Interface: Role of Delocalization and Local Packing. Advances in Condensed Matter Physics, 2018, 2018, 1-10.	1.1	3
102	Mixed Quantum Classical Simulations of Charge-Transfer Dynamics in a Model Light-Harvesting Complex. I. Charge-Transfer Dynamics. Journal of Physical Chemistry B, 2020, 124, 2149-2157.	2.6	3
103	Nonequilibrium states of a plasmonic Dicke model with coherent and dissipative surface-plasmonâ€“quantum-emitter interactions. Physical Review Research, 2020, 2, .	3.6	3
104	Publisherâ€™s Note: Spin-Dependent Electron-Hole Capture Kinetics in Luminescent Conjugated Polymers [Phys. Rev. Lett.PRLTAO0031-900790, 057402 (2003)]. Physical Review Letters, 2003, 90, .	7.8	2
105	Quantum dynamics of ultrafast photoinduced processes in organic semiconductors: exciton dissociation at polymer heterojunctions. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1130601-1130602.	0.2	2
106	Mixed Quantum Classical Simulations of Charge-Transfer Dynamics in a Model Light-Harvesting Complex. II. Transient Vibrational Analysis. Journal of Physical Chemistry B, 2020, 124, 2158-2167.	2.6	2
107	Adaptive Quantum Monte Carlo Approach States for High-Dimensional Systems. , 2012, , 303-373.		2
108	Polaron recombination dynamics in linear polyenes. Synthetic Metals, 2001, 121, 1635-1636.	3.9	1

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109	Ultrafast Electronic Processes At Semiconductor Polymer Heterojunctions: A Molecular-Level, Quantum-Dynamical Analysis. , 2009, , .		1
110	Role of dark excitations in the nonequilibrium condensation of exciton polaritons in optically-pumped organic single crystal microcavities. International Journal of Modern Physics B, 2015, 29, 1550157.	2.0	1
111	Energy and charge-transfer in natural photosynthesis: general discussion. Faraday Discussions, 2019, 216, 133-161.	3.2	1
112	Quantum Mechanics in Biology: Photoexcitations in DNA. Springer Series in Chemical Physics, 2009, , 103-126.	0.2	1
113	Concerning the stability of biexcitons in hybrid HJ aggregates of Ï€-conjugated polymers. Journal of Chemical Physics, 2022, 156, 181101.	3.0	1
114	Stochastic exciton-scattering theory of optical line shapes: Renormalized many-body contributions. Journal of Chemical Physics, 2022, 157, .	3.0	1
115	Interplay Between the Repulsive and Attractive Interaction and the Spacial Dimensionality of an Excess Electron in a Simple Fluid. Journal of Theoretical and Computational Chemistry, 2003, 02, 129-138.	1.8	0
116	Competing role of quantum localization and interfacial disorder in determining triplet exciton fission and recombination dynamics in polymer/fullerene photovoltaics. Proceedings of SPIE, 2014, , .	0.8	0
117	Photovoltaics and bio-inspired light harvesting: general discussion. Faraday Discussions, 2019, 216, 269-300.	3.2	0