Steven G Boxer

List of Publications by Citations

206 papers	15,280 citations	72 h-index	117 g-index
306 ext. papers	16,545 ext. citations	7.3 avg, IF	6.93 L-index

#	Paper	IF	Citations
206	Formation and Spreading of Lipid Bilayers on Planar Glass Supports. *Journal of Physical Chemistry B*, **1999**, 103, 2554-2559	3.4	605
205	Micropatterning fluid lipid bilayers on solid supports. *Science*, **1997**, 275, 651-3	33.3	521
204	Stark spectroscopy: applications in chemistry, biology, and materials science. *Annual Review of Physical Chemistry*, **1997**, 48, 213-42	15.7	511
203	Micropattern formation in supported lipid membranes. *Accounts of Chemical Research*, **2002**, 35, 149-57	24.3	320
202	Extreme electric fields power catalysis in the active site of ketosteroid isomerase. *Science*, **2014**, 346, 1510-4	33.3	285
201	Architecture and function of membrane proteins in planar supported bilayers: a study with photosynthetic reaction centers. *Biochemistry*, **1996**, 35, 14773-81	3.2	281
200	Measuring electric fields and noncovalent interactions using the vibrational stark effect. *Accounts of Chemical Research*, **2015**, 48, 998-1006	24.3	280
199	Electric fields at the active site of an enzyme: direct comparison of experiment with theory. *Science*, **2006**, 313, 200-4	33.3	266
198	Advances in imaging secondary ion mass spectrometry for biological samples. *Annual Review of Biophysics*, **2009**, 38, 53-74	21.1	246
197	Studies of the Electronic Structure of Metallocene-Based Second-Order Nonlinear Optical Dyes. *Journal of the American Chemical Society*, **1999**, 121, 3715-3723	16.4	245
196	Stark realities. *Journal of Physical Chemistry B*, **2009**, 113, 2972-83	3.4	237
195	Brownian ratchets: molecular separations in lipid bilayers supported on patterned arrays. *Science*, **1999**, 285, 1046-8	33.3	232
194	Effects of linker sequences on vesicle fusion mediated by lipid-anchored DNA oligonucleotides. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 979-84	11.5	226
193	Vibrational Stark effects calibrate the sensitivity of vibrational probes for electric fields in proteins. *Biochemistry*, **2003**, 42, 12050-5	3.2	218
192	Vibrational Stark Effects of Nitriles I. Methods and Experimental Results. *Journal of Physical Chemistry A*, **2000**, 104, 11853-11863	2.8	217
191	Arrays of mobile tethered vesicles on supported lipid bilayers. *Journal of the American Chemical Society*, **2003**, 125, 3696-7	16.4	213
190	Green fluorescent protein variants as ratiometric dual emission pH sensors. 1. Structural characterization and preliminary application. *Biochemistry*, **2002**, 41, 15477-88	3.2	209

189	Molecular transport and organization in supported lipid membranes. *Current Opinion in Chemical Biology*, **2000**, 4, 704-9	9.7	193
188	Vibrational Stark Spectroscopy in Proteins: A Probe and Calibration for Electrostatic Fields. *Journal of Physical Chemistry B*, **1999**, 103, 9813-9817	3.4	191
187	Electric Fields and Enzyme Catalysis. *Annual Review of Biochemistry*, **2017**, 86, 387-415	29.1	190
186	Electroabsorption (Stark effect) spectroscopy of mono- and biruthenium charge-transfer complexes: measurements of changes in dipole moments and other electrooptic properties. *Journal of the American Chemical Society*, **1991**, 113, 6880-6890	16.4	173
185	Choose your label wisely: water-soluble fluorophores often interact with lipid bilayers. *PLoS ONE*, **2014**, 9, e87649	3.7	173
184	Vesicle adsorption and lipid bilayer formation on glass studied by atomic force microscopy. *Langmuir*, **2004**, 20, 11600-6	4	171
183	Site-specific conversion of cysteine thiols into thiocyanate creates an IR probe for electric fields in proteins. *Journal of the American Chemical Society*, **2006**, 128, 13356-7	16.4	169
182	Patterning and Composition Arrays of Supported Lipid Bilayers by Microcontact Printing. *Langmuir*, **2001**, 17, 3400-3405	4	169
181	Patterning Barriers to Lateral Diffusion in Supported Lipid Bilayer Membranes by Blotting and Stamping. *Langmuir*, **2000**, 16, 894-897	4	164
180	Crystal structure and photodynamic behavior of the blue emission variant Y66H/Y145F of green fluorescent protein. *Biochemistry*, **1997**, 36, 9759-65	3.2	153
179	Patterning Hybrid Surfaces of Proteins and Supported Lipid Bilayers. *Langmuir*, **2000**, 16, 6773-6776	4	153
178	Oscillations in the Spontaneous Fluorescence from Photosynthetic Reaction Centers. *The Journal of Physical Chemistry*, **1995**, 99, 859-863		151
177	Measuring electrostatic fields in both hydrogen-bonding and non-hydrogen-bonding environments using carbonyl vibrational probes. *Journal of the American Chemical Society*, **2013**, 135, 11181-92	16.4	140
176	Substrate–Membrane Interactions: Mechanisms for Imposing Patterns on a Fluid Bilayer Membrane. *Langmuir*, **1998**, 14, 3347-3350	4	139
175	Dielectric relaxation in a protein matrix. *The Journal of Physical Chemistry*, **1992**, 96, 5560-5566		133
174	General method for modification of liposomes for encoded assembly on supported bilayers. *Journal of the American Chemical Society*, **2005**, 127, 1356-7	16.4	132
173	Vibrational Stark Effects of Nitriles II. Physical Origins of Stark Effects from Experiment and Perturbation Models. *Journal of Physical Chemistry A*, **2002**, 106, 469-477	2.8	129
172	Origins of the Sensitivity of Molecular Vibrations to Electric Fields: Carbonyl and Nitrosyl Stretches in Model Compounds and Proteins. *Journal of Physical Chemistry B*, **2002**, 106, 5800-5806	3.4	126

171	Decomposition of vibrational shifts of nitriles into electrostatic and hydrogen-bonding effects. *Journal of the American Chemical Society*, **2010**, 132, 12811-3	16.4	121
170	Excited states, electron-transfer reactions, and intermediates in bacterial photosynthetic reaction centers. *The Journal of Physical Chemistry*, **1989**, 93, 8280-8294		119
169	Lipid-anchored DNA mediates vesicle fusion as observed by lipid and content mixing. *Biointerphases* , **2008**, 3, FA17	1.8	117
168	Cell adhesion to protein-micropatterned-supported lipid bilayer membranes. *Journal of Biomedical Materials Research Part B*, **2001**, 55, 487-95		116
167	A conserved water-mediated hydrogen bond network defines bosutinib's kinase selectivity. *Nature Chemical Biology*, **2014**, 10, 127-32	11.7	108
166	Vibrational Stark Effect Spectroscopy. *Journal of the American Chemical Society*, **1995**, 117, 1449-1450	16.4	108
165	Protonation, photobleaching, and photoactivation of yellow fluorescent protein (YFP 10C): a unifying mechanism. *Biochemistry*, **2005**, 44, 5510-24	3.2	103
164	Antibody evolution constrains conformational heterogeneity by tailoring protein dynamics. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 13722-7	11.5	101
163	Writing and Erasing Barriers to Lateral Mobility into Fluid Phospholipid Bilayers. *Langmuir*, **1999**, 15, 3893-3896	4	101
162	Electrostatic interactions in wild-type and mutant recombinant human myoglobins. *Biochemistry*, **1989**, 28, 3771-81	3.2	98
161	Dynamic Stokes shift in green fluorescent protein variants. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 20189-94	11.5	96
160	Rapid isolation of bacterial photosynthetic reaction centers with an engineered poly-histidine tag. *Biochimica Et Biophysica Acta - Bioenergetics*, **1996**, 1276, 171-175	4.6	96
159	Measurement of solvation responses at multiple sites in a globular protein. *Journal of Physical Chemistry B*, **2007**, 111, 8269-76	3.4	95
158	Polymer-supported lipid bilayers on benzophenone-modified substrates. *Biomacromolecules*, **2001**, 2, 70-9	6.9	95
157	Experimental quantification of electrostatics in X-H□□□hydrogen bonds. *Journal of the American Chemical Society*, **2012**, 134, 18986-97	16.4	94
156	Stark effect spectra of Ru(diimine)32+ complexes. *Journal of the American Chemical Society*, **1989**, 111, 1130-1131	16.4	94
155	Discovery of new ligand binding pathways in myoglobin by random mutagenesis. *Nature Structural and Molecular Biology*, **1994**, 1, 226-9	17.6	93
154	Functional cavities in proteins: A general method for proximal ligand substitution in myoglobin. *Journal of the American Chemical Society*, **1994**, 116, 6981-6982	16.4	92

153	Photophysics of DsRed, a Red Fluorescent Protein, from the Ensemble to the Single-Molecule Level. *Journal of Physical Chemistry B*, **2001**, 105, 5048-5054	3.4	91
152	A solvatochromic model calibrates nitriles' vibrational frequencies to electrostatic fields. *Journal of the American Chemical Society*, **2012**, 134, 10373-6	16.4	90
151	Electrostatic fields near the active site of human aldose reductase: 1. New inhibitors and vibrational stark effect measurements. *Biochemistry*, **2008**, 47, 1588-98	3.2	89
150	Structure-based analysis of the initial electron transfer step in bacterial photosynthesis: Electric field induced fluorescence anisotropy. *Journal of Chemical Physics*, **1988**, 89, 1408-1415	3.9	89
149	Quantum delocalization of protons in the hydrogen-bond network of an enzyme active site. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 18454-9	11.5	87
148	Stark Spectroscopy of Donor/Acceptor Substituted Polyenes. *Journal of the American Chemical Society*, **1997**, 119, 3365-3376	16.4	86
147	Direct measurements of electric fields in weak OH hydrogen bonds. *Journal of the American Chemical Society*, **2011**, 133, 17414-9	16.4	84
146	Solvent-induced infrared frequency shifts in aromatic nitriles are quantitatively described by the vibrational Stark effect. *Journal of Physical Chemistry B*, **2012**, 116, 10470-6	3.4	83
145	Patterned supported lipid bilayers and monolayers on poly(dimethylsiloxane). *Langmuir*, **2004**, 20, 11092-9	4	83
144	Nitrile bonds as infrared probes of electrostatics in ribonuclease S. *Journal of Physical Chemistry B*, **2010**, 114, 13536-44	3.4	81
143	Excited State Energy Transfer Pathways in Photosynthetic Reaction Centers. 1. Structural Symmetry Effects. *The Journal of Physical Chemistry*, **1996**, 100, 12052-12059		81
142	Green fluorescent protein variants as ratiometric dual emission pH sensors. 2. Excited-state dynamics. *Biochemistry*, **2002**, 41, 15489-94	3.2	80
141	Electronic Structure of the Chromophore in Green Fluorescent Protein (GFP). *Journal of the American Chemical Society*, **1998**, 120, 9370-9371	16.4	80
140	Quantitative, directional measurement of electric field heterogeneity in the active site of ketosteroid isomerase. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, E299-308	11.5	77
139	Kinetics of DNA-mediated docking reactions between vesicles tethered to supported lipid bilayers. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 18913-8	11.5	76
138	Formation of Supported Lipid Bilayer Composition Arrays by Controlled Mixing and Surface Capture. *Journal of the American Chemical Society*, **2000**, 122, 12901-12902	16.4	75
137	Electric field modulation of the fluorescence from Rhodobacter sphaeroides reaction centers. *Chemical Physics Letters*, **1988**, 144, 243-250	2.5	75
136	Calculations of the electric fields in liquid solutions. *Journal of Physical Chemistry B*, **2013**, 117, 16236-48	3.4	73

135	Trans effects in nitric oxide binding to myoglobin cavity mutant H93G. *Biochemistry*, **1996**, 35, 4939-44	3.2	73
134	Mg coordination by amino acid side chains is not required for assembly and function of the special pair in bacterial photosynthetic reaction centers. *Biochemistry*, **1996**, 35, 2421-8	3.2	72
133	Electrochromism in the near-infrared absorption spectra of bridged ruthenium mixed-valence complexes. *Journal of the American Chemical Society*, **1990**, 112, 8161-8162	16.4	71
132	Characterization of the Light-Harvesting Antennas of Photosynthetic Purple Bacteria by Stark Spectroscopy. 1. LH1 Antenna Complex and the B820 Subunit from Rhodospirillum rubrum. *Journal of Physical Chemistry B*, **1997**, 101, 7284-7292	3.4	70
131	Ultrafast excited-state dynamics in the green fluorescent protein variant S65T/H148D. 1. Mutagenesis and structural studies. *Biochemistry*, **2007**, 46, 12005-13	3.2	70
130	Effective Polarity of Frozen Solvent Glasses in the Vicinity of Dipolar Solutes. *Journal of the American Chemical Society*, **1998**, 120, 3988-3992	16.4	68
129	DNA-tethered membranes formed by giant vesicle rupture. *Journal of Structural Biology*, **2009**, 168, 190-9	3.4	64
128	Ultrafast excited-state dynamics in the green fluorescent protein variant S65T/H148D. 2. Unusual photophysical properties. *Biochemistry*, **2007**, 46, 12014-25	3.2	64
127	Reversible photochemical holeburning in Rhodopseudomonas viridis reaction centers. *FEBS Letters*, **1986**, 200, 237-241	3.8	64
126	Vibrational Stark Spectroscopy of NO Bound to Heme: Effects of Protein Electrostatic Fields on the NO Stretch Frequency. *Journal of the American Chemical Society*, **2000**, 122, 12297-12303	16.4	63
125	A Critical Test of the Electrostatic Contribution to Catalysis with Noncanonical Amino Acids in Ketosteroid Isomerase. *Journal of the American Chemical Society*, **2016**, 138, 11890-5	16.4	62
124	Split Green Fluorescent Proteins: Scope, Limitations, and Outlook. *Annual Review of Biophysics*, **2019**, 48, 19-44	21.1	61
123	Colocalization of the ganglioside G(M1) and cholesterol detected by secondary ion mass spectrometry. *Journal of the American Chemical Society*, **2013**, 135, 5620-30	16.4	60
122	Probing the structure of supported membranes and tethered oligonucleotides by fluorescence interference contrast microscopy. *Langmuir*, **2005**, 21, 4976-83	4	59
121	Controlling two-dimensional tethered vesicle motion using an electric field: interplay of electrophoresis and electro-osmosis. *Langmuir*, **2006**, 22, 2384-91	4	59
120	Distance dependence of electron-transfer reactions in organized systems: the role of superexchange and non-Condon effects in photosynthetic reaction centers. *The Journal of Physical Chemistry*, **1993**, 97, 3040-3053		59
119	Spatially Selective Manipulation of Supported Lipid Bilayers by Laminar Flow:Steps Toward Biomembrane Microfluidics *Langmuir*, **2003**, 19, 1624-1631	4	58
118	Effective Charge Transfer Distances in Cyanide-Bridged Mixed-Valence Transition Metal Complexes. *Journal of the American Chemical Society*, **1998**, 120, 6068-6075	16.4	58

117	Excited-state electronic asymmetry of the special pair in photosynthetic reaction center mutants: absorption and Stark spectroscopy. *Biochemistry*, **1999**, 38, 11949-60	3.2	56
116	Chemical Synthesis and Self-Assembly of a Ladderane Phospholipid. *Journal of the American Chemical Society*, **2016**, 138, 15845-15848	16.4	53
115	Vibrational stark effect probes for nucleic acids. *Journal of Physical Chemistry B*, **2007**, 111, 11611-3	3.4	53
114	Individual vesicle fusion events mediated by lipid-anchored DNA. *Biophysical Journal*, **2013**, 105, 409-19	2.9	52
113	Assignment of the heme axial ligand(s) for the ferric myoglobin (H93G) and heme oxygenase (H25A) cavity mutants as oxygen donors using magnetic circular dichroism. *Biochemistry*, **1999**, 38, 7601-8	3.2	52
112	Effects of nuclear spin polarization on reaction dynamics in photosynthetic bacterial reaction centers. *Biophysical Journal*, **1987**, 51, 937-46	2.9	52
111	High yield of M-side electron transfer in mutants of Rhodobacter capsulatus reaction centers lacking the L-side bacteriopheophytin. *Biochemistry*, **2006**, 45, 3845-51	3.2	51
110	The Role of the Distal and Proximal Protein Environments in Controlling the Ferric Spin State and in Stabilizing Thiolate Ligation in Heme Systems: Thiolate Adducts of the Myoglobin H93G Cavity Mutant. *Journal of the American Chemical Society*, **1999**, 121, 12088-12093	16.4	46
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106	Vibrational Stark Effects of Carbonyl Probes Applied to Reinterpret IR and Raman Data for Enzyme Inhibitors in Terms of Electric Fields at the Active Site. *Journal of Physical Chemistry B*, **2016**, 120, 9672-84	3.4	44
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104	Vesicle fusion observed by content transfer across a tethered lipid bilayer. *Biophysical Journal*, **2011**, 101, L37-9	2.9	43
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99	Modulation of protein function by exogenous ligands in protein cavities: CO binding to a myoglobin cavity mutant containing unnatural proximal ligands. *Biochemistry*, **1996**, 35, 3925-32	3.2	41
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96	Dynamic Reorganization and Correlation among Lipid Raft Components. *Journal of the American Chemical Society*, **2016**, 138, 9996-10001	16.4	39
95	The Mechanism of Triplet Energy Transfer from the Special Pair to the Carotenoid in Bacterial Photosynthetic Reaction Centers. *Journal of Physical Chemistry B*, **1999**, 103, 8786-8789	3.4	39
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93	Short Hydrogen Bonds and Proton Delocalization in Green Fluorescent Protein (GFP). *ACS Central Science*, **2015**, 1, 148-56	16.8	38
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80	FTIR and resonance Raman studies of nitric oxide binding to H93G cavity mutants of myoglobin. *Biochemistry*, **2001**, 40, 15047-56	3.2	33
79	Green fluorescent protein variants as ratiometric dual emission pH sensors. 3. Temperature dependence of proton transfer. *Biochemistry*, **2005**, 44, 8701-11	3.2	32
78	Hydrogen bonding modulates binding of exogenous ligands in a myoglobin proximal cavity mutant. *Biochemistry*, **1999**, 38, 11086-92	3.2	31
77	Functional aspects of ultra-rapid heme doming in hemoglobin, myoglobin, and the myoglobin mutant H93G. *Journal of Biological Chemistry*, **1995**, 270, 1718-20	5.4	31
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74	Quantitative analysis of supported membrane composition using the NanoSIMS. *Applied Surface Science*, **2006**, 252, 6950-6956	6.7	30
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48	pH Dependence of Zika Membrane Fusion Kinetics Reveals an Off-Pathway State. *ACS Central Science*, **2018**, 4, 1503-1510	16.8	19
47	Electric Field Effects in Multicomponent Fluid Lipid Membranes. *Journal of Physical Chemistry B*, **2000**, 104, 119-124	3.4	18
46	Target Membrane Cholesterol Modulates Single Influenza Virus Membrane Fusion Efficiency but Not Rate. *Biophysical Journal*, **2020**, 118, 2426-2433	2.9	15

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40	Local and Global Electric Field Asymmetry in Photosynthetic Reaction Centers. *Journal of Physical Chemistry B*, **2019**, 123, 1527-1536	3.4	13
39	Stark spectroscopy of mixed-valence systems. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2008**, 366, 33-45	3	13
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