Zuzanna S Siwy

List of Publications by Year in Descending Order

105 papers	10,245 citations	50 h-index	101 g-index
121 ext. papers	11,342 ext. citations	10.7 avg, IF	6.65 L-index

#	Paper	IF	Citations
105	Deep learning assisted mechanotyping of individual cells through repeated deformations and relaxations in undulating channels. *Biomicrofluidics*, **2022**, 16, 014104	3.2	1
104	Enhanced electro-osmosis in propylene carbonate salt solutions. *Journal of Chemical Physics*, **2021**, 154, 134707	3.9	3
103	Principles of Small-Molecule Transport through Synthetic Nanopores. *ACS Nano*, **2021**, 15, 16194-16206	16.7	2
102	Tunable Nanopore Arrays as the Basis for Ionic Circuits. *ACS Applied Materials & Interfaces*, **2020**, 12, 56622-56631	9.5	8
101	Gating of Hydrophobic Nanopores with Large Anions. *ACS Nano*, **2020**, 14, 4306-4315	16.7	18
100	Ionic amplifying circuits inspired by electronics and biology. *Nature Communications*, **2020**, 11, 1568	17.4	21
99	Charge Inversion and Calcium Gating in Mixtures of Ions in Nanopores. *Journal of the American Chemical Society*, **2020**, 142, 2925-2934	16.4	33
98	Reading amino acids in a nanopore. *Nature Biotechnology*, **2020**, 38, 159-160	44.5	17
97	Tunable Current Rectification and Selectivity Demonstrated in Nanofluidic Diodes through Kinetic Functionalization. *Journal of Physical Chemistry Letters*, **2020**, 11, 60-66	6.4	20
96	Electrodiffusioosmosis-Induced Negative Differential Resistance in pH-Regulated Mesopores Containing Purely Monovalent Solutions. *ACS Applied Materials & Interfaces*, **2020**, 12, 3198-3204	9.5	14
95	Modulation of Ionic Current Rectification in Ultrashort Conical Nanopores. *Analytical Chemistry*, **2020**, 92, 16188-16196	7.8	13
94	Rectification of Concentration Polarization in Mesopores Leads To High Conductance Ionic Diodes and High Performance Osmotic Power. *Journal of the American Chemical Society*, **2019**, 141, 3691-3698	16.4	112
93	Critical Knowledge Gaps in Mass Transport through Single-Digit Nanopores: A Review and Perspective. *Journal of Physical Chemistry C*, **2019**, 123, 21309-21326	3.8	121
92	Biomimetic potassium-selective nanopores. *Science Advances*, **2019**, 5, eaav2568	14.3	74
91	A nanofluidic ion regulation membrane with aligned cellulose nanofibers. *Science Advances*, **2019**, 5, eaau4238	14.3	81
90	Modulation of Charge Density and Charge Polarity of Nanopore Wall by Salt Gradient and Voltage. *ACS Nano*, **2019**, 13, 9868-9879	16.7	26
89	Electrokinetic Phenomena in Organic Solvents. *Journal of Physical Chemistry B*, **2019**, 123, 6123-6131	3.4	10

88	Abnormal Ionic-Current Rectification Caused by Reversed Electroosmotic Flow under Viscosity Gradients across Thin Nanopores. *Analytical Chemistry*, **2019**, 91, 996-1004	7.8	24
87	Concentration-Polarization-Induced Precipitation and Ionic Current Oscillations with Tunable Frequency. *Journal of Physical Chemistry C*, **2018**, 122, 3648-3654	3.8	12
86	Voltage-Induced Modulation of Ionic Concentrations and Ion Current Rectification in Mesopores with Highly Charged Pore Walls. *Journal of Physical Chemistry Letters*, **2018**, 9, 393-398	6.4	62
85	The Design and Characterization of Multifunctional Aptamer Nanopore Sensors. *ACS Nano*, **2018**, 12, 4844-4852	16.7	52
84	Probing ion current in solid-electrolytes at the meso- and nanoscale. *Faraday Discussions*, **2018**, 210, 55-67	3.6	2
83	Processes at nanoelectrodes: general discussion. *Faraday Discussions*, **2018**, 210, 235-265	3.6	1
82	Information Dynamics of a Nonlinear Stochastic Nanopore System. *Entropy*, **2018**, 20,	2.8	1
81	Processes at nanopores and bio-nanointerfaces: general discussion. *Faraday Discussions*, **2018**, 210, 145-171	3.6	2
80	Solid-State Ionic Diodes Demonstrated in Conical Nanopores. *Journal of Physical Chemistry C*, **2017**, 121, 6170-6176	3.8	28
79	Experimental Investigation of Dynamic Deprotonation/Protonation of Highly Charged Particles. *Journal of Physical Chemistry C*, **2017**, 121, 6255-6263	3.8	6
78	Ion transport in gel and gel-liquid systems for LiClO-doped PMMA at the meso- and nanoscales. *Nanoscale*, **2017**, 9, 16232-16243	7.7	13
77	A hybrid resistive pulse-optical detection platform for microfluidic experiments. *Scientific Reports*, **2017**, 7, 10173	4.9	9
76	Improving on aquaporins. *Science*, **2017**, 357, 753	33.3	17
75	Probing charges on solid-liquid interfaces with the resistive-pulse technique. *Nanoscale*, **2017**, 9, 13527-13537	7.7	10
74	Viscosity and Conductivity Tunable Diode-like Behavior for Meso- and Micropores. *Journal of Physical Chemistry Letters*, **2017**, 8, 3846-3852	6.4	25
73	Highly Charged Particles Cause a Larger Current Blockage in Micropores Compared to Neutral Particles. *ACS Nano*, **2016**, 10, 8413-22	16.7	42
72	Nanopores and Nanochannels: From Gene Sequencing to Genome Mapping. *ACS Nano*, **2016**, 10, 9768-9771	16.7	33
71	Salt Solutions in Carbon Nanotubes: The Role of Cation Interactions. *Journal of Physical Chemistry C*, **2016**, 120, 7332-7338	3.8	57

70	Role of Particle Focusing in Resistive-Pulse Technique: Direction-Dependent Velocity in Micropores. *ACS Nano*, **2016**, 10, 3509-17	16.7	18
69	Direction Dependence of Resistive-Pulse Amplitude in Conically Shaped Mesopores. *Analytical Chemistry*, **2016**, 88, 4917-25	7.8	31
68	Polarization of Gold in Nanopores Leads to Ion Current Rectification. *Journal of Physical Chemistry Letters*, **2016**, 7, 4152-4158	6.4	35
67	Pores with longitudinal irregularities distinguish objects by shape. *ACS Nano*, **2015**, 9, 4390-7	16.7	40
66	Nanopore Current Oscillations: Nonlinear Dynamics on the Nanoscale. *Journal of Physical Chemistry Letters*, **2015**, 6, 1800-6	6.4	15
65	Anomalous mobility of highly charged particles in pores. *Analytical Chemistry*, **2015**, 87, 8517-23	7.8	24
64	Rectification of nanopores in aprotic solvents--transport properties of nanopores with surface dipoles. *Nanoscale*, **2015**, 7, 19080-91	7.7	32
63	Macroscopic strain controlled ion current in an elastomeric microchannel. *Journal of Applied Physics*, **2015**, 117, 174904	2.5	
62	Ionic conductivity of a single porous MnO2 mesorod at controlled oxidation states. *Journal of Materials Chemistry A*, **2015**, 3, 12858-12863	13	4
61	Synthesis and Biological Evaluation of a Valinomycin Analog Bearing a Pentafluorophenyl Active Ester Moiety. *Journal of Organic Chemistry*, **2015**, 80, 12646-50	4.2	4
60	Presence of electrolyte promotes wetting and hydrophobic gating in nanopores with residual surface charges. *Analyst, The*, **2015**, 140, 4804-12	5	10
59	DNA-modified polymer pores allow pH- and voltage-gated control of channel flux. *Journal of the American Chemical Society*, **2014**, 136, 9902-5	16.4	146
58	Diffusion and Trapping of Single Particles in Pores with Combined Pressure and Dynamic Voltage. *Journal of Physical Chemistry C*, **2014**, 118, 19214-19223	3.8	23
57	Charged Particles Modulate Local Ionic Concentrations and Cause Formation of Positive Peaks in Resistive-Pulse-Based Detection. *Journal of Physical Chemistry C*, **2014**, 118, 2391-2398	3.8	57
56	Rectification of Ion Current in Nanopores Depends on the Type of Monovalent Cations: Experiments and Modeling. *Journal of Physical Chemistry C*, **2014**, 118, 9809-9819	3.8	63
55	Velocity profiles in pores with undulating opening diameter and their importance for resistive-pulse experiments. *Analytical Chemistry*, **2014**, 86, 10445-53	7.8	17
54	Particle deformation and concentration polarization in electroosmotic transport of hydrogels through pores. *ACS Nano*, **2013**, 7, 3720-8	16.7	41
53	Probing Porous Structure of Single Manganese Oxide Mesorods with Ionic Current. *Journal of Physical Chemistry C*, **2013**, 117, 24836-24842	3.8	6

52	Disentangling steric and electrostatic factors in nanoscale transport through confined space. *Nano Letters*, **2013**, 13, 3890-6	11.5	18
51	Polystyrene particles reveal pore substructure as they translocate. *ACS Nano*, **2012**, 6, 7295-302	16.7	58
50	The role of pore geometry in single nanoparticle detection. *ACS Nano*, **2012**, 6, 8366-80	16.7	90
49	A hydrophobic entrance enhances ion current rectification and induces dewetting in asymmetric nanopores. *Analyst, The*, **2012**, 137, 2944-50	5	32
48	Electric-field-induced wetting and dewetting in single hydrophobic nanopores. *Nature Nanotechnology*, **2011**, 6, 798-802	28.7	230
47	Hydrogen peroxide sensing with horseradish peroxidase-modified polymer single conical nanochannels. *Analytical Chemistry*, **2011**, 83, 1673-80	7.8	151
46	Biomolecular conjugation inside synthetic polymer nanopores via glycoprotein-lectin interactions. *Nanoscale*, **2011**, 3, 1894-903	7.7	69
45	DNA strands attached inside single conical nanopores: ionic pore characteristics and insight into DNA biophysics. *Journal of Membrane Biology*, **2011**, 239, 105-13	2.3	21
44	Ag nanotubes and Ag/AgCl electrodes in nanoporous membranes. *Nanotechnology*, **2011**, 22, 155301	3.4	10
43	Comparison of bipolar and unipolar ionic diodes. *Nanotechnology*, **2010**, 21, 265301	3.4	58
42	Precipitation-Induced Voltage-Dependent Ion Current Fluctuations in Conical Nanopores. *Journal of Physical Chemistry C*, **2010**, 114, 8126-8134	3.8	31
41	Engineered voltage-responsive nanopores. *Chemical Society Reviews*, **2010**, 39, 1115-32	58.5	389
40	Asymmetric properties of ion current 1/f noise in conically shaped nanopores. *Chemical Physics*, **2010**, 375, 529-535	2.3	20
39	Nonequilibrium 1/f noise in rectifying nanopores. *Physical Review Letters*, **2009**, 103, 248104	7.4	51
38	Versatile ultrathin nanoporous silicon nitride membranes. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 21039-44	11.5	127
37	Control of ionic transport through gated single conical nanopores. *Analytical and Bioanalytical Chemistry*, **2009**, 394, 413-9	4.4	134
36	Biosensing with nanofluidic diodes. *Journal of the American Chemical Society*, **2009**, 131, 8211-20	16.4	303
35	Tuning transport properties of nanofluidic devices with local charge inversion. *Journal of the American Chemical Society*, **2009**, 131, 5194-202	16.4	215

34	Molecular control of ionic conduction in polymer nanopores. *Faraday Discussions*, **2009**, 143, 47-62; discussion 81-93	3.6	39
33	Nanopore analytics: sensing of single molecules. *Chemical Society Reviews*, **2009**, 38, 2360-84	58.5	915
32	Squeezing ionic liquids through nanopores. *Nano Letters*, **2009**, 9, 2125-8	11.5	70
31	Nanopores: Generation, Engineering, and Single-Molecule Applications **2009**, 293		10
30	Nanoprecipitation-assisted ion current oscillations. *Nature Nanotechnology*, **2008**, 3, 51-7	28.7	140
29	Synthetic nanopores as a test case for ion channel theories: the anomalous mole fraction effect without single filing. *Biophysical Journal*, **2008**, 95, 609-19	2.9	61
28	Nanofluidic ionic diodes. Comparison of analytical and numerical solutions. *ACS Nano*, **2008**, 2, 1589-602	16.7	182
27	Ionic selectivity of single nanochannels. *Nano Letters*, **2008**, 8, 1978-85	11.5	328
26	Nanofluidic Bipolar Transistors. *Advanced Materials*, **2008**, 20, 293-297	24	230
25	Nanofluidic diode. *Nano Letters*, **2007**, 7, 552-6	11.5	491
24	Poisson-Nernst-Planck model of ion current rectification through a nanofluidic diode. *Physical Review E*, **2007**, 76, 041202	2.4	173
23	Chemistry. Learning nature's way: biosensing with synthetic nanopores. *Science*, **2007**, 317, 331-2	33.3	233
22	Ion-Current Rectification in Nanopores and Nanotubes with Broken Symmetry. *Advanced Functional Materials*, **2006**, 16, 735-746	15.6	634
21	Calcium-induced voltage gating in single conical nanopores. *Nano Letters*, **2006**, 6, 1729-34	11.5	128
20	Negative incremental resistance induced by calcium in asymmetric nanopores. *Nano Letters*, **2006**, 6, 473-7	11.5	77
19	Resistive-pulse DNA detection with a conical nanopore sensor. *Langmuir*, **2006**, 22, 10837-43	4	177
18	Conical nanopore membranes: controlling the nanopore shape. *Small*, **2006**, 2, 194-8	11	135
17	Voltage-gated sodium channel expression and potentiation of human breast cancer metastasis. *Clinical Cancer Research*, **2005**, 11, 5381-9	12.9	340

16	Effect of crown ether on ion currents through synthetic membranes containing a single conically shaped nanopore. *Journal of Physical Chemistry B*, **2005**, 109, 18400-7	3.4	42
15	Detecting single porphyrin molecules in a conically shaped synthetic nanopore. *Nano Letters*, **2005**, 5, 1824-9	11.5	241
14	Protein biosensors based on biofunctionalized conical gold nanotubes. *Journal of the American Chemical Society*, **2005**, 127, 5000-1	16.4	452
13	Transport of ions and biomolecules through single asymmetric nanopores in polymer films. *Nuclear Instruments & Methods in Physics Research B*, **2005**, 236, 109-116	1.2	83
12	Searching for self-similarity in switching time and turbulent cascades in ion transport through a biochannel. A time delay asymmetry. *Physica A: Statistical Mechanics and Its Applications*, **2004**, 336, 319-333	3.3	4
11	An Asymmetric Polymer Nanopore for Single Molecule Detection. *Nano Letters*, **2004**, 4, 497-501	11.5	215
10	DNA-nanotube artificial ion channels. *Journal of the American Chemical Society*, **2004**, 126, 15646-7	16.4	229
9	Conical-nanotube ion-current rectifiers: the role of surface charge. *Journal of the American Chemical Society*, **2004**, 126, 10850-1	16.4	415
8	A nanodevice for rectification and pumping ions. *American Journal of Physics*, **2004**, 72, 567-574	0.7	135
7	Statistical and fractal analyses of rat prostate cancer cell motility in a direct current electric field: comparison of strongly and weakly metastatic cells. *European Biophysics Journal*, **2003**, 32, 12-21	1.9	11
6	Preparation of synthetic nanopores with transport properties analogous to biological channels. *Surface Science*, **2003**, 532-535, 1061-1066	1.8	165
5	Application of dwell-time series in studies of long-range correlation in single channel ion transport: analysis of ion current through a big conductance locust potassium channel. *Physica A: Statistical Mechanics and Its Applications*, **2001**, 297, 79-96	3.3	22
4	What can be learnt from the analysis of short time series of ion channel recordings. *Physica A: Statistical Mechanics and Its Applications*, **2000**, 276, 376-390	3.3	5
3	Statistical analysis of ionic current fluctuations in membrane channels. *Physical Review E*, **1999**, 60, 7343-8	2.4	50
2	A dual mode mechanism of conductance through fine porous membranes. *Journal of Membrane Science*, **1998**, 145, 253-263	9.6	10
1	The polymer structure and morphology in terms of the concepts of chaos and fractals. *Polimery*, **1998**, 43, 225-238	3.4	2