Vicente M Aguilella

List of Publications by Year
in descending order

119 papers	3,515 citations	172207 29 h-index	149479 56 g-index
121 all docs	121 docs citations	121 times ranked	4186 citing authors

#	Article	IF	Citations
1	Severe Acute Respiratory Syndrome Coronavirus Envelope Protein Ion Channel Activity Promotes Virus Fitness and Pathogenesis. PLoS Pathogens, 2014, 10, e1004077.	2.1	440
2	Severe acute respiratory syndrome coronavirus E protein transports calcium ions and activates the NLRP3 inflammasome. Virology, 2015, 485, 330-339.	1.1	427
3	Role of Severe Acute Respiratory Syndrome Coronavirus Viroporins E, 3a, and 8a in Replication and Pathogenesis. MBio, 2018, 9, .	1.8	248
4	Coronavirus E protein forms ion channels with functionally and structurally-involved membrane lipids. Virology, 2012, 432, 485-494.	1.1	189
5	Salting Out the Ionic Selectivity of a Wide Channel: The Asymmetry of OmpF. Biophysical Journal, 2004, 87, 943-957.	0.2	155
6	A pH-Tunable Nanofluidic Diode:Â Electrochemical Rectification in a Reconstituted Single Ion Channel. Journal of Physical Chemistry B, 2006, 110, 21205-21209.	1.2	117
7	Membrane Surface-Charge Titration Probed by Gramicidin A Channel Conductance. Biophysical Journal, 1998, 75, 1783-1792.	0.2	98
8	MERS coronavirus envelope protein has a single transmembrane domain that forms pentameric ion channels. Virus Research, 2015, 201, 61-66.	1.1	84
9	Analysis of SARS-CoV E protein ion channel activity by tuning the protein and lipid charge. Biochimica Et Biophysica Acta - Biomembranes, 2013, 1828, 2026-2031.	1.4	82
10	Diffusion, Exclusion, and Specific Binding in a Large Channel: A Study of OmpF Selectivity Inversion. Biophysical Journal, 2009, 96, 56-66.	0.2	77
11	Relevance of Viroporin Ion Channel Activity on Viral Replication and Pathogenesis. Viruses, 2015, 7, 3552-3573.	1.5	76
12	Amphiphilic COSAN and I2-COSAN crossing synthetic lipid membranes: planar bilayers and liposomes. Chemical Communications, 2014, 50, 6700.	2.2	68
13	Estimation of the pore size and charge density in human cadaver skin. Journal of Controlled Release, 1994, 32, 249-257.	4.8	64
14	Ionic transport and space charge density in electrolytic solutions as described by Nernst-Planck and Poisson equations. The Journal of Physical Chemistry, 1986, 90, 6045-6050.	2.9	63
15	Dielectric saturation of water in a membrane protein channel. Physical Chemistry Chemical Physics, 2009, 11, 358-365.	1.3	58
16	Synthetic nanopores with fixed charges: An electrodiffusion model for ionic transport. Physical Review E, 2003, 68, 011910.	0.8	49
17	Insights on the permeability of wide protein channels: measurement and interpretation of ion selectivity. Integrative Biology (United Kingdom), 2011, 3, 159-172.	0.6	49
18	Effects of temperature and ion transport on water splitting in bipolar membranes. Journal of Membrane Science, 1992, 73, 191-201.	4.1	45

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19	Computing numerically the access resistance of a pore. European Biophysics Journal, 2005, 34, 314-322.	1.2	45
20	Hydrophobic Pulmonary Surfactant Proteins SP-B and SP-C Induce Pore Formation in Planar Lipid Membranes: Evidence for Proteolipid Pores. Biophysical Journal, 2013, 104, 146-155.	0.2	45
21	Acidification Asymmetrically Affects Voltage-dependent Anion Channel Implicating the Involvement of Salt Bridges. Journal of Biological Chemistry, 2014, 289, 23670-23682.	1.6	44
22	Alamethicin channel conductance modified by lipid charge. European Biophysics Journal, 2001, 30, 233-241.	1.2	41
23	Electrostatic properties and macroscopic electrodiffusion in OmpF porin and mutants. Bioelectrochemistry, 2007, 70, 320-327.	2.4	40
24	Overcharging below the nanoscale: Multivalent cations reverse the ion selectivity of a biological channel. Physical Review E, 2010, 81, 021912.	0.8	40
25	Inhibition of the Human Respiratory Syncytial Virus Small Hydrophobic Protein and Structural Variations in a Bicelle Environment. Journal of Virology, 2014, 88, 11899-11914.	1.5	40
26	Directional ion selectivity in a biological nanopore with bipolar structure. Journal of Membrane Science, 2009, 331, 137-142.	4.1	38
27	Current-voltage curves for ion-exchange membranes. Contributions to the total potential drop. Journal of Membrane Science, 1991, 61, 177-190.	4.1	36
28	Electrical pumping of potassium ions against an external concentration gradient in a biological ion channel. Applied Physics Letters, 2013, 103, .	1.5	36
29	On the nature of the diffusion potential derived from Nernst-Planck flux equations by using the electroneutrality assumption. Electrochimica Acta, 1987, 32, 483-488.	2.6	31
30	Ion Transport in Confined Geometries below the Nanoscale: Access Resistance Dominates Protein Channel Conductance in Diluted Solutions. ACS Nano, 2017, 11, 10392-10400.	7.3	30
31	Beyond the energy balance: Exergy analysis of an industrial roller kiln firing porcelain tiles. Applied Thermal Engineering, 2019, 150, 1002-1015.	3.0	30
32	Polarization Effects at the Cation-Exchange Membrane--Solution Interface.. Acta Chemica Scandinavica, 1991, 45, 115-121.	0.7	29
33	Protein Ion Channels as Molecular Ratchets. Switchable Current Modulation in Outer Membrane Protein F Porin Induced by Millimolar La³⁺ Ions. Journal of Physical Chemistry C, 2012, 116, 6537-6542.	1.5	28
34	Ion Selectivity of a Biological Channel at High Concentration Ratio: Insights on Small Ion Diffusion and Binding. Journal of Physical Chemistry B, 2009, 113, 8745-8751.	1.2	27
35	Channel-Inactivating Mutations and Their Revertant Mutants in the Envelope Protein of Infectious Bronchitis Virus. Journal of Virology, 2017, 91, .	1.5	27
36	Î±-Synuclein emerges as a potent regulator of VDAC-facilitated calcium transport. Cell Calcium, 2021, 95, 102355.	1.1	27

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37	Ionic Transport Across Porous Charged Membranes and the Goldman Constant Field Assumption. Zeitschrift Fur Elektrotechnik Und Elektrochemie, 1986, 90, 867-872.	0.9	26
38	Theoretical Description of the Ion Transport Across Nanopores With Titratable Fixed Charges: Analogies Between Ion Channels and Synthetic Pores. Cell Biochemistry and Biophysics, 2006, 44, 287-312.	0.9	25
39	Lipid charge regulation of non-specific biological ion channels. Physical Chemistry Chemical Physics, 2014, 16, 3881-3893.	1.3	21
40	Probing Tubulin-Blocked State of VDAC by Varying Membrane Surface Charge. Biophysical Journal, 2012, 102, 2070-2076.	0.2	20
41	Scaling Behavior of Ionic Transport in Membrane Nanochannels. Nano Letters, 2018, 18, 6604-6610.	4.5	20
42	A finite-difference method for numerical solution of the steady-state nernstâ€"planck equations with non-zero convection and electric current density. Journal of Membrane Science, 1986, 28, 139-149.	4.1	19
43	A numerical approach to ionic transport through charged membranes. Journal of Computational Physics, 1988, 75, 1-14.	1.9	16
44	A fluid approach to simple circuits. Nature Nanotechnology, 2009, 4, 403-404.	15.6	16
45	Increased salt concentration promotes competitive block of OmpF channel by protons. Biochimica Et Biophysica Acta - Biomembranes, 2012, 1818, 2777-2782.	1.4	16
46	Observable variables of the transport processes in discountinuous systems. Electrochimica Acta, 1988, 33, 1151-1155.	2.6	15
47	Film control and membrane control in charged membranes. Journal of Membrane Science, 1988, 36, 497-509.	4.1	15
48	Electrokinetic phenomena in microporous membranes with a fixed transverse charge distribution. Journal of Membrane Science, 1996, 113, 191-204.	4.1	15
49	Linearity, saturation and blocking in a large multiionic channel: Divalent cation modulation of the OmpF porin conductance. Biochemical and Biophysical Research Communications, 2011, 404, 330-334.	1.0	15
50	Access resistance of a single conducting membrane channel. Biochimica Et Biophysica Acta - Biomembranes, 1998, 1368, 338-342.	1.4	14
51	Ion channel activity of the CSFV p7 viroporin in surrogates of the ER lipid bilayer. Biochimica Et Biophysica Acta - Biomembranes, 2016, 1858, 30-37.	1.4	14
52	Electrostatics Explains the Shift in VDAC Gating with Salt Activity Gradient. Biophysical Journal, 2002, 82, 1773-1783.	0.2	13
53	Transport mechanisms of SARS-CoV-E viroporin in calcium solutions: Lipid-dependent Anomalous Mole Fraction Effect and regulation of pore conductance. Biochimica Et Biophysica Acta - Biomembranes, 2021, 1863, 183590.	1.4	13
54	Rectification Properties and pH-Dependent Selectivity of Meningococcal Class 1 Porin. Biophysical Journal, 2008, 94, 1194-1202.	0.2	12

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55	Molecular Characterization of the Viroporin Function of Foot-and-Mouth Disease Virus Nonstructural Protein 2B. Journal of Virology, 2018, 92, .	1.5	12
56	Passive transport of small ions through human stratum corneum. Journal of Controlled Release, 1997, 44, 11-18.	4.8	11
57	Validity of the electroneutrality and goldman constant-field assumptions in describing the diffusion potential for ternary electrolyte systems in simple, porous membranes. Journal of Membrane Science, 1986, 29, 117-126.	4.1	10
58	Electrostatic Interactions Drive the Nonsteric Directional Block of OmpF Channel by La³⁺. Langmuir, 2013, 29, 15320-15327.	1.6	10
59	Gibbs' Dividing Surface between a Fixed-Charge Membrane and an Electrolyte Solution. Application to Electrokinetic Phenomena in Charged Pores. Langmuir, 1999, 15, 6156-6162.	1.6	9
60	Double layer potential and degree of dissociation in charged lipid monolayers. Chemistry and Physics of Lipids, 2000, 105, 225-229.	1.5	9
61	Reversal Potential of a Wide Ion Channel. Nonuniform Charge Distribution Effects. Journal of Physical Chemistry B, 2001, 105, 9902-9908.	1.2	9
62	Critical assessment of OmpF channel selectivity: merging information from different experimental protocols. Journal of Physics Condensed Matter, 2010, 22, 454106.	0.7	9
63	Selectivity of Protein Ion Channels and the Role of Buried Charges. Analytical Solutions, Numerical Calculations, and MD Simulations. Journal of Physical Chemistry B, 2015, 119, 8475-8479.	1.2	8
64	Ion adsorption in weakly charged membranes. Effects on salt flux and membrane potential. Langmuir, 1993, 9, 550-554.	1.6	7
65	Ion Permeability of a Membrane with Soft Polar Interfaces. 1. The Hydrophobic Layer as the Rate-Determining Step. Langmuir, 1996, 12, 4817-4827.	1.6	7
66	Heat loss and hypothermia in free diving: Estimation of survival time under water. American Journal of Physics, 2003, 71, 333-337.	0.3	7
67	Interaction of a polar molecule with an ion channel. Physical Review E, 2004, 70, 041912.	0.8	7
68	Entropyâ€“enthalpy compensation at the single protein level: pH sensing in the bacterial channel OmpF. Nanoscale, 2014, 6, 15210-15215.	2.8	7
69	Mutation-induced changes of transmembrane pore size revealed by combined ion-channel conductance and single vesicle permeabilization analyses. Biochimica Et Biophysica Acta - Biomembranes, 2018, 1860, 1015-1021.	1.4	7
70	Thermodynamics of electrokinetic processesâ€”I. Formulations. Electrochimica Acta, 1990, 35, 705-709.	2.6	6
71	Divalent Metal Ion Transport across Large Biological Ion Channels and Their Effect on Conductance and Selectivity. Biochemistry Research International, 2012, 2012, 1-12.	1.5	6
72	A model of pressure-induced interdigitation of phospholipid membranes. Chemical Physics Letters, 2002, 360, 515-520.	1.2	5

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73	Continuum electrostatic calculations of the pKa of ionizable residues in an ion channel: Dynamic vs. static input structure. European Physical Journal E, 2010, 31, 429-439.	0.7	5
74	Effect of endosomal acidification on small ion transport through the anthrax toxin <scp>PA</scp>₆₃ channel. FEBS Letters, 2017, 591, 3481-3492.	1.3	5
75	A Perturbed Electric Double Layer Near a Soft Polar Interface. Journal of Colloid and Interface Science, 1997, 186, 212-214.	5.0	4
76	A Study of the Failure of the Electroneutrality Assumption in the Vicinity of the Inner Membrane Boundaries. Journal of Non-Equilibrium Thermodynamics, 1987, 12, .	2.4	3
77	Ion Permeability of a Membrane with Soft Polar Interfaces. 2. The Polar Zones as the Rate-Determining Step. Langmuir, 1998, 14, 4630-4637.	1.6	3
78	Access resistance in protein nanopores. A structure-based computational approach. Bioelectrochemistry, 2020, 131, 107371.	2.4	3
79	PEG Equilibrium Partitioning in the Î±-Hemolysin Channel: Neutral Polymer Interaction with Channel Charges. Biomacromolecules, 2021, 22, 410-418.	2.6	3
80	Transport processes through membranes with gaseous electrodes. Electrochimica Acta, 1989, 34, 1385-1386.	2.6	2
81	Ionic transport through a homogeneous membrane in the presence of simultaneous diffusion, conduction and convection. Journal of the Chemical Society Faraday Transactions I, 1989, 85, 223.	1.0	2
82	Ion transport through membranes with soft interfaces. The influence of the polar zone thickness. Thin Solid Films, 1996, 272, 10-14.	0.8	2
83	Inward â€œCentrifugalâ€• Force on a Heliumâ€Filled Balloon: An Illustrative Experiment. Physics Teacher, 2002, 40, 214-216.	0.2	2
84	On Channel Activity of Synthetic Peptides Derived from Severe and Acute Respiratory Syndrome Coronavirus (SARS-CoV) E Protein. Biophysical Journal, 2012, 102, 656a-657a.	0.2	2
85	Tubulin-Blocked State of VDAC Probed by Polymer Partitioning and Bilayer Surface Charge. Biophysical Journal, 2012, 102, 161a.	0.2	1
86	Entropic Modulation of Ion Transport through OmpF Channel. Molecular Basis of pH Sensing Derived from Cooperative Interactions. Biophysical Journal, 2012, 102, 269a-270a.	0.2	1
87	Ion Channels Formed by SARS Coronavirus Envelope Protein: Lipid Regulation of Conductance and Selectivity. Biophysical Journal, 2013, 104, 632a.	0.2	1
88	CSFV p7 Viroporin ION Channel Activity in Lipid Bilayers Mimicking theÂER Membrane. Biophysical Journal, 2016, 110, 115a.	0.2	1
89	Mechanistic Insights into Voltage-Induced Closure of Bacterial Beta-Barrel Channels. Biophysical Journal, 2019, 116, 401a.	0.2	1
90	The physics of breath-hold diving. Physics Education, 1996, 31, 34-39.	0.3	0

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91	A model of VDAC structural rearrangement in the presence of a salt activity gradient. Chemical Physics Letters, 2001, 348, 102-106.	1.2	0
92	Dielectric Saturation of Water in a Protein Channel. Biophysical Journal, 2009, 96, 603a.	0.2	0
93	Negative Cooperativity in a Protein Ion Channel Revealed by Current Noise, Conductance and Selectivity Experiments. Biophysical Journal, 2009, 96, 603a.	0.2	0
94	Directional Ion Selectivity In An Ion Channel With Bipolar Charge Distribution. Biophysical Journal, 2009, 96, 662a.	0.2	0
95	Electrostatic Properties of VDAC Channel: Structure Vs. Selectivity. Biophysical Journal, 2010, 98, 208a.	0.2	0
96	Overcharging Below the Nanoscale: Multivalent Cations Reverse the Ion Selectivity of a Biological Channel. Biophysical Journal, 2010, 98, 17a.	0.2	0
97	Increased Salt Concentration Promotes Negative Cooperativity in OmpF Channel. Biophysical Journal, 2010, 98, 333a.	0.2	0
98	Measurement and Interpretation of Ion Selectivity in Wide Channels: Merging Information from Different Approaches. Biophysical Journal, 2011, 100, 577a.	0.2	0
99	Effect of Hydrophobic Surfactant Proteins SP-B and SP-C on the Permeability of Phospholipid Membranes. Biophysical Journal, 2011, 100, 337a.	0.2	0
100	Effects of Divalent Cations on the Single-Channel Conductance of the OmpF Channel: Linearity, Saturation and Blocking. Biophysical Journal, 2011, 100, 577a.	0.2	0
101	Modulation of Conductance and Ion Selectivity of OmpF Porin by La3+ÂIons. Biophysical Journal, 2012, 102, 335a.	0.2	0
102	Current Fluctuation Analysis to Study Mg2+-Binding in the Bacterial Porin OmpF. Biophysical Journal, 2013, 104, 630a.	0.2	0
103	Current Insights into the Molecular Mechanisms of VDAC-Tubulin Interaction. Biophysical Journal, 2013, 104, 215a.	0.2	0
104	A Step Forward in Understanding the Mechanism of VDAC Voltage-Gating. Biophysical Journal, 2013, 104, 655a.	0.2	0
105	La3+-Induced Asymmetric Current Inhibition in OmpF Channel. Biophysical Journal, 2013, 104, 630a.	0.2	0
106	Experimental Observation of Surface Charge Inversion in a Biological Nanopore in Presence of Monovalent and Multivalent Cations. Biophysical Journal, 2014, 106, 210a.	0.2	0
107	Electrical Pumping of Potassium Ions Against an External Concentration Gradient in a Biological Ion Channel. Biophysical Journal, 2014, 106, 416a.	0.2	0
108	Cobaltabisdicarbollide Macroanion is able to Diffuse across the Lipid Membrane; Study of Kinetics and Transport. Biophysical Journal, 2014, 106, 210a.	0.2	0

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109	Relevance of SARS-CoV E Protein Ion Channel Activity in Virus Pathogenesis. Biophysical Journal, 2015, 108, 582a.	0.2	0
110	Current Fluctuation Analysis in a Protein Nanopore. Biophysical Journal, 2015, 108, 634a.	0.2	0
111	Buried Charges and their Effect on Ion Channel Selectivity. Analytical Solutions, Numerical Calculations and MD Simulations. Biophysical Journal, 2016, 110, 245a.	0.2	0
112	Fluctuation-Driven Transport in Bacterial Channels under Acidic Stress. Biophysical Journal, 2017, 112, 545a.	0.2	0
113	Effect of the Endosomal Acidification on Small Ion Transport Through the Anthrax Toxin PA63 Channel. Biophysical Journal, 2018, 114, 559a.	0.2	0
114	Interfacial Effects Dominate Ion Permeation through Membrane Channels in Low Ionic Strength Solutions. Biophysical Journal, 2018, 114, 260a.	0.2	0
115	Scaling Laws for Ionic Transport in Nanochannels: Bulk, Surface and Interfacial Effects. Biophysical Journal, 2018, 114, 609a.	0.2	0
116	Noise Properties of Ion Channels Formed by Pestivirus Viroporin p7. Biophysical Journal, 2019, 116, 221a.	0.2	0
117	Interfacial Effects of Ion Channels in Lipid Membranes: Mean-Field Computation from 3D Atomic Structures Versus Analytical Estimates. Biophysical Journal, 2019, 116, 219a.	0.2	0
118	Assessing the Role of Electrostatic Interactions in the Mechanism of Beta-Barrel Channel Gating. Biophysical Journal, 2021, 120, 156a.	0.2	0
119	Bacterial Porins. Springer Series in Biophysics, 2015, , 101-121.	0.4	0