

Feng Gai

List of Publications by Year in descending order

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77
papers

3,449
citations

147801

31
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138484

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79
all docs

79
docs citations

79
times ranked

2703
citing authors

#	ARTICLE	IF	CITATIONS
1	Using Nitrile-Derivatized Amino Acids as Infrared Probes of Local Environment. <i>Journal of the American Chemical Society</i> , 2003, 125, 405-411.	13.7	318
2	Helix formation via conformation diffusion search. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002, 99, 2788-2793.	7.1	212
3	Microscopic insights into the protein-stabilizing effect of trimethylamine N-oxide (TMAO). <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 8476-8481.	7.1	209
4	Infrared Studies of Fast Events in Protein Folding. <i>Accounts of Chemical Research</i> , 1998, 31, 709-716.	15.6	194
5	Site-Specific Infrared Probes of Proteins. <i>Annual Review of Physical Chemistry</i> , 2015, 66, 357-377.	10.8	151
6	Site-Specific Spectroscopic Reporters of the Local Electric Field, Hydration, Structure, and Dynamics of Biomolecules. <i>Journal of Physical Chemistry Letters</i> , 2011, 2, 2598-2609.	4.6	145
7	Temperature-Dependent Helix \rightarrow Coil Transition of an Alanine Based Peptide. <i>Journal of the American Chemical Society</i> , 2001, 123, 9235-9238.	13.7	138
8	Time-Resolved Infrared Study of the Helix \rightarrow Coil Transition Using ^{13}C -Labeled Helical Peptides. <i>Journal of the American Chemical Society</i> , 2001, 123, 12111-12112.	13.7	106
9	A New Method for Determining the Local Environment and Orientation of Individual Side Chains of Membrane-Binding Peptides. <i>Journal of the American Chemical Society</i> , 2004, 126, 5078-5079.	13.7	101
10	Blue fluorescent amino acid for biological spectroscopy and microscopy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 6005-6009.	7.1	100
11	Understanding the Mechanism of β^2 -Hairpin Folding via β -Value Analysis. <i>Biochemistry</i> , 2006, 45, 2668-2678.	2.5	95
12	5-Cyanotryptophan as an infrared probe of local hydration status of proteins. <i>Chemical Physics Letters</i> , 2009, 478, 249-253.	2.6	94
13	The Two-Dimensional Vibrational Echo of a Nitrile Probe of the Villin HP35 Protein. <i>Journal of Physical Chemistry Letters</i> , 2010, 1, 3311-3315.	4.6	83
14	Temperature dependence of the CN stretching vibration of a nitrile-derivatized phenylalanine in water. <i>Chemical Physics Letters</i> , 2003, 371, 731-738.	2.6	69
15	Spectroscopic studies of protein folding: Linear and nonlinear methods. <i>Protein Science</i> , 2012, 21, 157-170.	7.6	69
16	A 31-residue peptide induces aggregation of tau's microtubule-binding region in cells. <i>Nature Chemistry</i> , 2017, 9, 874-881.	13.6	67
17	Length Dependent Helix \rightarrow Coil Transition Kinetics of Nine Alanine-Based Peptides. <i>Journal of Physical Chemistry B</i> , 2004, 108, 15301-15310.	2.6	66
18	Probing the Folding Transition State Structure of the Villin Headpiece Subdomain via Side Chain and Backbone Mutagenesis. <i>Journal of the American Chemical Society</i> , 2009, 131, 7470-7476.	13.7	64

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19	A novel fluorescent probe for protein binding and folding studies:p-cyano-phenylalanine. <i>Biopolymers</i> , 2006, 83, 571-576.	2.4	63
20	Ester Carbonyl Vibration as a Sensitive Probe of Protein Local Electric Field. <i>Angewandte Chemie - International Edition</i> , 2014, 53, 6080-6084.	13.8	60
21	C α ,N stretching vibration of 5-cyanotryptophan as an infrared probe of protein local environment: what determines its frequency?. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 7027-7034.	2.8	57
22	Folding of A Three-Helix Bundle at the Folding Speed Limit. <i>Journal of Physical Chemistry B</i> , 2004, 108, 3694-3697.	2.6	54
23	Guiding the search for a protein's maximum rate of folding. <i>Chemical Physics</i> , 2004, 307, 99-109.	1.9	52
24	Solute α 's Perspective on How Trimethylamine Oxide, Urea, and Guanidine Hydrochloride Affect Water α 's Hydrogen Bonding Ability. <i>Journal of Physical Chemistry B</i> , 2012, 116, 12473-12478.	2.6	45
25	Utility of 5-Cyanotryptophan Fluorescence as a Sensitive Probe of Protein Hydration. <i>Journal of Physical Chemistry B</i> , 2016, 120, 936-944.	2.6	45
26	Solvent dependence of cyanoindole fluorescence lifetime. <i>Chemical Physics Letters</i> , 2017, 685, 133-138.	2.6	42
27	Fermi resonance as a means to determine the hydrogen-bonding status of two infrared probes. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 16144-16150.	2.8	37
28	Helix α 's coil kinetics of two 14-residue peptides. <i>Chemical Physics Letters</i> , 2003, 370, 842-848.	2.6	36
29	Computational Modeling of the Nitrile Stretching Vibration of 5-Cyanoindole in Water. <i>Journal of Physical Chemistry Letters</i> , 2010, 1, 781-786.	4.6	36
30	Understanding the Folding Mechanism of an α -Helical Hairpin α . <i>Biochemistry</i> , 2006, 45, 13131-13139.	2.5	32
31	Direct Assessment of the α -Helix Nucleation Time. <i>Journal of Physical Chemistry B</i> , 2011, 115, 7472-7478.	2.6	31
32	Light-Triggered Disassembly of Amyloid Fibrils. <i>Langmuir</i> , 2012, 28, 12588-12592.	3.5	28
33	Native State Conformational Heterogeneity of HP35 Revealed by Time-Resolved FRET. <i>Journal of Physical Chemistry B</i> , 2012, 116, 10631-10638.	2.6	26
34	Biomolecular Crowding Arising from Small Molecules, Molecular Constraints, Surface Packing, and Nano-Confinement. <i>Journal of Physical Chemistry Letters</i> , 2015, 6, 2546-2553.	4.6	25
35	Infrared and Fluorescence Assessment of Protein Dynamics: From Folding to Function. <i>Journal of Physical Chemistry B</i> , 2016, 120, 5103-5113.	2.6	25
36	2D IR spectroscopy reveals the role of water in the binding of channel-blocking drugs to the influenza M2 channel. <i>Journal of Chemical Physics</i> , 2014, 140, 235105.	3.0	23

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37	Using VIPT-Jump to Distinguish Between Different Folding Mechanisms: Application to BBL and a Trpzip. <i>Journal of the American Chemical Society</i> , 2013, 135, 7668-7673.	13.7	22
38	Kinetics of Exchange between Zero-, One-, and Two-Hydrogen-Bonded States of Methyl and Ethyl Acetate in Methanol. <i>Journal of Physical Chemistry B</i> , 2015, 119, 4512-4520.	2.6	22
39	Do guanidinium and tetrapropylammonium ions specifically interact with aromatic amino acid side chains?. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 1003-1008.	7.1	22
40	Synthesis and application of the blue fluorescent amino acid l-4-cyanotryptophan to assess peptide-membrane interactions. <i>Chemical Communications</i> , 2019, 55, 5095-5098.	4.1	20
41	Infrared and fluorescence assessment of the hydration status of the tryptophan gate in the influenza A M2 proton channel. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 28939-28950.	2.8	19
42	PET and FRET utility of an amino acid pair: tryptophan and 4-cyanotryptophan. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 12843-12849.	2.8	19
43	The Effect of Charge-Charge Interactions on the Kinetics of α -Helix Formation. <i>Biophysical Journal</i> , 2007, 93, 4076-4082.	0.5	16
44	How Sensitive is the Amide I Vibration of the Polypeptide Backbone to Electric Fields?. <i>ChemPhysChem</i> , 2015, 16, 3595-3598.	2.1	16
45	p-Cyanophenylalanine and selenomethionine constitute a useful fluorophore-quencher pair for short distance measurements: application to polyproline peptides. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 7881-7887.	2.8	16
46	Meandering Down the Energy Landscape of Protein Folding: Are We There Yet?. <i>Biophysical Journal</i> , 2016, 110, 1924-1932.	0.5	16
47	7-Cyanoindole fluorescence as a local hydration reporter: application to probe the microheterogeneity of nine water-organic binary mixtures. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 2527-2535.	2.8	16
48	Exciton circular dichroism couplet arising from nitrile-derivatized aromatic residues as a structural probe of proteins. <i>Analytical Biochemistry</i> , 2016, 507, 74-78.	2.4	15
49	Using D-amino acids to delineate the mechanism of protein folding: Application to Trp-cage. <i>Chemical Physics</i> , 2013, 422, 131-134.	1.9	14
50	Design of a Short Thermally Stable α -Helix Embedded in a Macrocycle. <i>ChemBioChem</i> , 2018, 19, 902-906.	2.6	14
51	Possible Existence of β -Sheets in the Amyloid Fibrils Formed by a TTR ^{105A115} Mutant. <i>Journal of the American Chemical Society</i> , 2018, 140, 629-635.	13.7	14
52	Exposing the Nucleation Site in α -Helix Folding: A Joint Experimental and Simulation Study. <i>Journal of Physical Chemistry B</i> , 2019, 123, 1797-1807.	2.6	13
53	Ultrafast Hydrogen-Bonding Dynamics in Amyloid Fibrils. <i>Journal of Physical Chemistry B</i> , 2018, 122, 11023-11029.	2.6	12
54	Isotope-labeled aspartate sidechain as a non-perturbing infrared probe: Application to investigate the dynamics of a carboxylate buried inside a protein. <i>Chemical Physics Letters</i> , 2017, 683, 193-198.	2.6	11

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55	Microscopic Insight into the Protein Denaturation Action of Urea and Its Methyl Derivatives. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 2933-2940.	4.6	11
56	Tuning the electronic transition energy of indole via substitution: application to identify tryptophan-based chromophores that absorb and emit visible light. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 6433-6437.	2.8	11
57	Tryptophan as a Template for Development of Visible Fluorescent Amino Acids. <i>Journal of Physical Chemistry B</i> , 2021, 125, 5458-5465.	2.6	11
58	Sensing pH via p-cyanophenylalanine fluorescence: Application to determine peptide pKa and membrane penetration kinetics. <i>Analytical Biochemistry</i> , 2015, 483, 21-26.	2.4	10
59	Synthesis and characterization of the fluorescence utility of two Visible-Light-Absorbing tryptophan derivatives. <i>Chemical Physics Letters</i> , 2022, 795, 139553.	2.6	10
60	Can glycine betaine denature proteins?. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 7794-7802.	2.8	9
61	Tightening up the structure, lighting up the pathway: application of molecular constraints and light to manipulate protein folding, self-assembly and function. <i>Science China Chemistry</i> , 2014, 57, 1615-1624.	8.2	8
62	Simple method to introduce an ester infrared probe into proteins. <i>Protein Science</i> , 2017, 26, 375-381.	7.6	8
63	Activation pH and Gating Dynamics of Influenza A M2 Proton Channel Revealed by Single-Molecule Spectroscopy. <i>Angewandte Chemie - International Edition</i> , 2017, 56, 5283-5287.	13.8	7
64	4-Cyanoindole-2-deoxyribonucleoside as a Dual-Fluorescence and Infrared Probe of DNA Structure and Dynamics. <i>Molecules</i> , 2019, 24, 602.	3.8	7
65	A Scalable Synthesis of the Blue Fluorescent Amino Acid 4-Cyanotryptophan and the Fmoc Derivative: Utility Demonstrated with the Influenza M2 Peptide Tetramer. <i>Organic Letters</i> , 2021, 23, 1247-1250.	4.6	7
66	Assessing the Effect of Hofmeister Anions on the Hydrogen-Bonding Strength of Water via Nitrile Stretching Frequency Shift. <i>Journal of Physical Chemistry B</i> , 2020, 124, 11783-11792.	2.6	7
67	Infrared Temperature-Jump Study of the Folding Dynamics of α -Helices and β -Hairpins. , 2007, 350, 1-20.		6
68	Newfound effect of N-acetylaspartate in preventing and reversing aggregation of amyloid-beta in vitro. <i>Neurobiology of Disease</i> , 2018, 117, 161-169.	4.4	6
69	4-Cyanoindole-based fluorophores for biological spectroscopy and microscopy. <i>Methods in Enzymology</i> , 2020, 639, 191-215.	1.0	6
70	Kinetics of peptide folding in lipid membranes. <i>Biopolymers</i> , 2015, 104, 281-290.	2.4	5
71	Microscopic nucleation and propagation rates of an alanine-based α -helix. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 5028-5036.	2.8	4
72	New Challenges. , 2005, , 461-538.		2

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73	Visualization of Platelet Integrins via Two-Photon Microscopy Using Anti-transmembrane Domain Peptides Containing a Blue Fluorescent Amino Acid. <i>Biochemistry</i> , 2021, 60, 1722-1730.	2.5	2
74	4-Oxoproline as a Site-Specific Infrared Probe: Application To Assess Proline Isomerization and Dimer Formation. <i>Journal of Physical Chemistry B</i> , 2019, 123, 5079-5085.	2.6	1
75	Activation pH and Gating Dynamics of Influenza A M2 Proton Channel Revealed by Single-Molecule Spectroscopy. <i>Angewandte Chemie</i> , 2017, 129, 5367-5371.	2.0	0
76	Direct Visualization of Platelet Integrins Using ANTI-Transmembrane Domain Peptides Containing a BLUE Fluorescent Amino Acid. <i>Blood</i> , 2019, 134, 2344-2344.	1.4	0
77	Site-Specific Interrogation of Protein Structure and Stability. <i>Methods in Molecular Biology</i> , 2022, 2376, 65-87.	0.9	0