Shaul Mukamel

List of Publications by Citations

710 papers	31,046 citations	89 h-index	140 g-index
744 ext. papers	33,451 ext. citations	5.8 avg, IF	7.52 L-index

#	Paper	IF	Citations
710	Nonequilibrium fluctuations, fluctuation theorems, and counting statistics in quantum systems. *Reviews of Modern Physics*, **2009**, 81, 1665-1702	40.5	842
709	Multidimensional femtosecond correlation spectroscopies of electronic and vibrational excitations. *Annual Review of Physical Chemistry*, **2000**, 51, 691-729	15.7	714
708	Two-dimensional femtosecond vibrational spectroscopy of liquids. *Journal of Chemical Physics*, **1993**, 99, 9496-9511	3.9	515
707	Density matrix analysis and simulation of electronic excitations in conjugated and aggregated molecules. *Chemical Reviews*, **2002**, 102, 3171-212	68.1	464
706	Coherent multidimensional optical spectroscopy of excitons in molecular aggregates; quasiparticle versus supermolecule perspectives. *Chemical Reviews*, **2009**, 109, 2350-408	68.1	386
705	Using coherence to enhance function in chemical and biophysical systems. *Nature*, **2017**, 543, 647-656	50.4	367
704	Exciton-migration and three-pulse femtosecond optical spectroscopies of photosynthetic antenna complexes. *Journal of Chemical Physics*, **1998**, 108, 7763-7774	3.9	345
703	Electronic Coherence and Collective Optical Excitations of Conjugated Molecules. *Science*, **1997**, 277, 781-787	33.3	315
702	Experimental determination of the quantum-mechanical state of a molecular vibrational mode using fluorescence tomography. *Physical Review Letters*, **1995**, 74, 884-887	7.4	266
701	Nonlinear susceptibilities of molecular aggregates: Enhancement of chi (3) by size. *Physical Review A*, **1989**, 40, 5783-5801	2.6	259
700	Femtosecond Optical Spectroscopy: A Direct Look at Elementary Chemical Events. *Annual Review of Physical Chemistry*, **1990**, 41, 647-681	15.7	241
699	Many-body approaches for simulating coherent nonlinear spectroscopies of electronic and vibrational excitons. *Chemical Reviews*, **2004**, 104, 2073-98	68.1	234
698	Dielectric friction and the transition from adiabatic to nonadiabatic electron transfer. I. Solvation dynamics in Liouville space. *Journal of Chemical Physics*, **1988**, 88, 3263-3280	3.9	234
697	Collisionless Multiphoton Dissociation of SF6: A Statistical Thermodynamic Process. *Physical Review Letters*, **1977**, 38, 1131-1134	7.4	234
696	Off-resonant transient birefringence in liquids. *Journal of Chemical Physics*, **1993**, 99, 2410-2428	3.9	231
695	Superradiance in molecular aggregates. *Journal of Chemical Physics*, **1989**, 91, 683-700	3.9	228
694	Quantum extension of the Jarzynski relation: analogy with stochastic dephasing. *Physical Review Letters*, **2003**, 90, 170604	7.4	210

693	Some features of vibrational relaxation of a diatomic molecule in a dense medium. *Journal of Chemical Physics*, **1974**, 60, 3929-3934	3.9	210
692	Femtosecond pump-probe spectroscopy of polyatomic molecules in condensed phases. *Physical Review A*, **1990**, 41, 6485-6504	2.6	204
691	Stilbenoid Dimers: Dissection of a Paracyclophane Chromophore. *Journal of the American Chemical Society*, **1998**, 120, 9188-9204	16.4	203
690	Energy gap law for vibrational relaxation of a molecule in a dense medium. *Journal of Chemical Physics*, **1975**, 63, 200-207	3.9	202
689	Photosynthetic reaction center as a quantum heat engine. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 2746-51	11.5	192
688	Nonlinear optics of semiconductor and molecular nanostructures; a common perspective. *Reviews of Modern Physics*, **1998**, 70, 145-174	40.5	191
687	Through-Space Charge Transfer and Nonlinear Optical Properties of Substituted Paracyclophane. *Journal of the American Chemical Society*, **2000**, 122, 11956-11962	16.4	188
686	Localized Electronic Excitations in Phenylacetylene Dendrimers. *Journal of Physical Chemistry B*, **1998**, 102, 3310-3315	3.4	180
685	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, 20908-12	11.5	176
684	Polarons, localization, and excitonic coherence in superradiance of biological antenna complexes. *Journal of Chemical Physics*, **1997**, 107, 3876-3893	3.9	176
683	Optical control of molecular dynamics: Molecular cannons, reflectrons, and wave-packet focusers. *Journal of Chemical Physics*, **1993**, 99, 6562-6578	3.9	176
682	Time-resolved fluorescence and hole-burning line shapes of solvated molecules: Longitudinal dielectric relaxation and vibrational dynamics. *Journal of Chemical Physics*, **1987**, 87, 5840-5857	3.9	176
681	Two-Dimensional Raman Spectroscopy of Vibrational Interactions in Liquids. *Physical Review Letters* , **1997**, 79, 2702-2705	7.4	175
680	Multiple Exciton Coherence Sizes in Photosynthetic Antenna Complexes viewed by PumpÐProbe Spectroscopy. *Journal of Physical Chemistry B*, **1997**, 101, 7332-7342	3.4	173
679	Electrostatic DFT map for the complete vibrational amide band of NMA. *Journal of Physical Chemistry A*, **2005**, 109, 9747-59	2.8	169
678	Temperature-dependent superradiant decay of excitons in small aggregates. *Physical Review Letters*, **1990**, 65, 211-214	7.4	169
677	Density-matrix representation of nonadiabatic couplings in time-dependent density functional (TDDFT) theories. *Journal of Chemical Physics*, **2000**, 112, 3572-3579	3.9	161
676	Electronic dephasing, vibrational relaxation, and solvent friction in molecular nonlinear optical line shapes. *Journal of Chemical Physics*, **1988**, 89, 5160-5176	3.9	161

675	Eigenstate-free, Green function, calculation of molecular absorption and fluorescence line shapes. *Journal of Chemical Physics*, **1986**, 85, 5908-5923	3.9	161
674	Selectivity in coherent transient Raman measurements of vibrational dephasing in liquids. *Journal of Chemical Physics*, **1985**, 83, 2116-2128	3.9	157
673	Simulation of the intermolecular vibrational spectra of liquid water and water clusters. *Journal of Chemical Physics*, **1993**, 98, 4413-4421	3.9	155
672	Nonlinear optical signals and spectroscopy with quantum light. *Reviews of Modern Physics*, **2016**, 88,	40.5	150
671	Vibrational sum-frequency generation spectroscopy at the water/lipid interface: molecular dynamics simulation study. *Journal of the American Chemical Society*, **2010**, 132, 6434-42	16.4	148
670	Multidimensional femtosecond correlation spectroscopies of electronic and vibrational excitons. *Journal of Chemical Physics*, **1999**, 110, 5011-5028	3.9	146
669	Photon echoes of polyatomic molecules in condensed phases. *Journal of Chemical Physics*, **1991**, 94, 179-190	3.9	145
668	Roadmap of ultrafast x-ray atomic and molecular physics. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2018**, 51, 032003	1.3	144
667	Efficient fluoride-selective fluorescent host: experiment and theory. *Journal of Organic Chemistry*, **2004**, 69, 943-50	4.2	139
666	Multiphoton molecular dissociation in intense laser fields. *Journal of Chemical Physics*, **1976**, 65, 5204-5225	3.9	139
665	Coherent multidimensional vibrational spectroscopy of biomolecules: concepts, simulations, and challenges. *Angewandte Chemie - International Edition*, **2009**, 48, 3750-81	16.4	138
664	Collective solvent coordinates for the infrared spectrum of HOD in D2O based on an ab initio electrostatic map. *Journal of Physical Chemistry A*, **2005**, 109, 64-82	2.8	136
663	Collisional broadening of spectral line shapes in two-photon and multiphoton processes. *Physics Reports*, **1982**, 93, 1-60	27.7	136
662	Vibrational relaxation in jet-cooled alkyl benzenes. II. Fluorescence spectra. *Journal of Chemical Physics*, **1980**, 72, 5049-5061	3.9	135
661	Multidimensional attosecond resonant X-ray spectroscopy of molecules: lessons from the optical regime. *Annual Review of Physical Chemistry*, **2013**, 64, 101-27	15.7	134
660	Photon echoes and related four-wave-mixing spectroscopies using phase-locked pulses. *Journal of Chemical Physics*, **1992**, 96, 5618-5629	3.9	134
659	Statistical reduction for strongly driven simple quantum systems. *Physical Review A*, **1978**, 17, 1988-1998	2.6	134
658	Coherent low-frequency motions of hydrogen bonded acetic acid dimers in the liquid phase. *Journal of Chemical Physics*, **2004**, 121, 902-13	3.9	130

657	Two-Dimensional Raman Echoes: Femtosecond View of Molecular Structure and Vibrational Coherence. *Accounts of Chemical Research*, **1999**, 32, 145-154	24.3	128
656	Simulation protocols for coherent femtosecond vibrational spectra of peptides. *Journal of Physical Chemistry B*, **2006**, 110, 3362-74	3.4	123
655	Non-markovian theory of molecular relaxation. I. Vibrational relaxation and dephasing in condensed phases. *Chemical Physics*, **1979**, 37, 33-47	2.3	122
654	Theory of vibrational overtone line shapes of polyatomic molecules. *Journal of Chemical Physics*, **1979**, 70, 463	3.9	121
653	Cooperative nonlinear optical response of molecular aggregates: Crossover to bulk behavior. *Physical Review Letters*, **1991**, 66, 1197-1200	7.4	120
652	Optical multidimensional coherent spectroscopy. *Physics Today*, **2013**, 66, 44-49	0.9	117
651	Tunneling versus sequential long-range electron transfer: Analogy with pump□probe spectroscopy. *Journal of Chemical Physics*, **1989**, 91, 6973-6988	3.9	117
650	Nonimpact unified theory of four-wave mixing and two-photon processes. *Physical Review A*, **1983**, 28, 3480-3492	2.6	117
649	Multidimensional femtosecond spectroscopies of molecular aggregates and semiconductor nanostructures: The nonlinear exciton equations. *Journal of Chemical Physics*, **1998**, 109, 9587-9601	3.9	116
648	Cavity Femtochemistry: Manipulating Nonadiabatic Dynamics at Avoided Crossings. *Journal of Physical Chemistry Letters*, **2016**, 7, 2050-4	6.4	116
647	Bacteriochlorophyll and Carotenoid Excitonic Couplings in the LH2 System of Purple Bacteria. *Journal of Physical Chemistry B*, **2000**, 104, 9540-9553	3.4	115
646	Intermolecular forces, spontaneous emission, and superradiance in a dielectric medium: Polariton-mediated interactions. *Physical Review A*, **1989**, 40, 7065-7080	2.6	115
645	A model for isotope separation via molecular multiphoton photodissociation. *Chemical Physics Letters*, **1976**, 40, 150-156	2.5	115
644	Molecular theory of solvation and dielectric response in polar fluids. *Journal of Chemical Physics*, **1987**, 87, 1272-1283	3.9	114
643	Two-Dimensional Real-Space Analysis of Optical Excitations in Acceptor-Substituted Carotenoids. *Journal of the American Chemical Society*, **1997**, 119, 11408-11419	16.4	110
642	Real-time path-integral approach to quantum coherence and dephasing in nonadiabatic transitions and nonlinear optical response. *Physical Review E*, **1993**, 47, 118-136	2.4	108
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640	Collective coordinates for nuclear spectral densities in energy transfer and femtosecond spectroscopy of molecular aggregates. *Journal of Chemical Physics*, **1996**, 105, 4565-4583	3.9	106

639	Raman excitation profiles of polyatomic molecules in condensed phases. A stochastic theory. *Journal of Chemical Physics*, **1986**, 85, 462-474	3.9	106
638	On the semiclassical calculation of molecular absorption and fluorescence spectra. *Journal of Chemical Physics*, **1982**, 77, 173-181	3.9	106
637	Oligophenylenevinylene Phane Dimers: Probing the Effect of Contact Site on the Optical Properties of Bichromophoric Pairs. *Journal of the American Chemical Society*, **2000**, 122, 1289-1297	16.4	105
636	Three-dimensional nonlinear optical chromophores based on through-space delocalization. *Journal of the American Chemical Society*, **2002**, 124, 13480-5	16.4	104
635	Exciton Delocalization in the B850 Light-Harvesting Complex: Comparison of Different Measures. *Journal of Physical Chemistry B*, **2001**, 105, 5515-5524	3.4	104
634	The origin of vibrational mode couplings in various secondary structural motifs of polypeptides. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 506-10	11.5	103
633	Solvent Reorganization in Long-Range Electron Transfer:Density Matrix Approach. *Journal of Physical Chemistry A*, **1998**, 102, 1241-1251	2.8	103
632	Classical chaos and fluctuation-dissipation relations for nonlinear response. *Physical Review E*, **1996**, 53, R1-R4	2.4	103
631	Radiative decay and energy transfer in molecular aggregates: The role of intermolecular dephasing. *Physical Review A*, **1988**, 37, 3835-3846	2.6	103
630	Exciton Hamiltonian for the Bacteriochlorophyll System in the LH2 Antenna Complex of Purple Bacteria. *Journal of Physical Chemistry B*, **2000**, 104, 4519-4528	3.4	102
629	Nonlinear optical response of conjugated polymers: Electron-hole anharmonic-oscillator picture. *Physical Review Letters*, **1992**, 69, 65-68	7.4	101
628	Two-quantum many-body coherences in two-dimensional fourier-transform spectra of exciton resonances in semiconductor quantum wells. *Physical Review Letters*, **2010**, 104, 117401	7.4	96
627	Signatures of beta-peptide unfolding in two-dimensional vibrational echo spectroscopy: a simulation study. *Journal of the American Chemical Society*, **2001**, 123, 3114-24	16.4	95
626	Femtosecond photon echoes in molecular aggregates. *Journal of Chemical Physics*, **1997**, 107, 8759-8780	3.9	94
625	Two-dimensional electronic double-quantum coherence spectroscopy. *Accounts of Chemical Research*, **2009**, 42, 1375-84	24.3	93
624	Solvation structure and the time-resolved Stokes shift in non-Debye solvents. *Journal of Chemical Physics*, **1990**, 93, 932-946	3.9	93
623	Cooperative radiative dynamics in molecular aggregates. *Journal of Chemical Physics*, **1991**, 94, 7534-7544	3.9	91
622	Lindblad equations for strongly coupled populations and coherences in photosynthetic complexes. *Journal of Chemical Physics*, **2009**, 130, 204512	3.9	89

621	Excitonic couplings and electronic coherence in bridged naphthalene dimers. *Proceedings of the National Academy of Sciences of the United States of America*, **1999**, 96, 13003-8	11.5	89
620	Anharmonic oscillator modeling of nonlinear susceptibilities and its application to conjugated polymers. *Journal of Chemical Physics*, **1994**, 100, 2366-2384	3.9	89
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618	Interrogation of Vibrational Structure and Line Broadening of Liquid Water by Raman-Induced Kerr Effect Measurements within the Multimode Brownian Oscillator Model *The Journal of Physical Chemistry*, **1996**, 100, 10380-10388		88
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616	Non-adiabatic dynamics of molecules in optical cavities. *Journal of Chemical Physics*, **2016**, 144, 054309	3.9	88
615	Catching Conical Intersections in the Act: Monitoring Transient Electronic Coherences by Attosecond Stimulated X-Ray Raman Signals. *Physical Review Letters*, **2015**, 115, 193003	7.4	87
614	Electronic coherence and nonlinear susceptibilities of conjugated polyenes. *Science*, **1994**, 266, 250-4	33.3	87
613	Reaction Dynamics of a Photochromic Fluorescing Dithienylethene. *Journal of Physical Chemistry A*, **2001**, 105, 1741-1749	2.8	85
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609	Superexchange versus sequential long range electron transfer; density matrix pathways in Liouville space. *Chemical Physics*, **1995**, 197, 367-388	2.3	84
608	Design strategies for pulse sequences in multidimensional optical spectroscopies. *Journal of Chemical Physics*, **2001**, 115, 4989-5004	3.9	83
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605	Probing intermolecular couplings in liquid water with two-dimensional infrared photon echo spectroscopy. *Journal of Chemical Physics*, **2008**, 128, 191103	3.9	82
604	Impulsive pump-probe and photon-echo spectroscopies of dye molecules in condensed phases. *Physical Review A*, **1990**, 42, 6920-6923	2.6	82

603	Optical Stark Spectroscopy of a Brownian Oscillator in Intense Fields. *Journal of the Physical Society of Japan*, **1994**, 63, 66-77	1.5	81
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598	UV-Light-Induced Vibrational Coherences: The Key to Understand Kasha Rule Violation in trans-Azobenzene. *Journal of Physical Chemistry Letters*, **2018**, 9, 1534-1541	6.4	76
597	Vibrational-exciton couplings for the amide I, II, III, and A modes of peptides. *Journal of Physical Chemistry B*, **2007**, 111, 11032-46	3.4	76
596	Superoperator nonequilibrium Green function theory of many-body systems; applications to charge transfer and transport in open junctions. *Physics Reports*, **2008**, 465, 191-222	27.7	75
595	Krylov-space algorithms for time-dependent Hartree Fock and density functional computations. *Journal of Chemical Physics*, **2000**, 113, 36-43	3.9	74
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593	Nonlinear response of vibrational excitons: simulating the two-dimensional infrared spectrum of liquid water. *Journal of Chemical Physics*, **2009**, 130, 204110	3.9	73
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572	Transient gratings, four-wave mixing and polariton effects in nonlinear optics. *Physics Reports*, **1991**, 205, 1-58	27.7	63
571	Dielectric friction and the transition from adiabatic to nonadiabatic electron transfer in condensed phases. II. Application to non-Debye solvents. *Journal of Chemical Physics*, **1988**, 88, 4300-4311	3.9	63
570	Collisional perturbations of time-resolved photon scattering from molecular levels. *Physical Review A*, **1975**, 12, 947-958	2.6	63
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561	Probing valence electronic wave-packet dynamics by all x-ray stimulated Raman spectroscopy: A simulation study. *Physical Review A*, **2007**, 76,	2.6	59
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