

Jim Pfaendtner

List of Publications by Year in Descending Order

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Version: 2024-04-27

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

119
papers

3,264
citations

31
h-index

52
g-index

139
ext. papers

3,866
ext. citations

5.4
avg, IF

5.92
L-index

#	Paper	IF	Citations
119	Membrane Structure of Aquaporin Observed with Combined Experimental and Theoretical Sum Frequency Generation Spectroscopy. <i>Langmuir</i> , 2021 , 37, 13452-13459	4	1
118	Substitution of distal and active site residues reduces product inhibition of E1 from <i>Acidothermus Cellulolyticus</i> . <i>Protein Engineering, Design and Selection</i> , 2021 , 34,	1.9	1
117	Direct Evidence for Aligned Binding of Cellulase Enzymes to Cellulose Surfaces. <i>Journal of Physical Chemistry Letters</i> , 2021 , 12, 10684-10688	6.4	0
116	Probing the thermodynamics and kinetics of ethylene carbonate reduction at the electrode-electrolyte interface with molecular simulations. <i>Journal of Chemical Physics</i> , 2021 , 155, 204703 ⁹	3.9	1
115	Analyzing the Long Time-Scale Dynamics of Uremic Toxins Bound to Sudlow Site II in Human Serum Albumin. <i>Journal of Physical Chemistry B</i> , 2021 , 125, 2910-2920	3.4	1
114	Ion-dependent protein-surface interactions from intrinsic solvent response. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118,	11.5	5
113	Data Science in Chemical Engineering: Applications to Molecular Science. <i>Annual Review of Chemical and Biomolecular Engineering</i> , 2021 , 12, 15-37	8.9	2
112	Formulation and Efficacy of Catalase-Loaded Nanoparticles for the Treatment of Neonatal Hypoxic-Ischemic Encephalopathy. <i>Pharmaceutics</i> , 2021 , 13,	6.4	3
111	Quantifying the Dynamics of Protein Self-Organization Using Deep Learning Analysis of Atomic Force Microscopy Data. <i>Nano Letters</i> , 2021 , 21, 158-165	11.5	7
110	Attention-based generative models for molecular design. <i>Chemical Science</i> , 2021 , 12, 8362-8372	9.4	6
109	Efficient Sampling of High-Dimensional Free Energy Landscapes: A Review of Parallel Bias Metadynamics. <i>Molecular Modeling and Simulation</i> , 2021 , 123-141		
108	Effect of Fluoroethylene Carbonate Additives on the Initial Formation of the Solid Electrolyte Interphase on an Oxygen-Functionalized Graphitic Anode in Lithium-Ion Batteries. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 8169-8180	9.5	6
107	Ice-nucleating proteins are activated by low temperatures to control the structure of interfacial water. <i>Nature Communications</i> , 2021 , 12, 1183	17.4	8
106	Deconstruction of high-density polyethylene into liquid hydrocarbon fuels and lubricants by hydrogenolysis over Ru catalyst. <i>Chem Catalysis</i> , 2021 , 1, 437-455		22
105	Effect of graphitic anode surface functionalization on the structure and dynamics of electrolytes at the interface. <i>Journal of Chemical Physics</i> , 2021 , 155, 134702	3.9	0
104	// Virtual Special Issue on Machine Learning in Physical Chemistry. <i>Journal of Physical Chemistry B</i> , 2020 , 124, 9767-9772	3.4	2
103	// Virtual Special Issue on Machine Learning in Physical Chemistry. <i>Journal of Physical Chemistry A</i> , 2020 , 124, 9113-9118	2.8	1

102	The Journal of Physical Chemistry A/B/C Virtual Special Issue on Machine Learning in Physical Chemistry. <i>Journal of Physical Chemistry C</i> , 2020 , 124, 24033-24038	3.8	1
101	Trimethylation of the R5 Silica-Precipitating Peptide Increases Silica Particle Size by Redirecting Orthosilicate Binding. <i>ChemBioChem</i> , 2020 , 21, 3208-3211	3.8	2
100	Sequence-Structure-Binding Relationships Reveal Adhesion Behavior of the Car9 Solid-Binding Peptide: An Integrated Experimental and Simulation Study. <i>Journal of the American Chemical Society</i> , 2020 , 142, 2355-2363	16.4	11
99	Elucidating the Molecular Interactions between Uremic Toxins and the Sudlow II Binding Site of Human Serum Albumin. <i>Journal of Physical Chemistry B</i> , 2020 , 124, 3922-3930	3.4	2
98	Elucidating Molecular Design Principles for Charge-Alternating Peptides. <i>Biomacromolecules</i> , 2020 , 21, 435-443	6.9	5
97	Impact of Glutamate Carboxylation in the Adsorption of the E1 Domain of Osteocalcin to Hydroxyapatite and Titania. <i>Molecular Systems Design and Engineering</i> , 2020 , 5, 620-631	4.6	4
96	Assessing the Performance of Various Stochastic Optimization Methods on Chemical Kinetic Modeling of Combustion. <i>Industrial & Engineering Chemistry Research</i> , 2020 , 59, 19212-19225	3.9	2
95	Enhanced Activity and Stability of <i>Acidothermus cellulolyticus</i> Endoglucanase 1 in Ionic Liquids via Engineering Active Site Residues and Non-Native Disulfide Bridges. <i>ACS Sustainable Chemistry and Engineering</i> , 2020 , 8, 11299-11307	8.3	8
94	Studies of Dynamic Binding of Amino Acids to TiO Nanoparticle Surfaces by Solution NMR and Molecular Dynamics Simulations. <i>Langmuir</i> , 2020 , 36, 10341-10350	4	7
93	MARTINI-Compatible Coarse-Grained Model for the Mesoscale Simulation of Peptoids. <i>Journal of Physical Chemistry B</i> , 2020 , 124, 7745-7764	3.4	10
92	Solvent oligomerization pathways facilitated by electrolyte additives during solid-electrolyte interphase formation. <i>Physical Chemistry Chemical Physics</i> , 2020 , 22, 21494-21503	3.6	7
91	Continuous Molecular Representations of Ionic Liquids. <i>Journal of Physical Chemistry B</i> , 2020 , 124, 8347-8357	3.5	8
90	Orientation and Conformation of Proteins at the Air-Water Interface Determined from Integrative Molecular Dynamics Simulations and Sum Frequency Generation Spectroscopy. <i>Langmuir</i> , 2020 , 36, 11855-11865	4	13
89	Closing the Gap Between Modeling and Experiments in the Self-Assembly of Biomolecules at Interfaces and in Solution. <i>Chemistry of Materials</i> , 2020 , 32, 8043-8059	9.6	4
88	Molecular recognition and specificity of biomolecules to titanium dioxide from molecular dynamics simulations. <i>Npj Computational Materials</i> , 2020 , 6,	10.9	3
87	Metadynamics to Enhance Sampling in Biomolecular Simulations. <i>Methods in Molecular Biology</i> , 2019 , 2022, 179-200	1.4	2
86	Amphiphilic peptide binding on crystalline vs. amorphous silica from molecular dynamics simulations. <i>Molecular Physics</i> , 2019 , 117, 3642-3650	1.7	4
85	Assessment of molecular dynamics simulations for amorphous poly(3-hexylthiophene) using neutron and X-ray scattering experiments. <i>Soft Matter</i> , 2019 , 15, 5067-5083	3.6	10

84	Trimethylamine -oxide-derived zwitterionic polymers: A new class of ultralow fouling bioinspired materials. <i>Science Advances</i> , 2019 , 5, eaaw9562	14.3	81
83	Diagnosing the Impact of External Electric Fields Chemical Kinetics: Application to Toluene Oxidation and Pyrolysis. <i>Journal of Physical Chemistry A</i> , 2019 , 123, 3080-3089	2.8	7
82	Generic Biphasic Catalytic Approach for Producing Renewable Diesel from Fatty Acids and Vegetable Oils. <i>ACS Catalysis</i> , 2019 , 9, 3753-3763	13.1	16
81	Molecular Driving Forces in Peptide Adsorption to Metal Oxide Surfaces. <i>Langmuir</i> , 2019 , 35, 5911-5920	4	18
80	Fantastic Liquids and Where To Find Them: Optimizations of Discrete Chemical Space. <i>Journal of Chemical Information and Modeling</i> , 2019 , 59, 2617-2625	6.1	5
79	Combining Molecular and Spin Dynamics Simulations with Solid-State NMR: A Case Study of Amphiphilic Lysine-Leucine Repeat Peptide Aggregates. <i>Journal of Physical Chemistry B</i> , 2019 , 123, 10913-10921	13.4	19
78	Solid-State NMR and MD Study of the Structure of the Statherin Mutant SNa15 on Mineral Surfaces. <i>Journal of the American Chemical Society</i> , 2019 , 141, 1998-2011	16.4	10
77	Lifting the Curse of Dimensionality on Enhanced Sampling of Reaction Networks with Parallel Bias Metadynamics. <i>Journal of Chemical Theory and Computation</i> , 2018 , 14, 2516-2525	6.4	16
76	Peptoid Backbone Flexibility Dictates Its Interaction with Water and Surfaces: A Molecular Dynamics Investigation. <i>Biomacromolecules</i> , 2018 , 19, 1006-1015	6.9	16
75	Statistical models are able to predict ionic liquid viscosity across a wide range of chemical functionalities and experimental conditions. <i>Molecular Systems Design and Engineering</i> , 2018 , 3, 253-263	4.6	22
74	Density functional tight-binding and infrequent metadynamics can capture entropic effects in intramolecular hydrogen transfer reactions. <i>Journal of Chemical Physics</i> , 2018 , 148, 154101	3.9	4
73	Design of Polyphosphate Inhibitors: A Molecular Dynamics Investigation on Polyethylene Glycol-Linked Cationic Binding Groups. <i>Biomacromolecules</i> , 2018 , 19, 1358-1367	6.9	7
72	Essential slow degrees of freedom in protein-surface simulations: A metadynamics investigation. <i>Biochemical and Biophysical Research Communications</i> , 2018 , 498, 274-281	3.4	22
71	Investigating the Role of Phosphorylation in the Binding of Silaffin Peptide R5 to Silica with Molecular Dynamics Simulations. <i>Langmuir</i> , 2018 , 34, 1199-1207	4	23
70	Biasing Smarter, Not Harder, by Partitioning Collective Variables into Families in Parallel Bias Metadynamics. <i>Journal of Chemical Theory and Computation</i> , 2018 , 14, 4985-4990	6.4	14
69	Inhibition of the Exoglucanase Cel7A by a Douglas-Fir-Condensed Tannin. <i>Journal of Physical Chemistry B</i> , 2018 , 122, 8665-8674	3.4	1
68	IL-Net: Using Expert Knowledge to Guide the Design of Furcated Neural Networks 2018 ,		3
67	Ice-binding site of surface-bound type III antifreeze protein partially decoupled from water. <i>Physical Chemistry Chemical Physics</i> , 2018 , 20, 26926-26933	3.6	14

66	Determining energy barriers and selectivities of a multi-pathway system with infrequent metadynamics. <i>Journal of Chemical Physics</i> , 2017 , 146, 014108	3.9	11
65	Acetylation dictates the morphology of nanophase biosilica precipitated by a 14-amino acid leucine-lysine peptide. <i>Journal of Peptide Science</i> , 2017 , 23, 141-147	2.1	9
64	Assessing Generic Collective Variables for Determining Reaction Rates in Metadynamics Simulations. <i>Journal of Chemical Theory and Computation</i> , 2017 , 13, 968-973	6.4	16
63	Application of machine learning to pyrolysis reaction networks: Reducing model solution time to enable process optimization. <i>Computers and Chemical Engineering</i> , 2017 , 104, 56-63	4	39
62	Effect of an ionic liquid/air Interface on the structure and dynamics of amphiphilic peptides. <i>Journal of Molecular Liquids</i> , 2017 , 236, 404-413	6	8
61	The Structure of the Diatom Silaffin Peptide R5 within Freestanding Two-Dimensional Biosilica Sheets. <i>Angewandte Chemie - International Edition</i> , 2017 , 56, 8277-8280	16.4	29
60	Thiolated Lysine-Leucine Peptides Self-Assemble into Biosilica Nucleation Pits on Gold Surfaces. <i>Advanced Materials Interfaces</i> , 2017 , 4, 1700399	4.6	1
59	Determining dominant driving forces affecting controlled protein release from polymeric nanoparticles. <i>Biointerphases</i> , 2017 , 12, 02D412	1.8	4
58	LK peptide side chain dynamics at interfaces are independent of secondary structure. <i>Physical Chemistry Chemical Physics</i> , 2017 , 19, 28507-28511	3.6	11
57	Redefining the Protein-Protein Interface: Coarse Graining and Combinatorics for an Improved Understanding of Amino Acid Contributions to the Protein-Protein Binding Affinity. <i>Langmuir</i> , 2017 , 33, 11511-11517	4	1
56	Quantifying the Molecular-Scale Aqueous Response to the Mica Surface. <i>Journal of Physical Chemistry C</i> , 2017 , 121, 18496-18504	3.8	14
55	Enhancing the Oxidation of Toluene with External Electric Fields: a Reactive Molecular Dynamics Study. <i>Scientific Reports</i> , 2017 , 7, 1710	4.9	13
54	Mechanism of Competitive Inhibition and Destabilization of <i>Acidothermus cellulolyticus</i> Endoglucanase 1 by Ionic Liquids. <i>Journal of Physical Chemistry B</i> , 2017 , 121, 10793-10803	3.4	19
53	Elucidating sequence and solvent specific design targets to protect and stabilize enzymes for biocatalysis in ionic liquids. <i>Physical Chemistry Chemical Physics</i> , 2017 , 19, 17426-17433	3.6	20
52	Detailed Kinetic Modeling of Lignin Pyrolysis for Process Optimization. <i>Industrial & Engineering Chemistry Research</i> , 2016 , 55, 9147-9153	3.9	31
51	Kinetics and mechanism of ionic-liquid induced protein unfolding: application to the model protein HP35. <i>Molecular Systems Design and Engineering</i> , 2016 , 1, 382-390	4.6	29
50	Destabilization of Human Serum Albumin by Ionic Liquids Studied Using Enhanced Molecular Dynamics Simulations. <i>Journal of Physical Chemistry B</i> , 2016 , 120, 12079-12087	3.4	21
49	Ice-nucleating bacteria control the order and dynamics of interfacial water. <i>Science Advances</i> , 2016 , 2, e1501630	14.3	128

48	Using Molecular Simulation to Study Biocatalysis in Ionic Liquids. <i>Methods in Enzymology</i> , 2016 , 577, 419-441		8
47	Millisecond Pulsed Films Unify the Mechanisms of Cellulose Fragmentation. <i>Chemistry of Materials</i> , 2016 , 28, 3108-3114	9.6	63
46	New Approach for Investigating Reaction Dynamics and Rates with Ab Initio Calculations. <i>Journal of Physical Chemistry A</i> , 2016 , 120, 299-305	2.8	37
45	Data science: Accelerating innovation and discovery in chemical engineering. <i>AIChE Journal</i> , 2016 , 62, 1402-1416	3.6	44
44	Strong Electrostatic Interactions Lead to Entropically Favorable Binding of Peptides to Charged Surfaces. <i>Langmuir</i> , 2016 , 32, 5690-701	4	31
43	Ultrafast Reorientational Dynamics of Leucine at the Air-Water Interface. <i>Journal of the American Chemical Society</i> , 2016 , 138, 5226-9	16.4	23
42	Lytic Polysaccharide Monooxygenases ScLPMO10B and ScLPMO10C Are Stable in Ionic Liquids As Determined by Molecular Simulations. <i>Journal of Physical Chemistry B</i> , 2016 , 120, 3863-72	3.4	15
41	Chain Flexibility in Self-Assembled Monolayers Affects Protein Adsorption and Surface Hydration: A Molecular Dynamics Study. <i>Journal of Physical Chemistry B</i> , 2016 , 120, 10423-10432	3.4	19
40	The general AMBER force field (GAFF) can accurately predict thermodynamic and transport properties of many ionic liquids. <i>Journal of Physical Chemistry B</i> , 2015 , 119, 5882-95	3.4	185
39	Molecular dynamics investigation of the ionic liquid/enzyme interface: application to engineering enzyme surface charge. <i>Proteins: Structure, Function and Bioinformatics</i> , 2015 , 83, 670-80	4.2	43
38	Structure Characterization and Properties of Metal-Surfactant Complexes Dispersed in Organic Solvents. <i>Langmuir</i> , 2015 , 31, 9006-16	4	10
37	Trp-Cage Folding on Organic Surfaces. <i>Journal of Physical Chemistry B</i> , 2015 , 119, 10417-25	3.4	24
36	Efficient Sampling of High-Dimensional Free-Energy Landscapes with Parallel Bias Metadynamics. <i>Journal of Chemical Theory and Computation</i> , 2015 , 11, 5062-7	6.4	112
35	Solvatochromism and conformational changes in fully dissolved poly(3-alkylthiophene)s. <i>Langmuir</i> , 2015 , 31, 458-68	4	24
34	Enhanced sampling of chemical and biochemical reactions with metadynamics. <i>Molecular Simulation</i> , 2015 , 41, 55-72	2	34
33	Folding and insertion thermodynamics of the transmembrane WALP peptide. <i>Journal of Chemical Physics</i> , 2015 , 143, 243127	3.9	29
32	Biomimetic Growth of Ultrathin Silica Sheets Using Artificial Amphiphilic Peptides. <i>Advanced Materials Interfaces</i> , 2015 , 2, 1500282	4.6	29
31	Effect of Hydrophobic and Hydrophilic Surfaces on the Stability of Double-Stranded DNA. <i>Biomacromolecules</i> , 2015 , 16, 1862-9	6.9	20

30	Comparison of three ionic liquid-tolerant cellulases by molecular dynamics. <i>Biophysical Journal</i> , 2015 , 108, 880-892	2.9	53
29	Fast Pyrolysis of Wood for Biofuels: Spatiotemporally Resolved Diffuse Reflectance In situ Spectroscopy of Particles. <i>ChemSusChem</i> , 2014 , 7, 765	8.3	34
28	Ionic Liquids Can Selectively Change the Conformational Free-Energy Landscape of Sugar Rings. <i>Journal of Chemical Theory and Computation</i> , 2014 , 10, 507-10	6.4	20
27	Diatom mimics: directing the formation of biosilica nanoparticles by controlled folding of lysine-leucine peptides. <i>Journal of the American Chemical Society</i> , 2014 , 136, 15134-7	16.4	50
26	CarParrinello Molecular Dynamics + Metadynamics Study of High-Temperature Methanol Oxidation Reactions Using Generic Collective Variables. <i>Journal of Physical Chemistry C</i> , 2014 , 118, 10764-10770	2.8	30
25	Structural effects of methionine oxidation on isolated subdomains of human fibrin D and E regions. <i>PLoS ONE</i> , 2014 , 9, e86981	3.7	28
24	Characterizing the catalyzed hydrolysis of 1,4 glycosidic bonds using density functional theory. <i>Journal of Physical Chemistry A</i> , 2013 , 117, 14200-8	2.8	19
23	Structure, dynamics, and activity of xylanase solvated in binary mixtures of ionic liquid and water. <i>ACS Chemical Biology</i> , 2013 , 8, 1179-86	4.9	77
22	Exhaustively sampling peptide adsorption with metadynamics. <i>Langmuir</i> , 2013 , 29, 7999-8009	4	93
21	Free energy of solvated salt bridges: a simulation and experimental study. <i>Journal of Physical Chemistry B</i> , 2013 , 117, 7254-9	3.4	30
20	Structural and dynamic features of <i>Candida rugosa</i> lipase 1 in water, octane, toluene, and ionic liquids BMIM-PF6 and BMIM-NO3. <i>Journal of Physical Chemistry B</i> , 2013 , 117, 2662-70	3.4	49
19	Coagulopathy In Trauma Patients Is Accompanied By Oxidation Of a Methionine Residue In The E Domain Of Fibrinogen and Abnormal Fibrin Polymerization. <i>Blood</i> , 2013 , 122, 1097-1097	2.2	
18	Efficient Simulation of Explicitly Solvated Proteins in the Well-Tempered Ensemble. <i>Journal of Chemical Theory and Computation</i> , 2012 , 8, 2189-92	6.4	94
17	Key structural features of the actin filament Arp2/3 complex branch junction revealed by molecular simulation. <i>Journal of Molecular Biology</i> , 2012 , 416, 148-61	6.5	25
16	Actin filament remodeling by actin depolymerization factor/cofilin. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010 , 107, 7299-304	11.5	81
15	Structure and dynamics of the actin filament. <i>Journal of Molecular Biology</i> , 2010 , 396, 252-63	6.5	74
14	Nucleotide-dependent conformational states of actin. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 12723-8	11.5	97
13	Defining coarse-grained representations of large biomolecules and biomolecular complexes from elastic network models. <i>Biophysical Journal</i> , 2009 , 97, 2327-37	2.9	70

12	Ab initio study of acrylate polymerization reactions: methyl methacrylate and methyl acrylate propagation. <i>Journal of Physical Chemistry A</i> , 2008 , 112, 6772-82	2.8	68
11	A systematic methodology for defining coarse-grained sites in large biomolecules. <i>Biophysical Journal</i> , 2008 , 95, 5073-83	2.9	124
10	Systematic multiscale parameterization of heterogeneous elastic network models of proteins. <i>Biophysical Journal</i> , 2008 , 95, 4183-92	2.9	112
9	Molecular dynamics simulation and coarse-grained analysis of the Arp2/3 complex. <i>Biophysical Journal</i> , 2008 , 95, 5324-33	2.9	18
8	Mechanistic Modeling of Lubricant Degradation. 2. The Autoxidation of Decane and Octane. <i>Industrial & Engineering Chemistry Research</i> , 2008 , 47, 2897-2904	3.9	46
7	Mechanistic Modeling of Lubricant Degradation. 1. Structure-Reactivity Relationships for Free-Radical Oxidation. <i>Industrial & Engineering Chemistry Research</i> , 2008 , 47, 2886-2896	3.9	46
6	Contra-thermodynamic behavior in intermolecular hydrogen transfer of alkylperoxy radicals. <i>ChemPhysChem</i> , 2007 , 8, 1969-78	3.2	4
5	Tribological degradation of two vegetable-based lubricants at elevated temperatures. <i>Journal of Synthetic Lubrication: Research, Development and Application of Synthetic Lubricants and Functional Fluids</i> , 2007 , 24, 167-179		7
4	The 1-D hindered rotor approximation. <i>Theoretical Chemistry Accounts</i> , 2007 , 118, 881-898	1.9	149
3	Elucidation of structure-reactivity relationships in hindered phenols via quantum chemistry and transition state theory. <i>Chemical Engineering Science</i> , 2007 , 62, 5232-5239	4.4	16
2	Quantum chemical investigation of low-temperature intramolecular hydrogen transfer reactions of hydrocarbons. <i>Journal of Physical Chemistry A</i> , 2006 , 110, 10863-71	2.8	54
1	Lexicography of kinetic modeling of complex reaction networks. <i>AIChE Journal</i> , 2005 , 51, 2112-2121	3.6	82