

# Zuzanna S Siwy

## List of Publications by Citations

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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	Nanopore analytics: sensing of single molecules. <i>Chemical Society Reviews</i> , <b>2009</b> , 38, 2360-84	58.5	915
104	Ion-Current Rectification in Nanopores and Nanotubes with Broken Symmetry. <i>Advanced Functional Materials</i> , <b>2006</b> , 16, 735-746	15.6	634
103	Nanofluidic diode. <i>Nano Letters</i> , <b>2007</b> , 7, 552-6	11.5	491
102	Protein biosensors based on biofunctionalized conical gold nanotubes. <i>Journal of the American Chemical Society</i> , <b>2005</b> , 127, 5000-1	16.4	452
101	Conical-nanotube ion-current rectifiers: the role of surface charge. <i>Journal of the American Chemical Society</i> , <b>2004</b> , 126, 10850-1	16.4	415
100	Engineered voltage-responsive nanopores. <i>Chemical Society Reviews</i> , <b>2010</b> , 39, 1115-32	58.5	389
99	Voltage-gated sodium channel expression and potentiation of human breast cancer metastasis. <i>Clinical Cancer Research</i> , <b>2005</b> , 11, 5381-9	12.9	340
98	Ionic selectivity of single nanochannels. <i>Nano Letters</i> , <b>2008</b> , 8, 1978-85	11.5	328
97	Biosensing with nanofluidic diodes. <i>Journal of the American Chemical Society</i> , <b>2009</b> , 131, 8211-20	16.4	303
96	Detecting single porphyrin molecules in a conically shaped synthetic nanopore. <i>Nano Letters</i> , <b>2005</b> , 5, 1824-9	11.5	241
95	Chemistry. Learning nature's way: biosensing with synthetic nanopores. <i>Science</i> , <b>2007</b> , 317, 331-2	33.3	233
94	Electric-field-induced wetting and dewetting in single hydrophobic nanopores. <i>Nature Nanotechnology</i> , <b>2011</b> , 6, 798-802	28.7	230
93	Nanofluidic Bipolar Transistors. <i>Advanced Materials</i> , <b>2008</b> , 20, 293-297	24	230
92	DNA-nanotube artificial ion channels. <i>Journal of the American Chemical Society</i> , <b>2004</b> , 126, 15646-7	16.4	229
91	Tuning transport properties of nanofluidic devices with local charge inversion. <i>Journal of the American Chemical Society</i> , <b>2009</b> , 131, 5194-202	16.4	215
90	An Asymmetric Polymer Nanopore for Single Molecule Detection. <i>Nano Letters</i> , <b>2004</b> , 4, 497-501	11.5	215
89	Nanofluidic ionic diodes. Comparison of analytical and numerical solutions. <i>ACS Nano</i> , <b>2008</b> , 2, 1589-602	16.7	182

88	Resistive-pulse DNA detection with a conical nanopore sensor. <i>Langmuir</i> , <b>2006</b> , 22, 10837-43	4	177
87	Poisson-Nernst-Planck model of ion current rectification through a nanofluidic diode. <i>Physical Review E</i> , <b>2007</b> , 76, 041202	2.4	173
86	Preparation of synthetic nanopores with transport properties analogous to biological channels. <i>Surface Science</i> , <b>2003</b> , 532-535, 1061-1066	1.8	165
85	Hydrogen peroxide sensing with horseradish peroxidase-modified polymer single conical nanochannels. <i>Analytical Chemistry</i> , <b>2011</b> , 83, 1673-80	7.8	151
84	DNA-modified polymer pores allow pH- and voltage-gated control of channel flux. <i>Journal of the American Chemical Society</i> , <b>2014</b> , 136, 9902-5	16.4	146
83	Nanoprecipitation-assisted ion current oscillations. <i>Nature Nanotechnology</i> , <b>2008</b> , 3, 51-7	28.7	140
82	Conical nanopore membranes: controlling the nanopore shape. <i>Small</i> , <b>2006</b> , 2, 194-8	11	135
81	A nanodevice for rectification and pumping ions. <i>American Journal of Physics</i> , <b>2004</b> , 72, 567-574	0.7	135
80	Control of ionic transport through gated single conical nanopores. <i>Analytical and Bioanalytical Chemistry</i> , <b>2009</b> , 394, 413-9	4.4	134
79	Calcium-induced voltage gating in single conical nanopores. <i>Nano Letters</i> , <b>2006</b> , 6, 1729-34	11.5	128
78	Versatile ultrathin nanoporous silicon nitride membranes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2009</b> , 106, 21039-44	11.5	127
77	Critical Knowledge Gaps in Mass Transport through Single-Digit Nanopores: A Review and Perspective. <i>Journal of Physical Chemistry C</i> , <b>2019</b> , 123, 21309-21326	3.8	121
76	Rectification of Concentration Polarization in Mesopores Leads To High Conductance Ionic Diodes and High Performance Osmotic Power. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 3691-3698	16.4	112
75	The role of pore geometry in single nanoparticle detection. <i>ACS Nano</i> , <b>2012</b> , 6, 8366-80	16.7	90
74	Transport of ions and biomolecules through single asymmetric nanopores in polymer films. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , <b>2005</b> , 236, 109-116	1.2	83
73	A nanofluidic ion regulation membrane with aligned cellulose nanofibers. <i>Science Advances</i> , <b>2019</b> , 5, eaau4238	14.38	81
72	Negative incremental resistance induced by calcium in asymmetric nanopores. <i>Nano Letters</i> , <b>2006</b> , 6, 473-7	11.5	77
71	Biomimetic potassium-selective nanopores. <i>Science Advances</i> , <b>2019</b> , 5, eaav2568	14.3	74

70	Squeezing ionic liquids through nanopores. <i>Nano Letters</i> , <b>2009</b> , 9, 2125-8	11.5	70
69	Biomolecular conjugation inside synthetic polymer nanopores via glycoprotein-lectin interactions. <i>Nanoscale</i> , <b>2011</b> , 3, 1894-903	7.7	69
68	Rectification of Ion Current in Nanopores Depends on the Type of Monovalent Cations: Experiments and Modeling. <i>Journal of Physical Chemistry C</i> , <b>2014</b> , 118, 9809-9819	3.8	63
67	Voltage-Induced Modulation of Ionic Concentrations and Ion Current Rectification in Mesopores with Highly Charged Pore Walls. <i>Journal of Physical Chemistry Letters</i> , <b>2018</b> , 9, 393-398	6.4	62
66	Synthetic nanopores as a test case for ion channel theories: the anomalous mole fraction effect without single filing. <i>Biophysical Journal</i> , <b>2008</b> , 95, 609-19	2.9	61
65	Polystyrene particles reveal pore substructure as they translocate. <i>ACS Nano</i> , <b>2012</b> , 6, 7295-302	16.7	58
64	Comparison of bipolar and unipolar ionic diodes. <i>Nanotechnology</i> , <b>2010</b> , 21, 265301	3.4	58
63	Salt Solutions in Carbon Nanotubes: The Role of Cation- $\pi$ Interactions. <i>Journal of Physical Chemistry C</i> , <b>2016</b> , 120, 7332-7338	3.8	57
62	Charged Particles Modulate Local Ionic Concentrations and Cause Formation of Positive Peaks in Resistive-Pulse-Based Detection. <i>Journal of Physical Chemistry C</i> , <b>2014</b> , 118, 2391-2398	3.8	57
61	The Design and Characterization of Multifunctional Aptamer Nanopore Sensors. <i>ACS Nano</i> , <b>2018</b> , 12, 4844-4852	16.7	52
60	Nonequilibrium 1/f noise in rectifying nanopores. <i>Physical Review Letters</i> , <b>2009</b> , 103, 248104	7.4	51
59	Statistical analysis of ionic current fluctuations in membrane channels. <i>Physical Review E</i> , <b>1999</b> , 60, 7343-84	8.4	50
58	Highly Charged Particles Cause a Larger Current Blockage in Micropores Compared to Neutral Particles. <i>ACS Nano</i> , <b>2016</b> , 10, 8413-22	16.7	42
57	Effect of crown ether on ion currents through synthetic membranes containing a single conically shaped nanopore. <i>Journal of Physical Chemistry B</i> , <b>2005</b> , 109, 18400-7	3.4	42
56	Particle deformation and concentration polarization in electroosmotic transport of hydrogels through pores. <i>ACS Nano</i> , <b>2013</b> , 7, 3720-8	16.7	41
55	Pores with longitudinal irregularities distinguish objects by shape. <i>ACS Nano</i> , <b>2015</b> , 9, 4390-7	16.7	40
54	Molecular control of ionic conduction in polymer nanopores. <i>Faraday Discussions</i> , <b>2009</b> , 143, 47-62; discussion 81-93	3.6	39
53	Polarization of Gold in Nanopores Leads to Ion Current Rectification. <i>Journal of Physical Chemistry Letters</i> , <b>2016</b> , 7, 4152-4158	6.4	35

52	Charge Inversion and Calcium Gating in Mixtures of Ions in Nanopores. <i>Journal of the American Chemical Society</i> , <b>2020</b> , 142, 2925-2934	16.4	33
51	Nanopores and Nanochannels: From Gene Sequencing to Genome Mapping. <i>ACS Nano</i> , <b>2016</b> , 10, 9768-9777	17	33
50	Rectification of nanopores in aprotic solvents--transport properties of nanopores with surface dipoles. <i>Nanoscale</i> , <b>2015</b> , 7, 19080-91	7.7	32
49	A hydrophobic entrance enhances ion current rectification and induces dewetting in asymmetric nanopores. <i>Analyst, The</i> , <b>2012</b> , 137, 2944-50	5	32
48	Precipitation-Induced Voltage-Dependent Ion Current Fluctuations in Conical Nanopores. <i>Journal of Physical Chemistry C</i> , <b>2010</b> , 114, 8126-8134	3.8	31
47	Direction Dependence of Resistive-Pulse Amplitude in Conically Shaped Mesopores. <i>Analytical Chemistry</i> , <b>2016</b> , 88, 4917-25	7.8	31
46	Solid-State Ionic Diodes Demonstrated in Conical Nanopores. <i>Journal of Physical Chemistry C</i> , <b>2017</b> , 121, 6170-6176	3.8	28
45	Modulation of Charge Density and Charge Polarity of Nanopore Wall by Salt Gradient and Voltage. <i>ACS Nano</i> , <b>2019</b> , 13, 9868-9879	16.7	26
44	Viscosity and Conductivity Tunable Diode-like Behavior for Meso- and Micropores. <i>Journal of Physical Chemistry Letters</i> , <b>2017</b> , 8, 3846-3852	6.4	25
43	Anomalous mobility of highly charged particles in pores. <i>Analytical Chemistry</i> , <b>2015</b> , 87, 8517-23	7.8	24
42	Abnormal Ionic-Current Rectification Caused by Reversed Electroosmotic Flow under Viscosity Gradients across Thin Nanopores. <i>Analytical Chemistry</i> , <b>2019</b> , 91, 996-1004	7.8	24
41	Diffusion and Trapping of Single Particles in Pores with Combined Pressure and Dynamic Voltage. <i>Journal of Physical Chemistry C</i> , <b>2014</b> , 118, 19214-19223	3.8	23
40	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. <i>Physica A: Statistical Mechanics and Its Applications</i> , <b>2001</b> , 297, 79-96	3.3	22
39	Ionic amplifying circuits inspired by electronics and biology. <i>Nature Communications</i> , <b>2020</b> , 11, 1568	17.4	21
38	DNA strands attached inside single conical nanopores: ionic pore characteristics and insight into DNA biophysics. <i>Journal of Membrane Biology</i> , <b>2011</b> , 239, 105-13	2.3	21
37	Asymmetric properties of ion current 1/f noise in conically shaped nanopores. <i>Chemical Physics</i> , <b>2010</b> , 375, 529-535	2.3	20
36	Tunable Current Rectification and Selectivity Demonstrated in Nanofluidic Diodes through Kinetic Functionalization. <i>Journal of Physical Chemistry Letters</i> , <b>2020</b> , 11, 60-66	6.4	20
35	Gating of Hydrophobic Nanopores with Large Anions. <i>ACS Nano</i> , <b>2020</b> , 14, 4306-4315	16.7	18

34	Role of Particle Focusing in Resistive-Pulse Technique: Direction-Dependent Velocity in Micropores. <i>ACS Nano</i> , <b>2016</b> , 10, 3509-17	16.7	18
33	Disentangling steric and electrostatic factors in nanoscale transport through confined space. <i>Nano Letters</i> , <b>2013</b> , 13, 3890-6	11.5	18
32	Reading amino acids in a nanopore. <i>Nature Biotechnology</i> , <b>2020</b> , 38, 159-160	44.5	17
31	Improving on aquaporins. <i>Science</i> , <b>2017</b> , 357, 753	33.3	17
30	Velocity profiles in pores with undulating opening diameter and their importance for resistive-pulse experiments. <i>Analytical Chemistry</i> , <b>2014</b> , 86, 10445-53	7.8	17
29	Nanopore Current Oscillations: Nonlinear Dynamics on the Nanoscale. <i>Journal of Physical Chemistry Letters</i> , <b>2015</b> , 6, 1800-6	6.4	15
28	Electrodifusioosmosis-Induced Negative Differential Resistance in pH-Regulated Mesopores Containing Purely Monovalent Solutions. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 3198-3204	9.5	14
27	Ion transport in gel and gel-liquid systems for LiClO <sub>4</sub> -doped PMMA at the meso- and nanoscales. <i>Nanoscale</i> , <b>2017</b> , 9, 16232-16243	7.7	13
26	Modulation of Ionic Current Rectification in Ultrashort Conical Nanopores. <i>Analytical Chemistry</i> , <b>2020</b> , 92, 16188-16196	7.8	13
25	Concentration-Polarization-Induced Precipitation and Ionic Current Oscillations with Tunable Frequency. <i>Journal of Physical Chemistry C</i> , <b>2018</b> , 122, 3648-3654	3.8	12
24	Statistical and fractal analyses of rat prostate cancer cell motility in a direct current electric field: comparison of strongly and weakly metastatic cells. <i>European Biophysics Journal</i> , <b>2003</b> , 32, 12-21	1.9	11
23	Electrokinetic Phenomena in Organic Solvents. <i>Journal of Physical Chemistry B</i> , <b>2019</b> , 123, 6123-6131	3.4	10
22	Probing charges on solid-liquid interfaces with the resistive-pulse technique. <i>Nanoscale</i> , <b>2017</b> , 9, 13527-13537	17.7	10
21	Presence of electrolyte promotes wetting and hydrophobic gating in nanopores with residual surface charges. <i>Analyst, The</i> , <b>2015</b> , 140, 4804-12	5	10
20	Ag nanotubes and Ag/AgCl electrodes in nanoporous membranes. <i>Nanotechnology</i> , <b>2011</b> , 22, 155301	3.4	10
19	A dual mode mechanism of conductance through fine porous membranes. <i>Journal of Membrane Science</i> , <b>1998</b> , 145, 253-263	9.6	10
18	Nanopores: Generation, Engineering, and Single-Molecule Applications <b>2009</b> , 293		10
17	A hybrid resistive pulse-optical detection platform for microfluidic experiments. <i>Scientific Reports</i> , <b>2017</b> , 7, 10173	4.9	9

16	Tunable Nanopore Arrays as the Basis for Ionic Circuits. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 56622-56631	9.5	8
15	Experimental Investigation of Dynamic Deprotonation/Protonation of Highly Charged Particles. <i>Journal of Physical Chemistry C</i> , <b>2017</b> , 121, 6255-6263	3.8	6
14	Probing Porous Structure of Single Manganese Oxide Mesorods with Ionic Current. <i>Journal of Physical Chemistry C</i> , <b>2013</b> , 117, 24836-24842	3.8	6
13	What can be learnt from the analysis of short time series of ion channel recordings. <i>Physica A: Statistical Mechanics and Its Applications</i> , <b>2000</b> , 276, 376-390	3.3	5
12	Ionic conductivity of a single porous MnO <sub>2</sub> mesorod at controlled oxidation states. <i>Journal of Materials Chemistry A</i> , <b>2015</b> , 3, 12858-12863	13	4
11	Synthesis and Biological Evaluation of a Valinomycin Analog Bearing a Pentafluorophenyl Active Ester Moiety. <i>Journal of Organic Chemistry</i> , <b>2015</b> , 80, 12646-50	4.2	4
10	Searching for self-similarity in switching time and turbulent cascades in ion transport through a biochannel. A time delay asymmetry. <i>Physica A: Statistical Mechanics and Its Applications</i> , <b>2004</b> , 336, 319-333	3.3	4
9	Enhanced electro-osmosis in propylene carbonate salt solutions. <i>Journal of Chemical Physics</i> , <b>2021</b> , 154, 134707	3.9	3
8	Probing ion current in solid-electrolytes at the meso- and nanoscale. <i>Faraday Discussions</i> , <b>2018</b> , 210, 55-67	6.6	2
7	The polymer structure and morphology in terms of the concepts of chaos and fractals. <i>Polimery</i> , <b>1998</b> , 43, 225-238	3.4	2
6	Processes at nanopores and bio-nanointerfaces: general discussion. <i>Faraday Discussions</i> , <b>2018</b> , 210, 145-171	17.1	2
5	Principles of Small-Molecule Transport through Synthetic Nanopores. <i>ACS Nano</i> , <b>2021</b> , 15, 16194-16206	16.7	2
4	Processes at nanoelectrodes: general discussion. <i>Faraday Discussions</i> , <b>2018</b> , 210, 235-265	3.6	1
3	Information Dynamics of a Nonlinear Stochastic Nanopore System. <i>Entropy</i> , <b>2018</b> , 20,	2.8	1
2	Deep learning assisted mechanotyping of individual cells through repeated deformations and relaxations in undulating channels. <i>Biomicrofluidics</i> , <b>2022</b> , 16, 014104	3.2	1
1	Macroscopic strain controlled ion current in an elastomeric microchannel. <i>Journal of Applied Physics</i> , <b>2015</b> , 117, 174904	2.5	