Makusu Tsutsui

List of Publications by Year
in descending order

137 papers	4,326 citations	101384 36 h-index	128067 60 g-index
139 all docs	139 docs citations	139 times ranked	3138 citing authors

#	Article	IF	Citations
1	3D designing of resist membrane pores via direct electron beam lithography. Sensors and Actuators B: Chemical, 2022, 357, 131380.	4.0	1
2	Ionic heat dissipation in solid-state pores. Science Advances, 2022, 8, eabl7002.	4.7	12
3	Dependence of Molecular Diode Behaviors on Aromaticity. Journal of Physical Chemistry Letters, 2022, 13, 6359-6366.	2.1	5
4	Solid-State Nanopore Platform Integrated with Machine Learning for Digital Diagnosis of Virus Infection. Analytical Chemistry, 2021, 93, 215-227.	3.2	52
5	Inertial focusing and zeta potential measurements of single-nanoparticles using octet-nanochannels. Lab on A Chip, 2021, 21, 3076-3085.	3.1	0
6	Classification from positive and unlabeled data based on likelihood invariance for measurement. Intelligent Data Analysis, 2021, 25, 57-79.	0.4	5
7	Dielectric Coatings for Resistive Pulse Sensing Using Solid-State Pores. ACS Applied Materials & Interfaces, 2021, 13, 10632-10638.	4.0	4
8	Nanochannelâ€Based Interfacial Memristor: Electrokinetic Analysis of the Frequency Characteristics. Advanced Electronic Materials, 2021, 7, 2000848.	2.6	6
9	Effect of Electrolyte Concentration on Cell Sensing by Measuring Ionic Current Waveform through Micropores. Biosensors, 2021, 11, 78.	2.3	2
10	Field effect control of translocation dynamics in surround-gate nanopores. Communications Materials, 2021, 2, .	2.9	14
11	Rapid Discrimination of Extracellular Vesicles by Shape Distribution Analysis. Analytical Chemistry, 2021, 93, 7037-7044.	3.2	15
12	Deep Learningâ€Enhanced Nanopore Sensing of Singleâ€Nanoparticle Translocation Dynamics. Small Methods, 2021, 5, e2100191.	4.6	12
13	Combining machine learning and nanopore construction creates an artificial intelligence nanopore for coronavirus detection. Nature Communications, 2021, 12, 3726.	5.8	80
14	Solid-state nanopore systems: from materials to applications. NPG Asia Materials, 2021, 13, .	3.8	47
15	Detecting Single Molecule Deoxyribonucleic Acid in a Cell Using a Threeâ€Dimensionally Integrated Nanopore. Small Methods, 2021, 5, 2100542.	4.6	4
16	Diagnosing Diseases with Nanopore Devices and Machine Learning. Journal of the Institute of Electrical Engineers of Japan, 2021, 141, 512-515.	0.0	0
17	Detecting Single Molecule Deoxyribonucleic Acid in a Cell Using a Threeâ€Dimensionally Integrated Nanopore (Small Methods 9/2021). Small Methods, 2021, 5, 2170043.	4.6	1
18	Salt Gradient Control of Translocation Dynamics in a Solid-State Nanopore. Analytical Chemistry, 2021, 93, 16700-16708.	3.2	5

#	Article	IF	Citations
19	Tailoring Dielectric Surface Charge via Atomic Layer Thickness. ACS Applied Materials & Interfaces, 2020, 12, 5025-5030.	4.0	5
20	Dissecting Time-Evolved Conductance Behavior of Single Molecule Junctions by Nonparametric Machine Learning. Journal of Physical Chemistry Letters, 2020, 11, 6567-6572.	2.1	7
21	Nano-corrugated Nanochannels for In Situ Tracking of Single-Nanoparticle Translocation Dynamics. ACS Sensors, 2020, 5, 2530-2536.	4.0	3
22	Electroosmosis-Driven Nanofluidic Diodes. Journal of Physical Chemistry B, 2020, 124, 7086-7092.	1.2	12
23	Machine learning-driven electronic identifications of single pathogenic bacteria. Scientific Reports, 2020, 10, 15525.	1.6	9
24	Digital Pathology Platform for Respiratory Tract Infection Diagnosis via Multiplex Single-Particle Detections. ACS Sensors, 2020, 5, 3398-3403.	4.0	21
25	Quasi-Stable Salt Gradient and Resistive Switching in Solid-State Nanopores. ACS Applied Materials & Interfaces, 2020, 12, 52175-52181.	4.0	12
26	Crucial Role of Out-of-Pore Resistance on Temporal Response of Ionic Current in Nanopore Sensors. ACS Sensors, 2020, 5, 1597-1603.	4.0	4
27	Finite-difference time-domain simulations of inverted cone-shaped plasmonic nanopore structures. Journal of Applied Physics, 2020, 127, .	1.1	3
28	Time-resolved neurotransmitter detection in mouse brain tissue using an artificial intelligence-nanogap. Scientific Reports, 2020, 10, 11244.	1.6	18
29	Thermally activated charge transport in carbon atom chains. Nanoscale, 2020, 12, 11001-11007.	2.8	1
30	Back-Side Polymer-Coated Solid-State Nanopore Sensors. ACS Omega, 2019, 4, 12561-12566.	1.6	7
31	Solid-State Nanopore Time-of-Flight Mass Spectrometer. ACS Sensors, 2019, 4, 2974-2979.	4.0	17
32	High-Precision Single-Molecule Identification Based on Single-Molecule Information within a Noisy Matrix. Journal of Physical Chemistry C, 2019, 123, 15867-15873.	1.5	33
33	Volume discrimination of nanoparticles via electrical trapping using nanopores. Journal of Nanobiotechnology, 2019, 17, 40.	4.2	4
34	High-throughput single-particle detections using a dual-height-channel-integrated pore. Lab on A Chip, 2019, 19, 1352-1358.	3.1	4
35	Electric field interference and bimodal particle translocation in nano-integrated multipores. Nanoscale, 2019, 11, 7547-7553.	2.8	6
36	Silicon substrate effects on ionic current blockade in solid-state nanopores. Nanoscale, 2019, 11, 4190-4197.	2.8	5

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37	Identifying Single Particles in Air Using a 3D-Integrated Solid-State Pore. ACS Sensors, 2019, 4, 748-755.	4.0	17
38	Heat dissipation in quasi-ballistic single-atom contacts at room temperature. Scientific Reports, 2019, 9, 18677.	1.6	5
39	High-throughput single nanoparticle detection using a feed-through channel-integrated nanopore. Nanoscale, 2019, 11, 20475-20484.	2.8	10
40	Electrical Nucleotide Sensor Based on Synthetic Guanineâ€Receptorâ€Modified Electrodes. ChemistrySelect, 2018, 3, 3819-3824.	0.7	2
41	Identification of Individual Bacterial Cells through the Intermolecular Interactions with Peptide-Functionalized Solid-State Pores. Analytical Chemistry, 2018, 90, 1511-1515.	3.2	34
42	Impact of ionization equilibrium on electrokinetic flow of weak electrolytes in nanochannels. Nanotechnology, 2018, 29, 295402.	1.3	0
43	Identifying Single Viruses Using Biorecognition Solid-State Nanopores. Journal of the American Chemical Society, 2018, 140, 16834-16841.	6.6	81
44	Particle Capture in Solid-State Multipores. ACS Sensors, 2018, 3, 2693-2701.	4.0	10
45	Selective detections of single-viruses using solid-state nanopores. Scientific Reports, 2018, 8, 16305.	1.6	65
46	Temporal Response of Ionic Current Blockade in Solid-State Nanopores. ACS Applied Materials & Interfaces, 2018, 10, 34751-34757.	4.0	22
47	Remote heat dissipation in atom-sized contacts. Scientific Reports, 2018, 8, 7842.	1.6	3
48	Measuring Single-Molecule Conductance at An Ultra-Low Molecular Concentration in Vacuum. Micromachines, 2018, 9, 282.	1.4	4
49	Quadrupole-electrode-integrated micropores for selective single-particle detections. , 2018, , .		1
50	Quantitative analysis of DNA with single-molecule sequencing. Scientific Reports, 2018, 8, 8517.	1.6	31
51	Roles of vacuum tunnelling and contact mechanics in single-molecule thermopower. Scientific Reports, 2017, 7, 44276.	1.6	9
52	Fast and low-noise tunnelling current measurements for single-molecule detection in an electrolyte solution using insulator-protected nanoelectrodes. Nanoscale, 2017, 9, 4076-4081.	2.8	13
53	Short channel effects on electrokinetic energy conversion in solid-state nanopores. Scientific Reports, 2017, 7, 46661.	1.6	34
54	Stretching-Induced Conductance Variations as Fingerprints of Contact Configurations in Single-Molecule Junctions. Journal of the American Chemical Society, 2017, 139, 8286-8294.	6.6	29

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55	Electrokinetic Analysis of Energy Harvest from Natural Salt Gradients in Nanochannels. Scientific Reports, 2017, 7, 13156.	1.6	31
56	Rapid structural analysis of nanomaterials in aqueous solutions. Nanotechnology, 2017, 28, 155501.	1.3	26
57	Discriminating single-bacterial shape using low-aspect-ratio pores. Scientific Reports, 2017, 7, 17371.	1.6	58
58	The impact of membrane surface charges on the ion transport in MoS2 nanopore power generators. Applied Physics Letters, 2017, 111, .	1.5	15
59	Detecting Single-Nucleotides by Tunneling Current Measurements at Sub-MHz Temporal Resolution. Sensors, 2017, 17, 885.	2.1	8
60	Electrical trapping mechanism of single-microparticles in a pore sensor. AIP Advances, 2016, 6, 115004.	0.6	6
61	Salt-Gradient Approach for Regulating Capture-to-Translocation Dynamics of DNA with Nanochannel Sensors. ACS Sensors, 2016, 1, 807-816.	4.0	26
62	Tailoring particle translocation via dielectrophoresis in pore channels. Scientific Reports, 2016, 6, 31670.	1.6	20
63	Dipole effects on the formation of molecular junctions. Nanoscale Horizons, 2016, 1, 399-406.	4.1	9
64	Particle Trajectory-Dependent Ionic Current Blockade in Low-Aspect-Ratio Pores. ACS Nano, 2016, 10, 803-809.	7.3	69
65	Nanofluidics for Biomolecular Detection. RSC Nanoscience and Nanotechnology, 2016, , 150-189.	0.2	2
66	High thermopower of mechanically stretched single-molecule junctions. Scientific Reports, 2015, 5, 11519.	1.6	45
67	Development of a Single Molecular Tunnel-Current Identification method For Electrical Genome Sequencing. Materials Research Society Symposia Proceedings, 2015, 1724, 13.	0.1	0
68	Impact of Water-Depletion Layer on Transport in Hydrophobic Nanochannels. Analytical Chemistry, 2015, 87, 12040-12050.	3.2	5
69	Fabrications of insulator-protected nanometer-sized electrode gaps. Journal of Applied Physics, 2014, 115, .	1.1	14
70	Discrimination of equi-sized nanoparticles by surface charge state using low-aspect-ratio pore sensors. Applied Physics Letters, 2014, 104, .	1.5	14
71	Thermoelectric voltage measurements of atomic and molecular wires using microheater-embedded mechanically-controllable break junctions. Nanoscale, 2014, 6, 8235-8241.	2.8	33
72	Electrode-embedded nanopores for label-free single-molecule sequencing by electric currents. RSC Advances, 2014, 4, 15886-15899.	1.7	40

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73	Detection of post-translational modifications in single peptides using electron tunnelling currents. Nature Nanotechnology, 2014, 9, 835-840.	15.6	122
74	Graphene/hexagonal boron nitride/graphene nanopore for electrical detection of single molecules. NPG Asia Materials, 2014, 6, e104-e104.	3.8	17
75	Nonequilibrium Ionic Response of Biased Mechanically Controllable Break Junction (MCBJ) Electrodes. Journal of Physical Chemistry C, 2014, 118, 3758-3765.	1.5	17
76	Development of single-molecule tunnel-current based nucleotide identification method. , 2014, , .		0
77	Mechanism of How Salt-Gradient-Induced Charges Affect the Translocation of DNA Molecules through a Nanopore. Biophysical Journal, 2013, 105, 776-782.	0.2	45
78	Trapping and identifying single-nanoparticles using a low-aspect-ratio nanopore. Applied Physics Letters, 2013, 103, 013108.	1.5	28
79	High speed DNA denaturation using microheating devices. Applied Physics Letters, 2013, 103, 023112.	1.5	4
80	Fluctuated atom-sized junctions in a liquid environment. Journal of Applied Physics, 2013, 113, 024303.	1.1	4
81	Thermophoretic Manipulation of DNA Translocation through Nanopores. ACS Nano, 2013, 7, 538-546.	7.3	77
82	Thermoelectricity in atom-sized junctions at room temperatures. Scientific Reports, 2013, 3, 3326.	1.6	42
83	Vibrational spectroscopy of single-molecule junctions by direct current measurements. Journal of Applied Physics, 2013, 113, .	1.1	9
84	Tracking single-particle dynamics via combined optical and electrical sensing. Scientific Reports, 2013, 3, 1855.	1.6	24
85	Fluid Dynamics and Electrical Detection of Î»DNA in Electrode-Embedded Nanochannels. Journal of Biomechanical Science and Engineering, 2013, 8, 244-256.	0.1	7
86	Embedded TiO2 waveguides for sensing nanofluorophores in a microfluidic channel. Applied Physics Letters, 2012, 101, 153115.	1.5	4
87	Transverse electric field dragging of DNA in a nanochannel. Scientific Reports, 2012, 2, 394.	1.6	60
88	Unsymmetrical hot electron heating in quasi-ballistic nanocontacts. Scientific Reports, 2012, 2, 217.	1.6	26
89	Nano-scale reactive-ion dry-etching with electron-beam-baked resist. , 2012, , .		0
90	DNA capture in nanopores for genome sequencing: challenges and opportunities. Journal of Materials Chemistry, 2012, 22, 13423.	6.7	21

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91	Electrical detection of single pollen allergen particles using electrode-embedded microchannels. Journal of Physics Condensed Matter, 2012, 24, 164202.	0.7	20
92	Tunnel-current based single-molecule identification of DNA/RNA oligmer by using nano-MCBJ. , 2012, , .		1
93	Single-Molecule Electrical Random Resequencing of DNA and RNA. Scientific Reports, 2012, 2, 501.	1.6	131
94	Single Molecule Electronics and Devices. Sensors, 2012, 12, 7259-7298.	2.1	122
95	Single-Nanoparticle Detection Using a Low-Aspect-Ratio Pore. ACS Nano, 2012, 6, 3499-3505.	7.3	90
96	Electrical Detection of Single Methylcytosines in a DNA Oligomer. Journal of the American Chemical Society, 2011, 133, 9124-9128.	6.6	76
97	Controlling DNA Translocation through Gate Modulation of Nanopore Wall Surface Charges. ACS Nano, 2011, 5, 5509-5518.	7.3	208
98	Gate Manipulation of DNA Capture into Nanopores. ACS Nano, 2011, 5, 8391-8397.	7.3	104
99	Dependence of Single-Molecule Conductance on Molecule Junction Symmetry. Journal of the American Chemical Society, 2011, 133, 11426-11429.	6.6	89
100	Electrical Detection of Pollen Allergen Using Electrode-Embedded-Micro-Channel. , 2011, , .		0
101	Development of microfabricated TiO2 channel waveguides. AIP Advances, 2011, 1, .	0.6	47
102	Single-molecule sensing electrode embedded in-plane nanopore. Scientific Reports, 2011, 1, 46.	1.6	80
103	Atomically controlled fabrications of subnanometer scale electrode gaps. Journal of Applied Physics, 2010, 108, 064312.	1.1	16
104	Identifying single nucleotides by tunnelling current. Nature Nanotechnology, 2010, 5, 286-290.	15.6	367
105	Roles of lattice cooling on local heating in metal-molecule-metal junctions. Applied Physics Letters, 2010, 96, .	1.5	18
106	Single-molecule identification via electric current noise. Nature Communications, 2010, 1, 138.	5.8	55
107	Mechanically-controllable single molecule switch based on configuration specific electrical conductivity of metalâ€"moleculeâ€"metal junctions. Chemical Science, 2010, 1, 247.	3.7	36
108	Moleculeâ˘'Electrode Bonding Design for High Single-Molecule Conductance. Journal of the American Chemical Society, 2010, 132, 17364-17365.	6.6	25

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109	Identifying molecular signatures in metal-molecule-metal junctions. Nanoscale, 2009, 1, 164.	2.8	37
110	Inelastic electron tunneling spectroscopy of single-molecule junctions using a mechanically controllable break junction. Nanotechnology, 2009, 20, 434008.	1.3	49
111	Transverse Field Effects on DNA-Sized Particle Dynamics. Nano Letters, 2009, 9, 1659-1662.	4.5	27
112	Single-Molecule Junctions with Strong Moleculeâ^'Electrode Coupling. Journal of the American Chemical Society, 2009, 131, 14146-14147.	6.6	25
113	Quantitative Evaluation of Metalâ^'Molecule Contact Stability at the Single-Molecule Level. Journal of the American Chemical Society, 2009, 131, 10552-10556.	6.6	52
114	Fabrication of the gating nanopore device. Applied Physics Letters, 2009, 95, 123701.	1.5	47
115	Atomistic Mechanics and Formation Mechanism of Metalâ^'Moleculeâ^'Metal Junctions. Nano Letters, 2009, 9, 2433-2439.	4.5	47
116	Formation and Self-Breaking Mechanism of Stable Atom-Sized Junctions. Nano Letters, 2008, 8, 345-349.	4.5	136
117	Local Heating in Metalâ^'Moleculeâ^'Metal Junctions. Nano Letters, 2008, 8, 3293-3297.	4.5	95
118	High-bias breakdown of Au/1,4-benzenedithiol/Au junctions. Applied Physics Letters, 2008, 93, 083121.	1.5	13
119	Thermodynamic stability of single molecule junctions. Applied Physics Letters, 2008, 92, .	1.5	33
120	Fabrication of 0.5 nm electrode gaps using self-breaking technique. Applied Physics Letters, 2008, 93, 163115.	1.5	32
121	Measurement Environment Dependency of Single Molecule Conductance. Chemistry Letters, 2008, 37, 990-991.	0.7	1
122	Distribution of 1G0Plateau Length of Au Contacts at Room Temperature. Japanese Journal of Applied Physics, 2007, 46, 3694-3699.	0.8	16
123	Bias-induced local heating in atom-sized metal contacts at 77K. Applied Physics Letters, 2007, 90, 133121.	1.5	28
124	AC impedance of multi-walled carbon nanotubes. E-Journal of Surface Science and Nanotechnology, 2007, 5, 12-16.	0.1	7
125	Electrical breakdown of short multiwalled carbon nanotubes. Journal of Applied Physics, 2006, 100, 094302.	1.1	21
126	Local heating in noble metal nanocontacts under high biases at 77K. Applied Surface Science, 2006, 252, 8677-8682.	3.1	8

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127	Bias-Induced Local Heating Effects on Multi-Walled Carbon Nanotubeâ€"Au Contacts. Japanese Journal of Applied Physics, 2006, 45, 341-345.	0.8	6
128	Bias-induced local heating in Au atom-sized contacts. Nanotechnology, 2006, 17, 5334-5338.	1.3	43
129	Conductance of Atom-Sized Zn Contacts. Japanese Journal of Applied Physics, 2006, 45, 7217-7223.	0.8	13
130	High-conductance states of single benzenedithiol molecules. Applied Physics Letters, 2006, 89, 163111.	1.5	87
131	Break Conductance of Pt Nanocontacts. Japanese Journal of Applied Physics, 2005, 44, 6321-6326.	0.8	7
132	Effective Temperature of Au Nanocontacts under High Biases. Japanese Journal of Applied Physics, 2005, 44, 5188-5190.	0.8	17
133	Break conductance of noble metal contacts. Physical Review B, 2005, 72, .	1.1	28
134	Conductance versus bias voltage characteristics of multi-walled carbon nanotubes. Nanotechnology, 2005, 16, 1863-1867.	1.3	10
135	Effects of in-doping on the thermoelectric properties of Î²-Zn4Sb3. Intermetallics, 2004, 12, 809-813.	1.8	63
136	Thermoelectric properties of Zn4Sb3 thin films prepared by magnetron sputtering. Thin Solid Films, 2003, 443, 84-90.	0.8	37
137	Effects of ZnSb and Zn inclusions on the thermoelectric properties of Î²-Zn4Sb3. Journal of Alloys and Compounds, 2003, 358, 252-256.	2.8	118