

Frank C Spano

List of Publications by Year in descending order

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107
papers

13,192
citations

29994

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29081

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docs citations

113
times ranked

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citing authors

#	ARTICLE	IF	CITATIONS
1	A Holstein–Peierls Approach to Excimer Spectra: The Evolution from Vibronically Structured to Unstructured Emission. <i>Journal of Physical Chemistry C</i> , 2022, 126, 4067-4081.	1.5	20
2	Quantifying Polaron Mole Fractions and Interpreting Spectral Changes in Molecularly Doped Conjugated Polymers. <i>Advanced Electronic Materials</i> , 2022, 8, .	2.6	7
3	Correction to “Confirmation of the Origins of Panchromatic Spectra in Squaraine Thin Films Targeted for Organic Photovoltaic Devices”. <i>Journal of Physical Chemistry C</i> , 2022, 126, 11436-11437.	1.5	0
4	An Efficient Narrowband Near-Infrared at 1040 nm Organic Photodetector Realized by Intermolecular Charge Transfer Mediated Coupling Based on a Squaraine Dye. <i>Advanced Materials</i> , 2021, 33, e2100582.	11.1	88
5	HJ-aggregates of donor–acceptor oligomers and polymers. <i>Journal of Chemical Physics</i> , 2021, 155, 034905.	1.2	19
6	Unusual Non-Kasha Photophysical Behavior of Aggregates of Push–Pull Donor–Acceptor Chromophores. <i>Journal of Physical Chemistry C</i> , 2020, 124, 2146-2159.	1.5	22
7	Excitons and Polarons in Organic Materials. <i>Accounts of Chemical Research</i> , 2020, 53, 2201-2211.	7.6	63
8	A Thermostable Protein Matrix for Spectroscopic Analysis of Organic Semiconductors. <i>Journal of the American Chemical Society</i> , 2020, 142, 13898-13907.	6.6	3
9	Vibronic exciton model for low bandgap donor–acceptor polymers. <i>Journal of Chemical Physics</i> , 2020, 153, 244901.	1.2	19
10	Exciton–phonon polaritons in organic microcavities: Testing a simple ansatz for treating a large number of chromophores. <i>Journal of Chemical Physics</i> , 2020, 152, 204113.	1.2	15
11	Measurement and Theoretical Interpretation of Exciton Diffusion as a Function of Intermolecular Separation for Squaraines Targeted for Bulk Heterojunction Solar Cells. <i>Journal of Physical Chemistry C</i> , 2020, 124, 4032-4043.	1.5	14
12	Frenkel–Holstein Hamiltonian applied to absorption spectra of quaterthiophene-based 2D hybrid organic–inorganic perovskites. <i>Journal of Chemical Physics</i> , 2020, 152, 144702.	1.2	8
13	Perylene Diimide-Based H _j - and h _j -Aggregates: The Prospect of Exciton Band Shape Engineering in Organic Materials. <i>Journal of Physical Chemistry C</i> , 2019, 123, 20567-20578.	1.5	91
14	Anisotropic Polaron Delocalization in Conjugated Homopolymers and Donor–Acceptor Copolymers. <i>Chemistry of Materials</i> , 2019, 31, 7033-7045.	3.2	39
15	Essential States Model for Merocyanine Dye Stacks: Bridging Electronic and Optical Absorption Properties. <i>Journal of Physical Chemistry C</i> , 2019, 123, 18654-18664.	1.5	21
16	Davydov Splitting in Squaraine Dimers. <i>Journal of Physical Chemistry C</i> , 2019, 123, 18734-18745.	1.5	41
17	Non-Kasha Behavior in Quadrupolar Dye Aggregates: The Red-Shifted H-Aggregate. <i>Journal of Physical Chemistry C</i> , 2019, 123, 3203-3215.	1.5	56
18	Correction to “Non-Kasha Behavior in Quadrupolar Dye Aggregates: The Red-Shifted H-Aggregate”. <i>Journal of Physical Chemistry C</i> , 2019, 123, 30765-30765.	1.5	0

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19	Robust singlet fission in pentacene thin films with tuned charge transfer interactions. <i>Nature Communications</i> , 2018, 9, 954.	5.8	76
20	Expanded Theory of H- and J-Molecular Aggregates: The Effects of Vibronic Coupling and Intermolecular Charge Transfer. <i>Chemical Reviews</i> , 2018, 118, 7069-7163.	23.0	1,033
21	Theory of Nanoscale Organic Cavities: The Essential Role of Vibration-Photon Dressed States. <i>ACS Photonics</i> , 2018, 5, 65-79.	3.2	88
22	Spectral Signatures and Spatial Coherence of Bound and Unbound Polarons in P3HT Films: Theory Versus Experiment. <i>Journal of Physical Chemistry C</i> , 2018, 122, 18048-18060.	1.5	70
23	Unraveling the Effect of Conformational and Electronic Disorder in the Charge Transport Processes of Semiconducting Polymers. <i>Advanced Functional Materials</i> , 2018, 28, 1804142.	7.8	34
24	Molecular Aggregate Photophysics beyond the Kasha Model: Novel Design Principles for Organic Materials. <i>Accounts of Chemical Research</i> , 2017, 50, 341-350.	7.6	441
25	Enhanced Davydov Splitting in Crystals of a Perylene Diimide Derivative. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 1118-1123.	2.1	37
26	Using coherence to enhance function in chemical and biophysical systems. <i>Nature</i> , 2017, 543, 647-656.	13.7	477
27	Sequential Doping Reveals the Importance of Amorphous Chain Rigidity in Charge Transport of Semi-Crystalline Polymers. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 4974-4980.	2.1	72
28	The Effects of Crystallinity on Charge Transport and the Structure of Sequentially Processed F ₄ TCNQ-Doped Conjugated Polymer Films. <i>Advanced Functional Materials</i> , 2017, 27, 1702654.	7.8	190
29	Absorption and photoluminescence in organic cavity QED. <i>Physical Review A</i> , 2017, 95, .	1.0	84
30	Dark Vibronic Polaritons and the Spectroscopy of Organic Microcavities. <i>Physical Review Letters</i> , 2017, 118, 223601.	2.9	96
31	Polaron Delocalization in Conjugated Polymer Films. <i>Journal of Physical Chemistry C</i> , 2016, 120, 11394-11406.	1.5	79
32	Photophysical Properties of Molecular Aggregates. <i>Materials and Energy</i> , 2016, , 93-130.	2.5	6
33	Extended-Charge-Transfer Excitons in Crystalline Supramolecular Photocatalytic Scaffolds. <i>Journal of the American Chemical Society</i> , 2016, 138, 11762-11774.	6.6	91
34	Cavity-Controlled Chemistry in Molecular Ensembles. <i>Physical Review Letters</i> , 2016, 116, 238301.	2.9	406
35	Determining the spatial coherence of excitons from the photoluminescence spectrum in charge-transfer J-aggregates. <i>Chemical Physics</i> , 2016, 481, 262-271.	0.9	14
36	Phase separation, crystallinity and monomer-aggregate population control in solution processed small molecule solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2016, 157, 366-376.	3.0	22

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37	Exciton mobility control through packing modifications in molecular crystals. <i>Physical Review B</i> , 2015, 91, .	1.1	51
38	Interference between Coulombic and CT-mediated couplings in molecular aggregates: H- to J-aggregate transformation in perylene-based π -stacks. <i>Journal of Chemical Physics</i> , 2015, 143, 244707.	1.2	137
39	Confirmation of the Origins of Panchromatic Spectra in Squaraine Thin Films Targeted for Organic Photovoltaic Devices. <i>Journal of Physical Chemistry C</i> , 2015, 119, 18964-18974.	1.5	59
40	Polarized Absorption in Crystalline Pentacene: Theory vs Experiment. <i>Journal of Physical Chemistry C</i> , 2015, 119, 22137-22147.	1.5	98
41	Optical microcavities enhance the exciton coherence length and eliminate vibronic coupling in J-aggregates. <i>Journal of Chemical Physics</i> , 2015, 142, 184707.	1.2	104
42	Two-dimensional polaron coherence in Poly(3-hexylthiophene). <i>Proceedings of SPIE</i> , 2014, , .	0.8	0
43	New insights on the nature of two-dimensional polarons in semiconducting polymers: Infrared absorption in poly(3-hexylthiophene). <i>Journal of Chemical Physics</i> , 2014, 140, 244902.	1.2	38
44	HJ-Aggregate Behavior of Crystalline 7,8,15,16-Tetraazaterrylene: Introducing a New Design Paradigm for Organic Materials. <i>Journal of Physical Chemistry C</i> , 2014, 118, 28842-28854.	1.5	105
45	H- and J-Aggregate Behavior in Polymeric Semiconductors. <i>Annual Review of Physical Chemistry</i> , 2014, 65, 477-500.	4.8	834
46	Strong Photophysical Similarities between Conjugated Polymers and J-aggregates. <i>Journal of Physical Chemistry Letters</i> , 2014, 5, 622-632.	2.1	68
47	The Effect of Chain Bending on the Photophysical Properties of Conjugated Polymers. <i>Journal of Physical Chemistry B</i> , 2014, 118, 8352-8363.	1.2	51
48	Mapping the Evolution of Spatial Exciton Coherence through Time-Resolved Fluorescence. <i>Journal of Physical Chemistry Letters</i> , 2014, 5, 1505-1510.	2.1	47
49	Two-dimensional spatial coherence of excitons in semicrystalline polymeric semiconductors: Effect of molecular weight. <i>Physical Review B</i> , 2013, 88, .	1.1	96
50	Anatomy of an Exciton: Vibrational Distortion and Exciton Coherence in H- and J-Aggregates. <i>Journal of Physical Chemistry B</i> , 2013, 117, 457-466.	1.2	28
51	Contrasting Photophysical Properties of Star-Shaped vs Linear Perylene Diimide Complexes. <i>Journal of the American Chemical Society</i> , 2013, 135, 3056-3066.	6.6	31
52	Charge-Transfer Excitations Steer the Davydov Splitting and Mediate Singlet Exciton Fission in Pentacene. <i>Physical Review Letters</i> , 2013, 110, 226402.	2.9	253
53	The red-phase of poly[2-methoxy-5-(2-ethylhexyloxy)-1,4-phenylenevinylene] (MEH-PPV): A disordered HJ-aggregate. <i>Journal of Chemical Physics</i> , 2013, 139, 114903.	1.2	58
54	Designing J- and H-Aggregates through Wave Function Overlap Engineering: Applications to Poly(3-hexylthiophene). <i>Journal of Physical Chemistry B</i> , 2012, 116, 14494-14503.	1.2	108

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55	J-Aggregate Behavior in Poly-3-hexylthiophene Nanofibers. <i>Journal of Physical Chemistry Letters</i> , 2012, 3, 259-263.	2.1	258
56	Absorption, Circular Dichroism, and Photoluminescence in Perylene Diimide Bichromophores: Polarization-Dependent H- and J-Aggregate Behavior. <i>Journal of Physical Chemistry B</i> , 2012, 116, 77-86.	1.2	113
57	VIBRONIC COUPLING IN J-AGGREGATES. , 2012, , 49-75.		3
58	Interplay between intrachain and interchain interactions in semiconducting polymer assemblies: The HJ-aggregate model. <i>Journal of Chemical Physics</i> , 2012, 136, 184901.	1.2	234
59	Theory of exciton dynamics in molecular aggregates in presence of polaronic effects. <i>Chemical Physics Letters</i> , 2012, 529, 69-73.	1.2	7
60	The nature of singlet excitons in oligoacene molecular crystals. <i>Journal of Chemical Physics</i> , 2011, 134, 204703.	1.2	233
61	Vibronic Coupling in J-Aggregates and Beyond: A Direct Means of Determining the Exciton Coherence Length from the Photoluminescence Spectrum. <i>Journal of Physical Chemistry B</i> , 2011, 115, 5133-5143.	1.2	186
62	Circularly Polarized Luminescence as a Probe for Long-Range Interactions in Molecular Aggregates. <i>Journal of Physical Chemistry B</i> , 2011, 115, 10592-10603.	1.2	82
63	Vibronic coupling in quantum wires: Applications to polydiacetylene. <i>Journal of Chemical Physics</i> , 2011, 135, 054906.	1.2	54
64	The Spectral Signatures of Frenkel Polarons in H- and J-Aggregates. <i>Accounts of Chemical Research</i> , 2010, 43, 429-439.	7.6	1,336
65	Multiple mode exciton-vibrational coupling in H-aggregates: Synergistic enhancement of the quantum yield. <i>Journal of Chemical Physics</i> , 2010, 132, 094704.	1.2	36
66	Extreme Sensitivity of Circular Dichroism to Long-Range Excitonic Couplings in Helical Supramolecular Assemblies. <i>Journal of Physical Chemistry B</i> , 2010, 114, 817-825.	1.2	28
67	Determining exciton bandwidth and film microstructure in polythiophene films using linear absorption spectroscopy. <i>Applied Physics Letters</i> , 2009, 94, .	1.5	492
68	Determining exciton coherence from the photoluminescence spectral line shape in poly(3-hexylthiophene) thin films. <i>Journal of Chemical Physics</i> , 2009, 130, 074904.	1.2	241
69	Exciton-phonon coupling in molecular crystals: Synergy between two intramolecular vibrational modes in quaterthiophene single crystals. <i>Journal of Chemical Physics</i> , 2009, 130, 234701.	1.2	19
70	Helterkelter Like Perylene Polyisocyanopeptides. <i>Chemistry - A European Journal</i> , 2009, 15, 2536-2547.	1.7	64
71	Optical Spectra and Stokes Shift in Double-Stranded Helical Supramolecular Assemblies. <i>Journal of Physical Chemistry B</i> , 2009, 113, 9708-9717.	1.2	12
72	Analysis of the UV/Vis and CD Spectral Line Shapes of Carotenoid Assemblies: Spectral Signatures of Chiral H-Aggregates. <i>Journal of the American Chemical Society</i> , 2009, 131, 4267-4278.	6.6	117

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73	Using circularly polarized luminescence to probe exciton coherence in disordered helical aggregates. <i>Journal of Chemical Physics</i> , 2008, 129, 024704.	1.2	24
74	Experimental and theoretical study of temperature dependent exciton delocalization and relaxation in anthracene thin films. <i>Journal of Chemical Physics</i> , 2008, 128, 054505.	1.2	88
75	Role of Intermolecular Coupling in the Photophysics of Disordered Organic Semiconductors: Aggregate Emission in Regioregular Polythiophene. <i>Physical Review Letters</i> , 2007, 98, 206406.	2.9	816
76	Multiple Mode Exciton-Phonon Coupling: Applications to Photoluminescence in Oligothiophene Thin Films. <i>Journal of Physical Chemistry C</i> , 2007, 111, 6113-6123.	1.5	35
77	Reclassifying exciton-phonon coupling in molecular aggregates: Evidence of strong nonadiabatic coupling in oligothiophene crystals. <i>Journal of Chemical Physics</i> , 2007, 127, 184703.	1.2	46
78	Probing Excitation Delocalization in Supramolecular Chiral Stacks by Means of Circularly Polarized Light: Experiment and Modeling. <i>Journal of the American Chemical Society</i> , 2007, 129, 7044-7054.	6.6	112
79	EXCITONS IN CONJUGATED OLIGOMER AGGREGATES, FILMS, AND CRYSTALS. <i>Annual Review of Physical Chemistry</i> , 2006, 57, 217-243.	4.8	304
80	Absorption in regio-regular poly(3-hexyl)thiophene thin films: Fermi resonances, interband coupling and disorder. <i>Chemical Physics</i> , 2006, 325, 22-35.	0.9	195
81	Temperature-dependent emission in disordered herringbone aggregates: stacking faults and point defects. <i>Journal of Luminescence</i> , 2005, 112, 395-401.	1.5	6
82	Designing molecular eigenstates in a four-level system. <i>Physical Review A</i> , 2005, 71, .	1.0	6
83	Vibronic fine structure in the absorption spectrum of oligothiophene thin films. <i>Journal of Chemical Physics</i> , 2005, 122, 114701.	1.2	53
84	Modeling disorder in polymer aggregates: The optical spectroscopy of regioregular poly(3-hexylthiophene) thin films. <i>Journal of Chemical Physics</i> , 2005, 122, 234701.	1.2	545
85	Temperature-dependent emission in disordered herringbone aggregates of conjugated oligomers. <i>Physical Review B</i> , 2005, 71, .	1.1	22
86	Temperature dependent exciton emission from herringbone aggregates of conjugated oligomers. <i>Journal of Chemical Physics</i> , 2004, 120, 7643-7658.	1.2	59
87	Analysis of the vibronic fine structure in circularly polarized emission spectra from chiral molecular aggregates. <i>Journal of Chemical Physics</i> , 2004, 120, 10594-10604.	1.2	38
88	Exciton Delocalization and Superradiance in Tetracene Thin Films and Nanoaggregates. <i>Physical Review Letters</i> , 2004, 92, 107402.	2.9	228
89	The fundamental photophysics of conjugated oligomer herringbone aggregates. <i>Journal of Chemical Physics</i> , 2003, 118, 981-994.	1.2	110
90	Absorption and emission in oligo-phenylene vinylene nanoaggregates: The role of disorder and structural defects. <i>Journal of Chemical Physics</i> , 2002, 116, 5877-5891.	1.2	160

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91	Prospects for All-Optical Alignment and Quantum State Control of Nonpolar Molecules. ACS Symposium Series, 2002, , 304-319.	0.5	0
92	Absorption and emission in pinwheel aggregates of oligo-phenylene vinylene molecules. Journal of Chemical Physics, 2001, 114, 5376-5390.	1.2	52
93	Emission from aggregates of oligo-phenylene vinylenes: a recipe for superradiant H-aggregates. Chemical Physics Letters, 2000, 331, 7-13.	1.2	63
94	Autler-Townes Splitting in Molecular Lithium: Prospects for All-Optical Alignment of Nonpolar Molecules. Physical Review Letters, 1999, 83, 288-291.	2.9	104
95	Absorption and spontaneous emission in aggregates of conjugated polymers. Journal of Chemical Physics, 1998, 109, 8087-8101.	1.2	84
96	Spontaneous emission and absorption in model aggregates of π -conjugated oligomers. Journal of Chemical Physics, 1997, 107, 8152-8164.	1.2	32
97	Radiative Decay of Excitons in Model Aggregates of π -Conjugated Oligomers. Materials Research Society Symposia Proceedings, 1997, 488, 277.	0.1	1
98	Theory of Pump-Probe Spectroscopy of Molecular π -Aggregates. , 1996, , 111-160.		23
99	Frenkel Biexcitons in 1D J-aggregates. Materials Research Society Symposia Proceedings, 1995, 413, 257.	0.1	0
100	Theory of coherent transient spectroscopy in molecular aggregates: The effects of interacting excitons. Journal of Chemical Physics, 1995, 103, 5939-5955.	1.2	27
101	Unusual Behavior of Two-Photon Absorption from Three-Level Molecules in a One-Dimensional Lattice. Physical Review Letters, 1995, 74, 2780-2783.	2.9	47
102	Nonlinear optical response of one-dimensional molecular crystals: Breakdown of the local field approximation. Journal of Chemical Physics, 1992, 96, 8109-8116.	1.2	20
103	WEAK FIELD NONLINEAR OPTICAL RESPONSE OF FERMIONS IN FRENKEL EXCITON CHAINS. International Journal of Modern Physics B, 1992, 06, 3441-3467.	1.0	1
104	Reply to the Comment on: Is multiple quantum nuclear magnetic resonance of water real?. Journal of Chemical Physics, 1992, 96, 1659-1661.	1.2	38
105	Coherence Domains in the Radiative Dynamics of Molecular Aggregates. Molecular Crystals and Liquid Crystals, 1991, 194, 331-336.	0.7	9
106	Superradiance in molecular aggregates. Journal of Chemical Physics, 1989, 91, 683-700.	1.2	260
107	Understanding Bipolarons in Conjugated Polymers Using a Multiparticle Holstein Approach. Journal of Physical Chemistry C, 0, , .	1.5	14