Gregory Engel

List of Publications by Year
in descending order

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100 papers	7,889 citations	94269 37 h-index	48187 88 g-index
104 all docs	104 docs citations	104 times ranked	5950 citing authors

#	Article	IF	Citations
1	Evidence for wavelike energy transfer through quantum coherence in photosynthetic systems. Nature, 2007, 446, 782-786.	13.7	2,685
2	Long-lived quantum coherence in photosynthetic complexes at physiological temperature. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12766-12770.	3.3	886
3	Using coherence to enhance function in chemical and biophysical systems. Nature, 2017, 543, 647-656.	13.7	477
4	Red, Yellow, Green, and Blue Amplified Spontaneous Emission and Lasing Using Colloidal CdSe Nanoplatelets. ACS Nano, 2015, 9, 9475-9485.	7.3	240
5	Superficially porous silica microspheres for fast high-performance liquid chromatography of macromolecules. Journal of Chromatography A, 2000, 890, 3-13.	1.8	237
6	Direct evidence of quantum transport in photosynthetic light-harvesting complexes. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 20908-20912.	3.3	203
7	Quantum coherence spectroscopy reveals complex dynamics in bacterial light-harvesting complex 2 (LH2). Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 706-711.	3.3	173
8	Cross-peak-specific two-dimensional electronic spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 14203-14208.	3.3	137
9	Engineering Coherence Among Excited States in Synthetic Heterodimer Systems. Science, 2013, 340, 1431-1434.	6.0	124
10	Origin of Broad Emission Spectra in InP Quantum Dots: Contributions from Structural and Electronic Disorder. Journal of the American Chemical Society, 2018, 140, 15791-15803.	6.6	123
11	Visualization of Excitonic Structure in the Fenna-Matthews-Olson Photosynthetic Complex by Polarization-Dependent Two-Dimensional Electronic Spectroscopy. Biophysical Journal, 2008, 95, 847-856.	0.2	108
12	Design considerations in high-sensitivity off-axis integrated cavity output spectroscopy. Applied Physics B: Lasers and Optics, 2008, 92, 467.	1.1	102
13	Real-time mapping of electronic structure with single-shot two-dimensional electronic spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 16444-16447.	3.3	92
14	Kinetic oxygen isotope effects during dissimilatory sulfate reduction: A combined theoretical and experimental approach. Geochimica Et Cosmochimica Acta, 2010, 74, 2011-2024.	1.6	89
15	A new cavity based absorption instrument for detection of water isotopologues in the upper troposphere and lower stratosphere. Review of Scientific Instruments, 2009, 80, 044102.	0.6	87
16	Ultrasensitive near-infrared integrated cavity output spectroscopy technique for detection of CO at 157 Î¼m: new sensitivity limits for absorption measurements in passive optical cavities. Applied Optics, 2006, 45, 9221.	2.1	86
17	Quantum Biology: An Update and Perspective. Quantum Reports, 2021, 3, 80-126.	0.6	74
18	Extracting the Excitonic Hamiltonian of the Fenna-Matthews-Olson Complex Using Three-Dimensional Third-Order Electronic Spectroscopy. Biophysical Journal, 2011, 100, 2043-2052.	0.2	72

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19	Elucidation of population and coherence dynamics using cross-peaks in two-dimensional electronic spectroscopy. Chemical Physics, 2007, 341, 285-295.	0.9	65
20	Single-Shot Gradient-Assisted Photon Echo Electronic Spectroscopy. Journal of Physical Chemistry A, 2011, 115, 3787-3796.	1.1	65
21	Dynamic localization of electronic excitation in photosynthetic complexes revealed with chiral two-dimensional spectroscopy. Nature Communications, 2014, 5, 3286.	5.8	65
22	Persistent Interexcitonic Quantum Coherence in CdSe Quantum Dots. Journal of Physical Chemistry Letters, 2014, 5, 196-204.	2.1	64
23	Exploring size and state dynamics in CdSe quantum dots using two-dimensional electronic spectroscopy. Journal of Chemical Physics, 2014, 140, 084701.	1.2	62
24	Scalable Ligand-Mediated Transport Synthesis of Organicâ€“Inorganic Hybrid Perovskite Nanocrystals with Resolved Electronic Structure and Ultrafast Dynamics. ACS Nano, 2017, 11, 2689-2696.	7.3	62
25	Robustness of electronic coherence in the Fennaâ€“Matthewsâ€“Olson complex to vibronic and structural modifications. Faraday Discussions, 2011, 150, 459.	1.6	58
26	Two-dimensional electronic spectroscopy of CdSe nanoparticles at very low pulse power. Journal of Chemical Physics, 2013, 138, 014705.	1.2	53
27	Dissecting Hidden Couplings Using Fifth-Order Three-Dimensional Electronic Spectroscopy. Journal of Physical Chemistry Letters, 2010, 1, 2876-2880.	2.1	52
28	Quantum coherences reveal excited-state dynamics in biophysical systems. Nature Reviews Chemistry, 2019, 3, 477-490.	13.8	51
29	Dynamics of electronic dephasing in the Fennaâ€“Matthewsâ€“Olson complex. New Journal of Physics, 2010, 12, 065042.	1.2	50
30	Delocalized quantum states enhance photocell efficiency. Physical Chemistry Chemical Physics, 2015, 17, 5743-5750.	1.3	49
31	Correlated Protein Environments Drive Quantum Coherence Lifetimes in Photosynthetic Pigment-Protein Complexes. CheM, 2018, 4, 138-149.	5.8	45
32	Measurement of electronic splitting in PbS quantum dots by two-dimensional nonlinear spectroscopy. Physical Review B, 2012, 86, .	1.1	44
33	Mapping the ultrafast flow of harvested solar energy in living photosynthetic cells. Nature Communications, 2017, 8, 988.	5.8	44
34	Two-dimensional electronic spectroscopy of bacteriochlorophyll a in solution: Elucidating the coherence dynamics of the Fenna-Matthews-Olson complex using its chromophore as a control. Journal of Chemical Physics, 2012, 137, 125101.	1.2	39
35	Dispersion-free continuum two-dimensional electronic spectrometer. Applied Optics, 2014, 53, 1909.	0.9	39
36	Excited and ground state vibrational dynamics revealed by two-dimensional electronic spectroscopy. Journal of Chemical Physics, 2012, 137, 024507.	1.2	38

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37	Time Scales of Coherent Dynamics in the Light-Harvesting Complex 2 (LH2) of Rhodobacter sphaeroides. Journal of Physical Chemistry Letters, 2013, 4, 1404-1409.	2.1	38
38	Controlling quantum-beating signals in 2D electronic spectra by packing synthetic heterodimers on single-walled carbon nanotubes. Nature Chemistry, 2017, 9, 219-225.	6.6	38
39	Energy Transfer Observed in Live Cells Using Two-Dimensional Electronic Spectroscopy. Journal of Physical Chemistry Letters, 2013, 4, 3636-3640.	2.1	34
40	Elucidation of near-resonance vibronic coherence lifetimes by nonadiabatic electronic-vibrational state character mixing. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 18263-18268.	3.3	34
41	Ultrafast Excitation Transfer in Cy5 DNA Photonic Wires Displays Dye Conjugation and Excitation Energy Dependency. Journal of Physical Chemistry Letters, 2020, 11, 4163-4172.	2.1	34
42	Single-shot ultrabroadband two-dimensional electronic spectroscopy of the light-harvesting complex LH2. Optics Letters, 2011, 36, 1665.	1.7	33
43	Quantum coherence in photosynthesis. Procedia Chemistry, 2011, 3, 222-231.	0.7	32
44	Inhomogeneous dephasing masks coherence lifetimes in ensemble measurements. Journal of Chemical Physics, 2012, 136, 164508.	1.2	31
45	Photosynthesis tunes quantum-mechanical mixing of electronic and vibrational states to steer exciton energy transfer. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	30
46	Extracting dynamics of excitonic coherences in congested spectra of photosynthetic light harvesting antenna complexes. Faraday Discussions, 2011, 153, 93.	1.6	29
47	Towards a coherent picture of excitonic coherence in the Fennaâ€“Matthewsâ€“Olson complex. Journal of Physics B: Atomic, Molecular and Optical Physics, 2012, 45, 154013.	0.6	29
48	Probing energy transfer events in the light harvesting complex 2 (LH2) of Rhodobacter sphaeroides with two-dimensional spectroscopy. Journal of Chemical Physics, 2013, 139, 155101.	1.2	29
49	DNA scaffold supports long-lived vibronic coherence in an indodicarbocyanine (Cy5) dimer. Chemical Science, 2020, 11, 8546-8557.	3.7	28
50	Nonlinear Spectroscopic Theory of Displaced Harmonic Oscillators with Differing Curvatures: A Correlation Function Approach. Journal of Physical Chemistry A, 2013, 117, 9444-9453.	1.1	27
51	Communication: Coherences observed in vivo in photosynthetic bacteria using two-dimensional electronic spectroscopy. Journal of Chemical Physics, 2015, 143, 101101.	1.2	26
52	Towards quantification of vibronic coupling in photosynthetic antenna complexes. Journal of Chemical Physics, 2015, 142, 212446.	1.2	25
53	Signatures of correlated excitonic dynamics in two-dimensional spectroscopy of the Fenna-Matthew-Olson photosynthetic complex. Journal of Chemical Physics, 2012, 136, 104505.	1.2	24
54	Pigment Organization and Energy Level Structure in Light-Harvesting Complex 4: Insights from Two-Dimensional Electronic Spectroscopy. Journal of Physical Chemistry B, 2009, 113, 6495-6504.	1.2	23

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55	Coherent Transport and Energy Flow Patterns in Photosynthesis under Incoherent Excitation. Journal of Physical Chemistry B, 2014, 118, 2693-2702.	1.2	22
56	Bacteriophytochrome Photoisomerization Proceeds Homogeneously Despite Heterogeneity in Ground State. Biophysical Journal, 2016, 111, 2125-2134.	0.2	21
57	Mutations to R. sphaeroides Reaction Center Perturb Energy Levels and Vibronic Coupling but Not Observed Energy Transfer Rates. Journal of Physical Chemistry A, 2016, 120, 1479-1487.	1.1	21
58	Two-Dimensional Spectroscopy Can Distinguish between Decoherence and Dephasing of Zero-Quantum Coherences. Journal of Physical Chemistry A, 2012, 116, 282-289.	1.1	20
59	Cysteine-mediated mechanism disrupts energy transfer to prevent photooxidation. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8562-8564.	3.3	20
60	Precise multipass Herriott cell design: Derivation of controlling design equations. Optics Letters, 2007, 32, 704.	1.7	19
61	Independent phasing of rephasing and non-rephasing 2D electronic spectra. Journal of Chemical Physics, 2013, 139, 084201.	1.2	19
62	Dark states and delocalization: Competing effects of quantum coherence on the efficiency of light harvesting systems. Journal of Chemical Physics, 2018, 148, 064304.	1.2	18
63	Evidence for the Dominance of Carrier-Induced Band Gap Renormalization over Biexciton Formation in Cryogenic Ultrafast Experiments on MoS₂ Monolayers. Journal of Physical Chemistry Letters, 2020, 11, 2658-2666.	2.1	17
64	Electronic Structure and Dynamics of Higher-Lying Excited States in Light Harvesting Complex 1 from Rhodobacter sphaeroides. Journal of Physical Chemistry A, 2016, 120, 4124-4130.	1.1	15
65	Probing vibrational dynamics of PM650 with two-dimensional electronic spectroscopy. Chemical Physics, 2012, 403, 59-67.	0.9	14
66	The dependence of exciton transport efficiency on spatial patterns of correlation within the spectral bath. New Journal of Physics, 2013, 15, 095019.	1.2	14
67	Sub-10 fs Intervalley Exciton Coupling in Monolayer MoS₂ Revealed by Helicity-Resolved Two-Dimensional Electronic Spectroscopy. ACS Nano, 2021, 15, 10253-10263.	7.3	14
68	Analysis by Capillary Electrophoresis of the Kinetics of Charge Ladder Formation for Bovine Carbonic Anhydrase. Analytical Chemistry, 2002, 74, 1870-1878.	3.2	13
69	Dark states enhance the photocell power via phononic dissipation. Physical Chemistry Chemical Physics, 2016, 18, 31845-31849.	1.3	13
70	Communication: Broad manifold of excitonic states in light-harvesting complex 1 promotes efficient unidirectional energy transfer in vivo. Journal of Chemical Physics, 2017, 147, 131101.	1.2	13
71	Disentanglement of excited-state dynamics with implications for FRET measurements: two-dimensional electronic spectroscopy of a BODIPY-functionalized cavitand. Chemical Science, 2018, 9, 3694-3703.	3.7	13
72	Double-excitation manifold's effect on exciton transfer dynamics and the efficiency of coherent light harvesting. Physical Chemistry Chemical Physics, 2018, 20, 30032-30040.	1.3	13

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73	Orientational Dynamics of Transition Dipoles and Exciton Relaxation in LH2 from Ultrafast Two-Dimensional Anisotropy. Journal of Physical Chemistry Letters, 2019, 10, 270-277.	2.1	11
74	Peak shape analysis of diagonal and off-diagonal features in the two-dimensional electronic spectra of the Fennaâ€“Matthewsâ€“Olson complex. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 3692-3708.	1.6	10
75	Biomimetic Fabrication of 3D Structures by Spontaneous Folding of Tapes. Journal of the American Chemical Society, 2006, 128, 9314-9315.	6.6	9
76	Redox Conditions Affect Ultrafast Exciton Transport in Photosynthetic Pigmentâ€“Protein Complexes. Journal of Physical Chemistry Letters, 2018, 9, 89-95.	2.1	9
77	Excitations Partition into Two Distinct Populations in Bulk Perovskites. Advanced Optical Materials, 2018, 6, 1700975.	3.6	8
78	Redox conditions correlated with vibronic coupling modulate quantum beats in photosynthetic pigmentâ€“protein complexes. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, e2112817118.	3.3	7
79	Connecting bright and dark states through accidental degeneracy caused by lack of symmetry. Journal of Chemical Physics, 2018, 148, 204307.	1.2	6
80	Direct observation of quantum coherence. , 2014, , 144-158.		5
81	Response to Comment on â€œEngineering coherence among excited states in synthetic heterodimer systemsâ€. Science, 2014, 344, 1099-1099.	6.0	5
82	Time-Domain Line-Shape Analysis from 2D Spectroscopy to Precisely Determine Hamiltonian Parameters for a Photosynthetic Complex. Journal of Physical Chemistry B, 2021, 125, 2812-2820.	1.2	5
83	Quantum biology of retinal. , 2014, , 237-263.		4
84	Ultrafast energy transfer from rigid, branched side-chains into a conjugated, alternating copolymer. Journal of Chemical Physics, 2014, 140, 034903.	1.2	4
85	Annihilation of Excess Excitations along Phycocyanin Rods Precedes Downhill Flow to Allophycocyanin Cores in the Phycobilisome of Synechococcus elongatus PCC 7942. Journal of Physical Chemistry B, 2022, 126, 23-29.	1.2	4
86	Electron transfer in proteins. , 2014, , 198-217.		3
87	Optical Resonance Imaging: An Optical Analog to MRI with Subdiffraction-Limited Capabilities. ACS Photonics, 2016, 3, 2445-2452.	3.2	3
88	Leveraging Dynamical Symmetries in Two-Dimensional Electronic Spectra to Extract Population Transfer Pathways. Journal of Physical Chemistry A, 0, , .	1.1	3
89	Principles of multi-dimensional electronic spectroscopy. , 2014, , 82-120.		2
90	Modeling Ultrafast Exciton Migration within the Electron Donor Domains of Bulk Heterojunction Organic Photovoltaics. Journal of Physical Chemistry C, 2017, 121, 5467-5479.	1.5	2

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91	Spatial Patterns of Light-Harvesting Antenna Complex Arrangements Tune the Transfer-to-Trap Efficiency of Excitons in Purple Bacteria. Journal of Physical Chemistry Letters, 2021, 12, 6967-6973.	2.1	2
92	Leveraging scatter in two-dimensional spectroscopy: passive phase drift correction enables a global phasing protocol. Optics Express, 2020, 28, 32869.	1.7	2
93	Quantum Coherence in Chemical and Photobiological Systems. ACS Symposium Series, 0, , 411-436.	0.5	1
94	Maximal Coherence at Room Temperature in the Bacterial Photosynthetic Reaction Center. Biophysical Journal, 2012, 102, 167a.	0.2	0
95	Quantum biology: introduction. , 0, , 3-13.		0
96	Generalized FÃ¶rster resonance energy transfer. , 0, , 53-81.		0
97	Coherent excitons in carbon nanotubes. , 0, , 335-349.		0
98	Probing Delocalization in Photosynthetic Antenna Complexes with Femtosecond Chiral Two-Dimensional Spectroscopy. , 2014, , .		0
99	Two-dimensional Electronic Spectroscopy of Photosynthetic Light-Harvesting Complexes. , 2007, , .		0
100	Crystal structure of 4â€²-allyl-4,5,6,7,2â€²,7â€²-hexachlorofluorescein allyl ester unknown solvate. Acta Crystallographica Section E: Crystallographic Communications, 2018, 74, 83-87.	0.2	0